

Making an economic impact: Higher education and the English regions



Research reports

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This is the first published study of the impact of the higher education sector on the English regions (although a modeller issued by Universities UK four years ago enabled universities to calculate their own local impact). In 1997 Universities UK published a study of the impact of universities on the UK economy and this report is based on a method that was first used then. Since then three further studies have been published, the most recent appearing in the autumn of 2009.

Since 1997 the economic importance of higher education has been much more widely recognised and its contribution to national and regional economic development is an important influence on policymaking. It is seen as fundamental to the creation and transfer of knowledge to the UK economy through its teaching, research and other activities.

This report on the English regions provides new evidence of the impact of universities as independent businesses (additional to their role in increasing the stock of human capital). The economic activity generated by university expenditure (the aspect of the sector's economic contribution which is most readily quantifiable) is substantial. The scale of university activity across the UK also means that this can be very important at the macroeconomic level. The report measures the growing economic importance of the sector, in terms of its income, gross export earnings and total workforce in the academic year 2007/08. It measures the sector's wider economic impact in terms of its total output in each of the nine regions of England.

The report confirms the substantial effect of higher education activity on employment, with universities creating many jobs in their regions and across the UK. The report provides further evidence of the importance of international students to the sector and the wider economy. One significant regional impact highlighted in the report is the volume of personal off-campus expenditure of these students and their visitors.

Such activity depends on a continuing mix of public and private investment in the sector. Income from private sources amounts to 26 per cent of all higher education income – with considerable variations between institutions – but public investment (61 per cent of the total) will continue to play a vital role in the development of the sector. It is clear that such investment has a direct impact on the UK economy and employment levels as well as maintaining the health of the sector.

Introduction

The role of higher education in the economy is attracting growing attention in all developed countries. In particular its potential contribution to economic prosperity, through innovation and knowledge exchange to the wider society, is regarded as vitally important for economic development and growth. At a time of global economic crisis governments across the world are looking to their universities to support national and regional economies, through the development of new ideas, products and services from research as well as through continuing to raise citizens' levels of education and increase the national capacity to innovate and adapt.

In the UK it is increasingly recognised that the higher education sector forms a core part of the economic infrastructure, generating employment and output, attracting export earnings and contributing to the gross domestic product (GDP). The sector has become all the more important in a severe recession when other sectors of the economy are contracting.

This study presents key economic features of UK higher education in the academic year 2007/08 and those aspects of its contribution to the nine English regions that can be readily measured. It does not, therefore, include any assessment of the value of the sector's collaboration with business or the impact of new ideas generated by universities or their graduates. The sector is analysed as a conventional industry, highlighting the major economic characteristics of UK universities, including their sources of revenue, employment created, output generated and export earnings attracted. Modelled estimates are made of the economic activity generated in other sectors of the economy through the secondary or 'knock-on' multiplier effects of expenditure by universities and their staff, as well as by international students and visitors.

Methodology and data sources

The study is based on the 166 universities and colleges included in Higher Education Statistics Agency (HESA) data for the academic year 2007/08. (These institutions are referred to as universities throughout this report.) The study examined the key economic characteristics of universities and the impact generated by their activity. It also considered the impact of the off-campus expenditure of EU and international students (that is, all non-UK domiciled students) studying at UK universities.

We also modelled estimates of the impact of the off-campus expenditure of international visitors attracted to the UK by the universities. The off-campus expenditure of UK-domiciled students was excluded as this may be regarded as not additional to the UK economy as a whole.

The model was a purpose-designed and specially constructed 'type II' input-output model based on actual UK data derived from the Office of National Statistics' input-output tables (2006) together with data from its 'Blue Book' (2008). Data on university finance, staffing and students were obtained from HESA. Other data sources included Travel trends (Office of National Statistics) and a student expenditure survey (2009), published by the former Department for Innovation, Universities and Skills, as well as the Labour Force Survey and Annual Business Inquiry.

Key findings

East Midlands

- Total revenue of higher education was £1.38 billion in 2007/08
- International revenue amounted to nearly £181 million which, together with the estimated off-campus expenditure of international students (£146 million), represented a total of £327 million of export earnings
- Universities provided 20,687 full-time equivalent jobs across a wide range of occupations.
- The universities' own output was £1.36 billion. Through 'knock-on' effects they generated an additional £1.93 billion in other industries throughout the UK, with the majority (£1.56 billion) in the region
- 21,391 full-time equivalent jobs were generated outside the universities, with most based in the region
- Universities attracted 21,475 students from outside the UK to study in the region
- International students' off-campus expenditure (£146 million) generated £205 million of output and 1,930 full-time equivalent jobs throughout the UK.

East of England

- Total revenue of higher education was £1.98 billion in 2007/08
- International revenue amounted to nearly £265 million which, together with the estimated off-campus expenditure of international students

(£149 million), represented a total of £414 million of export earnings

- Universities provided 20,130 full-time equivalent jobs across a wide range of occupations.
- The universities' own output was £1.98 billion. Through 'knock-on' effects they generated an additional £2.72 billion in other industries throughout the UK, with most (£2.38 billion) in the region
- 30,119 full-time equivalent jobs were generated outside the universities, with the majority based in the region
- Universities attracted 21,835 students from outside the UK to study in the region
- International students' off-campus expenditure (£149 million) generated £209 million of output and 1,970 full-time equivalent jobs throughout the UK.

London

- Total revenue of higher education was £4.85 billion in 2007/08
- International revenue amounted to nearly £786 million which, together with the estimated off-campus expenditure of international students (£584 million), represented a total of £1,379 million of export earnings
- Universities provided 55,578 full-time equivalent jobs across a wide range of occupations.
- The universities' own output was £4.85 billion. Through 'knock-on' effects they generated an additional £6.7 billion in other industries throughout the UK, with most (£4.97 billion) in the region
- 74,641 full-time equivalent jobs were generated outside the universities, with the majority based in the region
- Universities attracted 85,815 students from outside the UK to study in the region
- International students' off-campus expenditure (£584 million) generated £820 million of output and 7,748 full-time equivalent jobs throughout the UK.

North East

- Total revenue of higher education was £967 million in 2007/08
- International revenue amounted to nearly £123 million which, together with the estimated off-campus expenditure of international students (£111 million), represented a total of £234 million of export earnings

- Universities provided 13,715 full-time equivalent jobs across a wide range of occupations.
- The universities' own output was £967 million. Through 'knock-on' effects they generated an additional £1.32 billion in other industries throughout the UK, with most (£939 million) in the region
- 14,683 full-time equivalent jobs were generated outside the universities, with most based in the region
- Universities attracted 16,310 students from outside the UK to study in the region
- International students' off-campus expenditure (£111 million) generated £156 million of output and 1,473 full-time equivalent jobs throughout the UK.

North West

- Total revenue of higher education was £2.26 billion in 2007/08
- International revenue amounted to nearly £240 million which, together with the estimated off-campus expenditure of international students (£205 million), represented a total of £445 million of export earnings
- Universities provided 32,308 full-time equivalent jobs across a wide range of occupations.
- The universities' own output was £2.26 billion. Through 'knock-on' effects they generated an additional £3.17 billion in other industries throughout the UK, with most (£2.63 billion) in the region
- 35,185 full-time equivalent jobs were generated outside the universities, with the majority based in the region
- Universities attracted 30,195 students from outside the UK to study in the region
- International students' off-campus expenditure (£205 million) generated £288 million of output and 2,726 full-time equivalent jobs throughout the UK.

South East

- Total revenue of higher education was £3.1 billion in 2007/08
- International revenue amounted to nearly £381 million which, together with the estimated off-campus expenditure of international students (£261 million), represented a total of £642 million of export earnings
- Universities provided 42,960 full-time equivalent jobs across a wide range of occupations.

- The universities' own output was £3.1 billion. Through 'knock-on' effects they generated an additional £4.3 billion in other industries throughout the UK, with most (£3.7 billion) in the region
- 48,051 full-time equivalent jobs were generated outside the universities, with most based in the region
- Universities attracted 38,425 students from outside the UK to study in the region
- International students' off-campus expenditure (£261 million) generated £367 million of output and over 3,469 full-time equivalent jobs throughout the UK.

South West

- Total revenue of higher education was £1.36 billion in 2007/08
- International revenue amounted to nearly £125 million which, together with the estimated off-campus expenditure of international students (£113 million), represented a total of £238 million of export earnings
- Universities provided 20,218 full-time equivalent jobs across a wide range of occupations.
- The universities' own output was £1.36 billion. Through 'knock-on' effects they generated an additional £1.9 billion in other industries throughout the UK, with most (£1.6 billion) in the region
- 20,878 full-time equivalent jobs were generated outside the universities, with most based in the region
- Universities attracted 16,640 students from outside the UK to study in the region
- International students' off-campus expenditure (£113 million) generated £158 million of output and over 1,500 full-time equivalent jobs throughout the UK.

West Midlands

- Total revenue of higher education was £1.64 billion in 2007/08
- International revenue amounted to nearly £194 million which, together with the estimated off-campus expenditure of international students (£187 million), represented a total of £381 million of export earnings
- Universities provided 23,638 full-time equivalent jobs across a wide range of occupations.
- The universities' own output was £1.64 billion. Through 'knock-on' effects they generated an

additional £2.2 billion in other industries throughout the UK, with most (£1.6 billion) in the region

- 24,775 full-time equivalent jobs were generated outside the universities, with most based in the region
- Universities attracted 27,480 students from outside the UK to study in the region
- International students' off-campus expenditure (£187 million) generated £263 million of output and over 2,481 full-time equivalent jobs throughout the UK.

Yorkshire and Humberside

- Total revenue of higher education was £1.84 billion in 2007/08
- International revenue amounted to nearly £216 million which, together with the estimated off-campus expenditure of international students (£181 million), represented a total of £397 million of export earnings
- Universities provided 27,719 full-time equivalent jobs across a wide range of occupations.
- The universities' own output was £1.84 billion. Through 'knock-on' effects they generated an additional £2.5 billion in other industries throughout the UK, with most of it (£1.84 billion) in the region
- 27,971 full-time equivalent jobs were generated outside the universities, with most based in the region
- Universities attracted 26,605 students from outside the UK to study in the region
- International students' off-campus expenditure (£181 million) generated £254 million of output and over 2,402 full-time equivalent jobs throughout the UK.

The role of higher education in the economy is attracting growing attention in all developed countries. In particular the potential for higher education to contribute to economic prosperity through innovation and knowledge transfer from universities to wider society is regarded as vitally important for economic development and growth. Universities and colleges are a core part of national and regional economic infrastructure, generating employment and output, attracting export earnings and contributing to gross domestic product (GDP). They are also part of local, regional, national and international networks influencing the political, social, cultural and economic climate.

At a time of global economic crisis governments across the world are looking to their universities to support the national and regional economies, through the development of new ideas, products and services from university research as well as through continuing to raise the education levels of citizens and the nation's ability to innovate and adapt.

The economic importance of universities is particularly noticeable in the regional economy. First, the knowledge and skills of higher education graduates contribute to the creation of a more flexible and adaptable workforce, which enhances that region's economic competitiveness. Secondly, as large employers universities make a very tangible contribution to the regional economy and have a significant impact through their expenditure and that of their staff and students. The strength of the higher education sector and its effectiveness in generating economic activity becomes all the more important in a recession, when other sectors of the economy are contracting.

Universities are relatively stable elements of the regional economic infrastructure. Although universities may be delivering additional services remotely and offering distance and e-learning opportunities, their core business still tends to be focused on physical campus sites. These are also the university 'headquarters' and are rooted in the region.

Universities are unlikely to move to other parts of the country or overseas – unlike many other industries. Indeed, for most of them part of their identity, reputation and 'brand' is inextricably connected to the identity of their host region, town or city and they play a key role in attracting qualified people to, and retaining such people in, the region. This makes universities increasingly

important in a global knowledge economy, when investment tends to follow the flow of knowledge and be anchored in a region by the availability of qualified and skilled people.

This study has been undertaken in parallel with a UK-wide study on *The impact of universities on the UK economy* (Universities UK, 2009) and alongside analyses of higher education in the other countries of the UK. We looked at the impact of universities and colleges in each of the nine regions of England, in Scotland, Wales and Northern Ireland as well as the UK-wide study.

The new studies all follow the same methodological approach, building on the UK-wide study. They follow a two-stage approach to the estimation of the economic impact of universities on their region. The impact of the relevant group of institutions on the UK economy was modelled, using a purpose-designed economic model of the UK. Analysis was then undertaken, using a location quotient approach, to estimate the share of the impact of a region's universities on the host region's economy.

The model used was a 'type II' input-output model based on actual UK data derived from the UK input-output tables (2006) published by the Office of National Statistics together with Labour Force Survey and Annual Business Inquiry data. The modelling system was purpose-designed for UK universities and constructed as part of an overall impact study for Universities UK.

We analysed the higher education sector as a conventional industry, highlighting the main economic characteristics including sources of revenue, employment created, output generated and export earnings attracted. Modelled estimates are made of the economic activity generated in other sectors of the economy through the secondary or 'knock-on' multiplier effects of the expenditure of universities, their staff and that of the international students, including those from the rest of the EU, attracted to the UK.

Each region has been modelled separately, reflecting the particular characteristics of higher education institutions in that region in terms of scale and type of expenditure. The location quotient approach also seeks to reflect the particular economic characteristics of the region under analysis and assumes, for example, that where a region is specialised in a particular industry, local university requirements for products of that industry would be met by the local regional industry rather than through inter-regional trade. This will tend to maximise the estimate of impact of university expenditure accruing to the region rather than the rest of the UK.¹ In the absence of the availability of input-output tables for every region, a 'top-down' modelling approach of this type is the most cost-

effective and practical way to estimating the impact of universities in a region and one that has the benefits of studying all universities within the same overall methodological framework.

Detailed direct comparisons of the results of these analyses with the results of other studies of regional impact (for example, those using the economic impact modelling system issued by Universities UK in 2006) are not appropriate as a new and different input-output model has been developed for this study and there are also a number of definitional differences in the data sources used. A mathematical specification of the input-output model is provided in Appendix 1.

Introduction

This summary of the key economic features of higher education in the East Midlands in the academic year 2007/08 focuses primarily on universities as businesses, generating economic activity through their expenditure, which is an aspect of their contribution to the regional and national economy that can be readily measured.

The universities included are the nine institutions in the East Midlands for which data is provided by the Higher Education Statistics Agency (HESA). (They are listed in Appendix 2.) It should be noted that while these universities are the major suppliers of higher education in the region, courses at this level are also offered at a range of further education colleges and there can be significant numbers of higher education students registered at these colleges. Relevant data on these are not included in HESA publications. While this section will therefore capture the most of the regional economic impact of higher education as an activity, its overall impact in the East Midlands will be somewhat greater.

The primary focus of the study was the East Midlands universities as businesses and the impact of their business activity during the academic 2007/08. We also examined the impact of the off-campus expenditure of international students and students from the rest of the EU who were studying at universities in the East Midlands in that year. The expenditure of UK-based students was excluded, as arguably this money cannot be regarded as additional to the UK economy.

The study used a two-stage approach to the estimation of the economic impact of higher education in the East Midlands, as described in section 2.

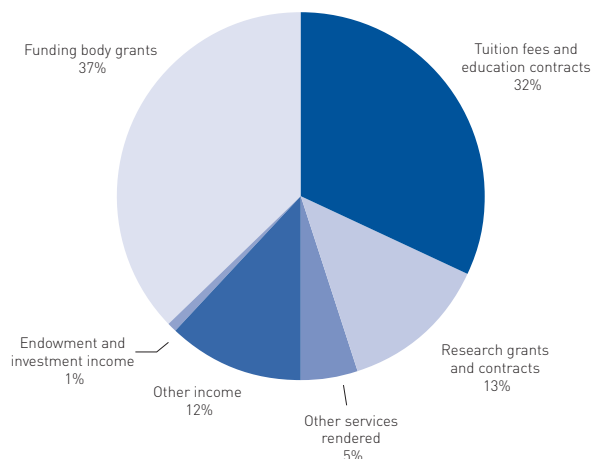
Key findings

Revenue

- Higher education in the East Midlands had revenue of £1.38 billion in 2007/08.

Chart 1

East Midlands: university revenue, 2007/08 (total £1.4 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

- Most of the income received was associated with teaching and research activity (income from funding council grants, tuition fees and research grants and contracts amounted to 82 per cent of the total). Other services (for example, residence and catering and conference income accounted for 17 per cent of revenue).
- The UK public sector was the largest single client, with 53 per cent of university revenue being core payments from the public sector. Core public sector revenue consists of funding council payments and tuition fees from public sector sources.
- 12 per cent of revenue was derived from other public sector bodies for other purposes, including research contracts, consultancy and other services.

- 35 per cent of university revenue was earned from the private sector and international clients.

Export earnings

- The universities' international revenue of nearly £181 million together with the estimated off-campus expenditure of EU and international students (£146 million)² represents a total of £327 million of export earnings.

Table 1

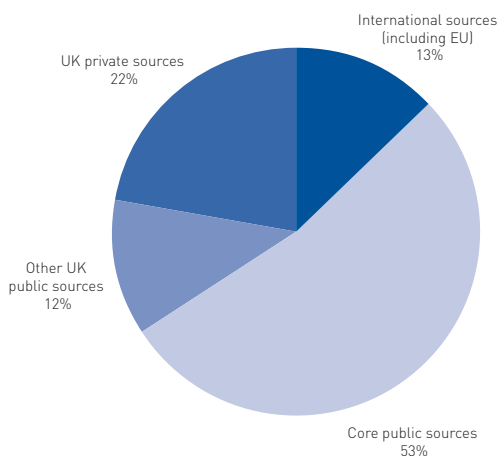
**East Midlands: university revenue sources
2007/08 (£ million)**

Type of revenue	Core public	Other public	UK private	International	Totals
Funding body grants	526	0	0	0	526
Tuition fees and education contracts	202	0	103	131	437
Research grants and contracts	0	104	49	24	177
Other services rendered	0	22	34	11	67
Other income	0	36	110	14	159
Endowment and investment income	0	0	14	0	14
Total	728	161	310	181	1380

Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Chart 2

**East Midlands: university revenue sources,
2007/08 (total £1.4 billion)**



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

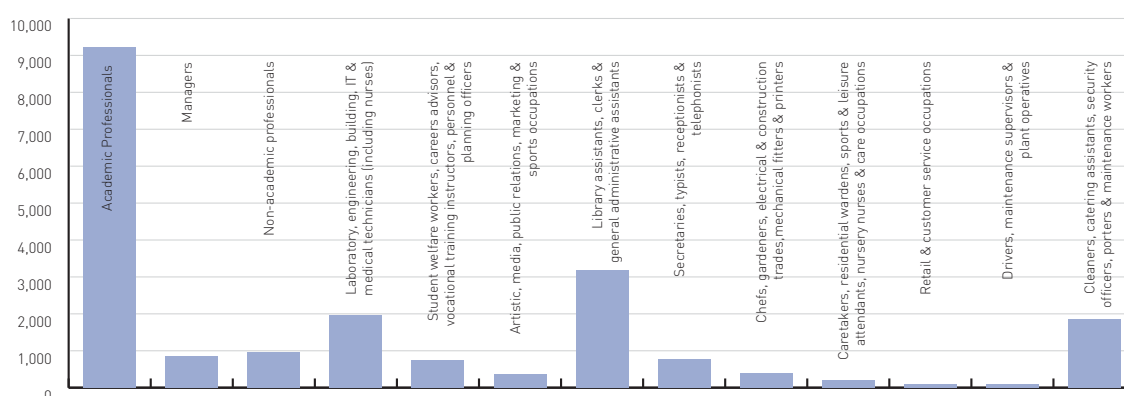
Employment

- The region's universities provided 20,687 full-time equivalent jobs across a wide range of occupations. The occupational profile of university employment in the East Midlands is shown in chart 3 and table 2.

- While the occupational profile of university employment is predictably highly specialised in academic professional posts, there is a spread of employment across a wide range of other occupations. For instance, the relatively high proportion of cleaners, security assistants and other support staff reflects the need to maintain substantial physical estates and buildings.

Chart 3

Occupational profile of universities in the East Midlands, 2007/08 (total 20,687 full-time equivalent jobs)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Table 2

Employment in universities in the East Midlands, 2007/08

Staff	Full time equivalent	Percentage of total
Academic professionals	9,221	44.6
Managers	849	4.1
Non-academic professionals	949	4.6
Laboratory, engineering, building, IT and medical technicians (including nurses)	1,957	9.5
Student welfare workers, careers advisors, vocational training instructors, personnel and planning officers	734	3.5
Artistic, media, public relations, marketing and sports occupations	375	1.8
Library assistants, clerks and general administrative assistants	3,173	15.3
Secretaries, typists, receptionists and telephonists	779	3.8
Chefs, gardeners, electrical and construction trades, mechanical fitters and printers	387	1.9
Caretakers, residential wardens, sports and leisure attendants, nursery nurses and care occupations	215	1.0
Retail and customer service occupations	107	0.5
Drivers, maintenance supervisors and plant operatives	97	0.5
Cleaners, catering assistants, security officers, porters and maintenance workers	1,844	8.9
Total	20,687	100.0

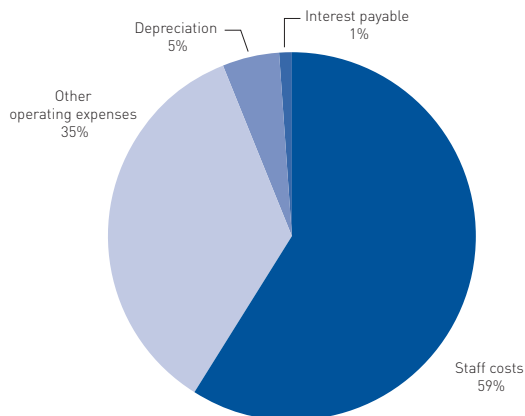
Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Expenditure

- The expenditure of universities, their staff and students in the East Midlands generated economic activity through secondary or 'knock-on' effects. The total impact was significant.

Chart 4

East Midlands: university expenditure, 2007/08 (total £1.36 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

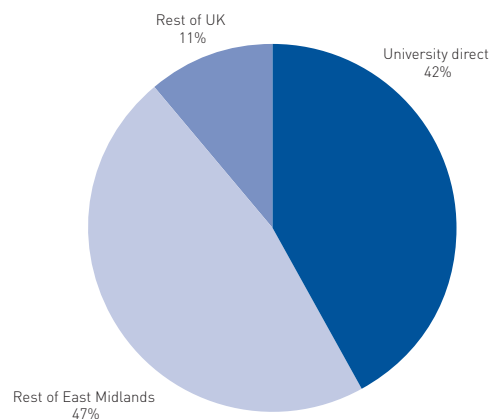
- In 2007/08, universities in the East Midlands spent just over £1.36 billion. University expenditure was very similar to university revenue in the study year, which is a characteristic of non-profit-making institutions.
- The universities attracted 21,475 students from outside the UK, who spent an estimated additional £146 million off-campus.

Output generated

- The universities' own output was £1.38 billion. Through 'knock-on' effects they generated an additional £1.93 billion in other industries throughout the UK, with most (£1.56 billion) in the East Midlands.

Chart 5

Output generated by universities in the East Midlands, 2007/08 (total £3.29 billion)

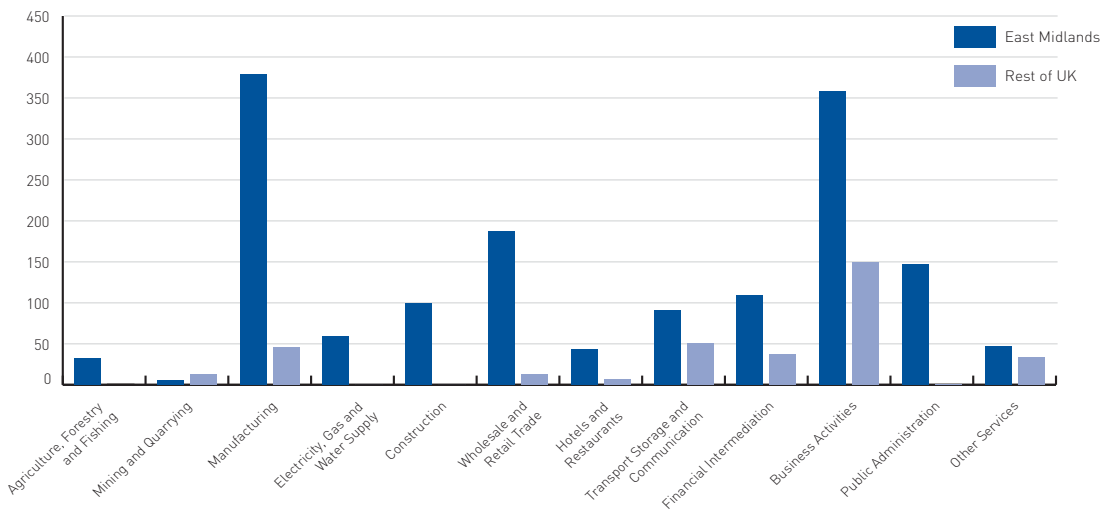


Source: Universities UK economic impact modelling system (2009).

- This gives a UK-wide output multiplier of 2.4 (with a regional output multiplier of 2.13). In other words, for every £1 million of university output in the East Midlands, a further £1.4 million is generated in other UK industries, of which £1.13 million is in industries located in the East Midlands region.

Chart 6

Secondary output generated by universities in the East Midlands, 2007/08 (total: £1.9 billion)



Source: Universities UK economic impact modelling system (2009).

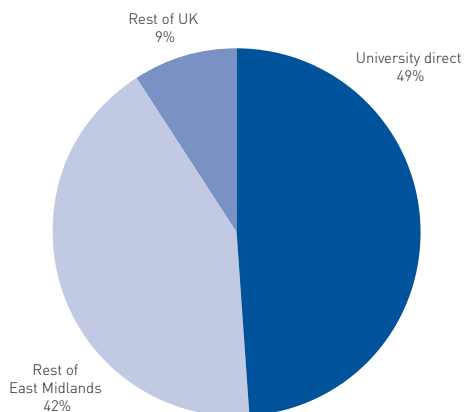
- Chart 6 shows the industries in which output was generated. There is an emphasis on manufacturing, wholesale and retail and business activities.

Employment

- In addition to providing 20,687 full-time equivalent jobs directly in higher education, institutional expenditure generated jobs in other parts of the economy.
- 21,391 full-time equivalent jobs were generated outside the universities, with most based in the East Midlands region.

Chart 7

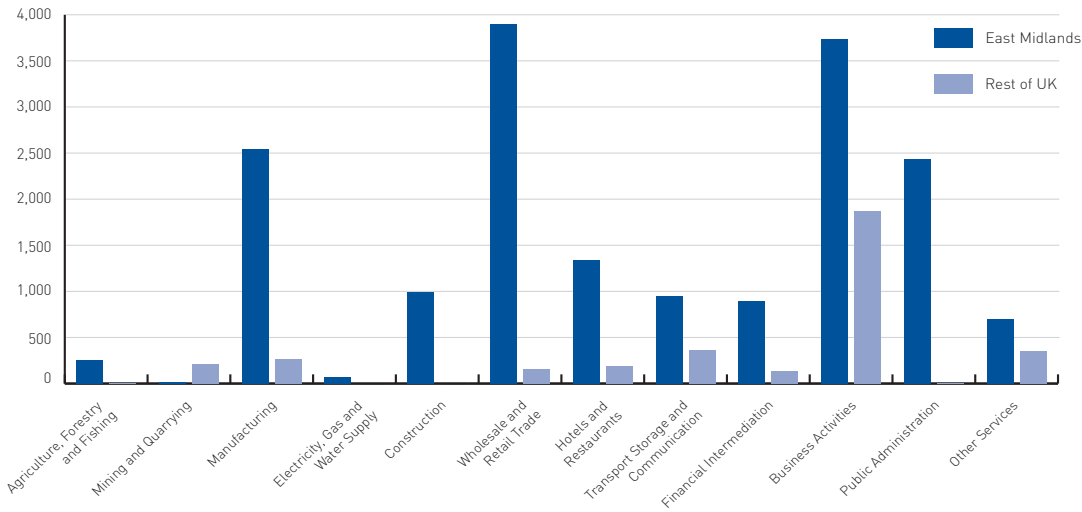
Total employment generated by university expenditure in the East Midlands, 2007/08 (total 42,078 full-time equivalent jobs)



Source: Universities UK economic impact modelling system (2009).

Chart 8

**Secondary employment generated by universities in the East Midlands, 2007/08
(total: 21,391 full-time equivalent jobs)**



Source: Universities UK economic impact modelling system (2009).

- The employment generated indicates an overall UK employment multiplier of 2.03 (1.86 within the East Midlands). In other words, for every 100 jobs within a university in the East Midlands, a further 103 jobs were generated in other industries in the UK, of which 86 were in industries located in the East Midlands region.
- Employment was generated in a wide range of industries, with particular concentration in manufacturing, wholesale and retail, as well as business activities and public administration.

International student expenditure

- East Midlands universities attracted 21,475 students from outside the UK to study in the region. In addition to any fees or other monies paid to the universities (for example, for halls of residence fees etc), these students spent an estimated £146 million off-campus.
- This off-campus expenditure generated £205 million of output and 1,930 full-time equivalent jobs throughout the UK.

Overall impact

- The overall economic impact of university expenditure in the East Midlands is shown in table 3.

Table 3

Overall impact of university and international student expenditure in the East Midlands, 2007/08

£ millions					
Category	Direct (£ millions)	Knock-on impact on the East Midlands	Total impact on the East Midlands (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
East Midlands universities	£1,379.60	£1,557.14	£2,936.73	£368.26	£3,304.99
Non-UK students	0	£166.84	£166.84	£38.26	£205.10
<i>Total combined impact of university activity</i>	<i>£1,379.60</i>	<i>£1,723.98</i>	<i>£3,103.57</i>	<i>£406.52</i>	<i>£3,510.10</i>
Full-time equivalent jobs					
Category	Direct (full-time equivalent jobs)	Total-knock on impact on the East Midlands	Total impact on East Midlands (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
East Midlands universities	20,687	17,840	38,527	3,551	42,078
Non-UK students	0	1,552	1,552	387	1,939
<i>Total combined impact of university activity</i>	<i>20,687</i>	<i>19,392</i>	<i>40,079</i>	<i>3,938</i>	<i>44,017</i>

Source: Universities UK economic impact modelling system (2009).

Introduction

This summary of the key economic features of higher education in the East of England in the academic year 2007/08 focuses on universities as businesses, generating economic activity through their expenditure, which is an aspect of their contribution to the regional and national economy that can be readily measured.

The universities included are the nine institutions in the East of England for which data is provided by the Higher Education Statistics Agency (HESA). (They are listed in Appendix 2.) Although these institutions are the major suppliers of higher education in the region, courses at this level are also offered at a range of further education colleges and there can be significant numbers of higher education students registered at such colleges. Relevant data on these are not included in HESA publications. While this report will therefore capture most of the regional economic impact of higher education as an activity, the overall impact in the East of England will be somewhat greater.

The primary focus of the study was the universities in the East of England as businesses and the impact generated by their business activity during the academic year 2007/08. We also examined the impact of the off-campus expenditure of international students and students from the rest of the EU who were studying at universities in the East of England in that year. The expenditure of UK-based students was excluded (as arguably this money cannot be regarded as additional to the UK economy). The study used a two-stage approach to the estimation of the economic impact of higher education in the East of England, as described in section 2.

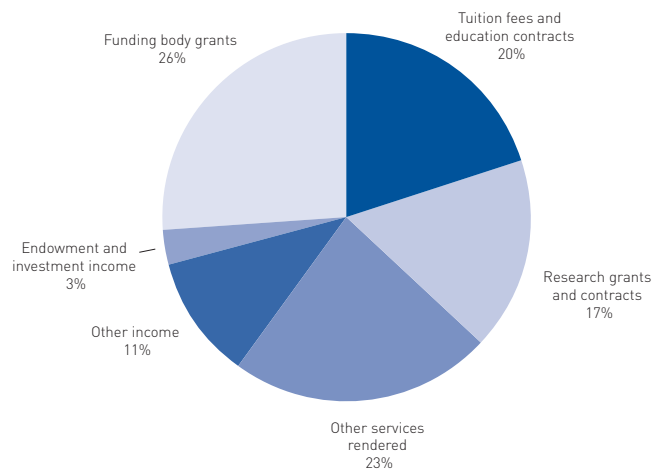
Key findings

Revenue

- Higher education in East of England had revenue of £1.98 billion in 2007/08.

Chart 9

East of England: university revenue, 2007/08 (total £1.98 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

- Most of the income received was associated with teaching and research activity (income from funding council grants, tuition fees and research grants and contracts amounted to 63 per cent of the total). Other services (for example, residence and catering and conference income) accounted for 34 per cent of revenue.
- The UK public sector was the largest single client, with 34 per cent of university revenue being core payments from the public sector. Core public sector revenue consists of funding council payments and tuition fees from public sector sources.
- 16 per cent of revenue was derived from other public sector bodies for other purposes, including research contracts, consultancy and other services.

- 51 per cent of university revenue was earned from the private sector and international clients.

Export earnings

- The universities' international revenue of £265 million together with the estimated off-campus expenditure of EU and international students (£149 million) represents a total of £414 million of export earnings.

Table 4

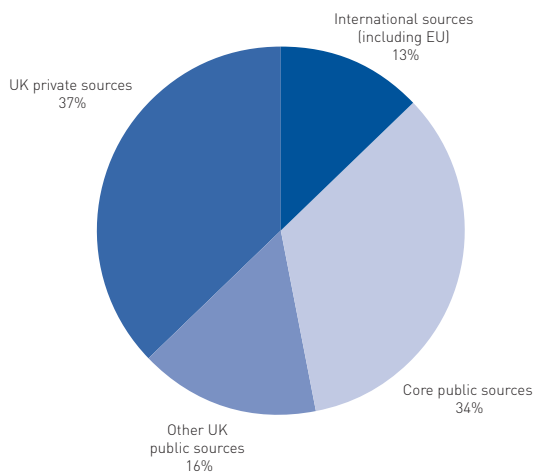
**East of England: university revenue sources
2007/08 (£ million)**

Type of revenue	Core public	Other public	UK private	International	Totals
Funding body grants	505	0	0	0	505
Tuition fees and education contracts	157	0	127	108	392
Research grants and contracts	0	181	112	46	339
Other services rendered	0	95	277	92	465
Other income	0	42	154	19	215
Endowment and investment income	0	0	67	0	67
Total	662	318	737	265	1,982

Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Chart 10

**East of England: university revenue sources,
2007/08 (total: £1.98 billion)**



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

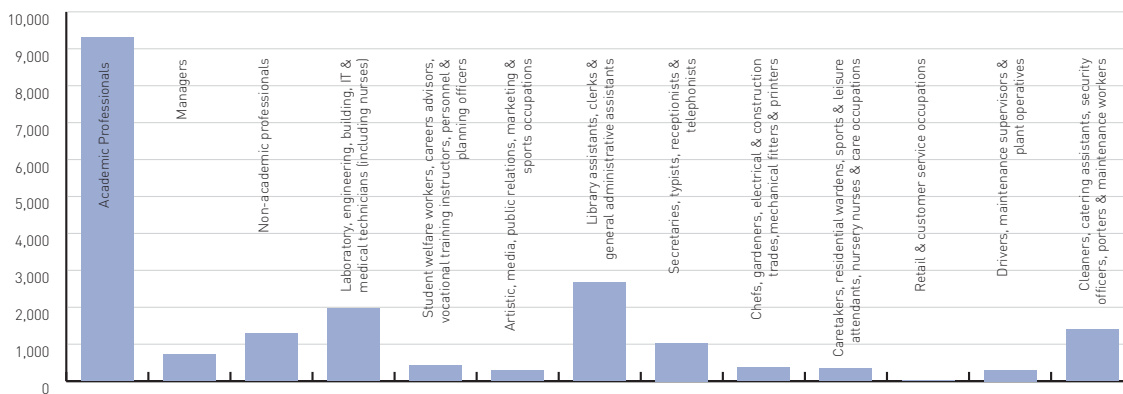
Employment

- The region's universities provided 20,130 full-time equivalent jobs across a wide range of occupations. The occupational profile of university employment is shown in chart 11 and table 5 below.

- While the occupational profile of university employment is predictably highly specialised in academic professional posts, there is spread of employment across a wide range of other occupations. Substantial physical estates and buildings, for instance, account for the relatively high proportion of cleaners, security assistants and other support staff needed to maintain them.

Chart 11

Occupational profile of universities in the East of England, 2007/08 (total 20,130 full-time-equivalent jobs)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Table 5

Employment in universities in the East of England, 2007/08

Staff	Full time equivalent	Percentage of total
Academic professionals	9,313	46.3
Managers	726	3.6
Non-academic professionals	1,285	6.4
Laboratory, engineering, building, IT and medical technicians (including nurses)	1,959	9.7
Student welfare workers, careers advisors, vocational training instructors, personnel and planning officers	426	2.1
Artistic, media, public relations, marketing and sports occupations	287	1.4
Library assistants, clerks and general administrative assistants	2,672	13.3
Secretaries, typists, receptionists and telephonists	1,033	5.1
Chefs, gardeners, electrical and construction trades, mechanical fitters and printers	376	1.9
Caretakers, residential wardens, sports and leisure attendants, nursery nurses and care occupations	341	1.7
Retail and customer service occupations	15	0.1
Drivers, maintenance supervisors and plant operatives	299	1.5
Cleaners, catering assistants, security officers, porters and maintenance workers	1,398	6.9
Total	20,130	100.0

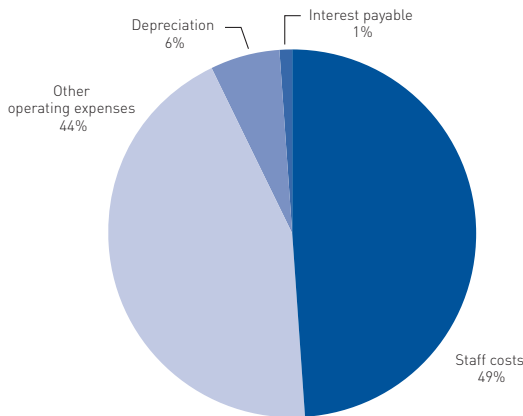
Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Expenditure

- The expenditure of universities in the East of England, their staff and students generated

Chart 12

East of England: university expenditure, 2007/08 (total £1.9 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

economic activity through secondary or 'knock-on' effects. The total impact was significant.

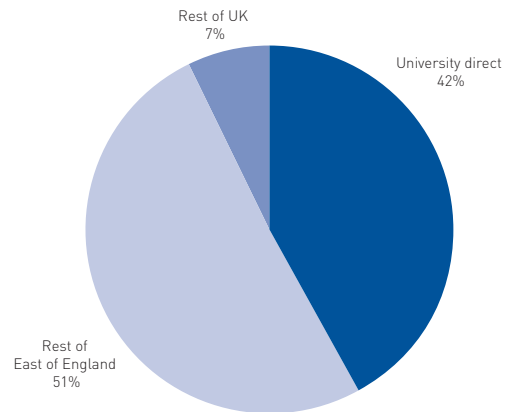
- In 2007/08, universities in the East of England spent just over £1.9 billion. University expenditure was very similar to university revenue in the study year which is a characteristic of non-profit-making institutions.
- The universities attracted 21,835 students from outside the UK, who spent an estimated additional £149 million off-campus.

Output generated

- The universities' own output was £1.98 billion. Through 'knock-on' effects they generated an additional £2.72 billion in other industries throughout the UK, with most of it (£2.38 billion) in the East of England region.

Chart 13

Output generated by universities in the East of England, 2007/08 (total £4.7 billion)

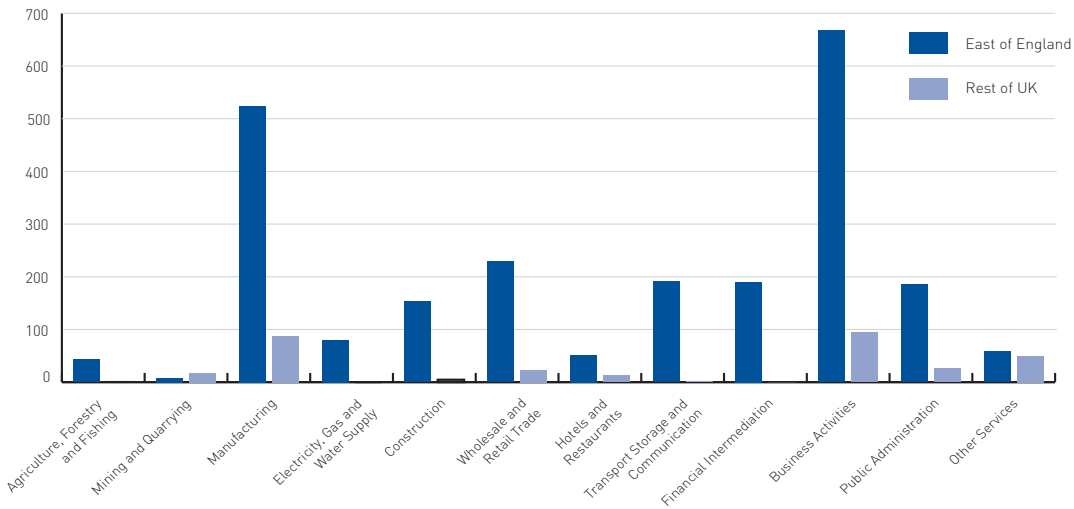


Source: Universities UK economic impact modelling system (2009).

- This gives a UK-wide output multiplier of 2.38 (with a regional output multiplier of 2.20). In other words, for every £1 million of university output in the East of England, a further £1.38 million is generated in other UK industries, of which £1.2 million is in industries located in the region.

Chart 14

Secondary output generated by universities in the East of England, 2007/08 (total £2.7 billion)



Source: Universities UK economic impact modelling system (2009).

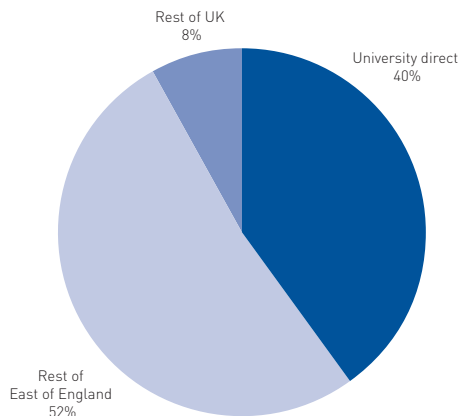
- Chart 14 shows the industries in which output was generated. There is an emphasis on manufacturing, wholesale and retail and business activities.

Employment

- In addition to providing 20,130 full-time equivalent jobs directly in higher education, institutional expenditure generated jobs in other parts of the economy.
- 30,119 full-time equivalent jobs were generated outside the universities, with most of them based in the East of England region.

Chart 15

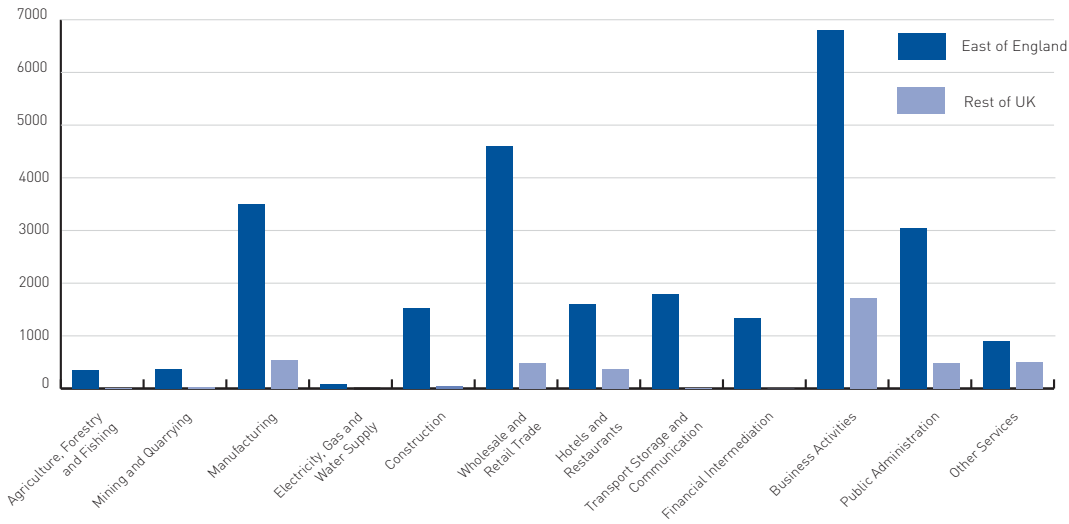
Total employment generated by university expenditure in the East of England, 2007/08 (total 50,249 full-time equivalent jobs)



Source: Universities UK economic impact modelling system (2009).

Chart 16

Secondary employment generated by universities in the East of England, 2007/08 (total 30,119 full-time equivalent jobs)



Source: Universities UK economic impact modelling system (2009).

- The employment generated indicates an overall UK employment multiplier of 2.5 (2.29 within the East of England): for every 100 jobs within a university in the East of England, a further 150 jobs were generated in other industries in the UK, of which 129 were in industries located in the region.
- Employment was generated in a wide range of industries, with particular concentration in manufacturing, wholesale and retail, as well as business activities and public administration.

International student expenditure

- Universities in the East of England attracted 21,835 students from outside the UK to study in the region. In addition to any fees or other monies paid to the universities (for example, for halls of residence fees etc), these students spent an estimated £149 million off-campus.
- This off-campus expenditure generated £209 million of output and 1,970 full-time equivalent jobs throughout the UK.

Overall impact

- The overall economic impact of university expenditure in the East of England is shown in table 6.

Table 6

Overall impact of university and international student expenditure in the East of England, 2007/08

£ millions					
Category	Direct (£ millions)	Knock-on impact on the East of England	Total impact on the East of England (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
East of England universities	£1,982.16	£2,380.41	£4,362.56	£344.42	£4,706.98
Non-UK students	0	189.43	189.43	£19.11	£208.54
<i>Total combined impact of university activity</i>	<i>£1,982.16</i>	<i>£2,569.84</i>	<i>£4,551.99</i>	<i>£363.53</i>	<i>£4,915.53</i>
Full-time-equivalent jobs					
Category	Direct (full-time equivalent jobs)	Total-knock on impact on the East of England	Total impact on the East of England (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
East of England universities	20,130	25,908	46,038	4,211	50,249
Non-UK students	0	1,753	1,753	219	1,971
<i>Total combined impact of university activity</i>	<i>20,130</i>	<i>27,661</i>	<i>47,791</i>	<i>4,430</i>	<i>52,221</i>

Source: Universities UK economic impact modelling system (2009).

Introduction

- This summary of the key economic features of higher education in London in the academic year 2007/08 focuses primarily on universities as businesses, generating economic activity through their expenditure, which is an aspect of their contribution to the regional and national economy that can be readily measured.
- The universities included are the 41 institutions in London for which data is provided by the Higher Education Statistics Agency (HESA). (They are listed in Appendix 2.) Although these institutions are the major suppliers of higher education in London, courses at this level are also offered at a range of further education colleges and there can be significant numbers of higher education students registered at such colleges. Relevant data on these are not included in HESA publications. While this report will therefore capture most of the economic impact of higher education as an activity, its overall impact in London will be somewhat greater.
- The primary focus of the study was the universities in London as businesses and the impact generated by their business activity during the academic year 2007/08. We also examined the impact of the off-campus expenditure of international students and students from the rest of the EU who were studying at universities in London in that year. The expenditure of UK-based students was excluded (as arguably this money cannot be regarded as additional to the UK economy). The study used a two-stage approach to the estimation of the economic impact of higher education in London, as described in section 2.

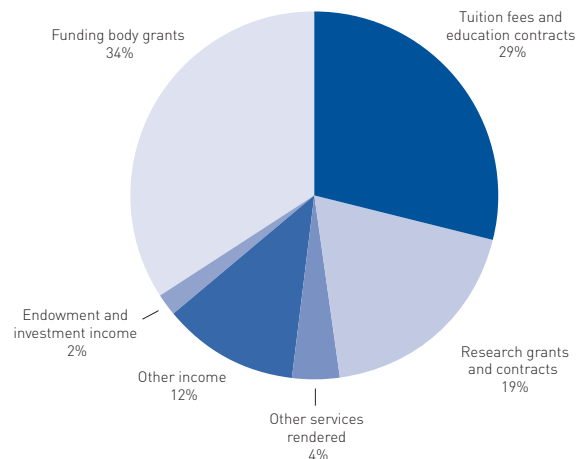
Key findings

Revenue

- Higher education in London had revenue of £4.85 billion in 2007/08.

Chart 17

London: university revenue, 2007/08 (total £4.85 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

- Most of the income received was associated with teaching and research activity (income from funding council grants, tuition fees and research grants and contracts amounted to 82 per cent of the total). Other services (for example, residence and catering and conference income) accounted for 16 per cent of revenue.
- The UK public sector was the largest single client, with 43 per cent of university revenue being core payments from the public sector. Core public sector revenue consists of funding council payments and tuition fees from public sector sources.
- 13 per cent of revenue was from other public sector bodies for other purposes, including research contracts, consultancy and other services.

- 44 per cent of university revenue was earned from the private sector and international clients.

Export earnings

- The universities' international revenue of nearly £786 million, together with the estimated off-campus expenditure of international students (£584 million) represents a total of £1,379 billion of export earnings.

Table 7

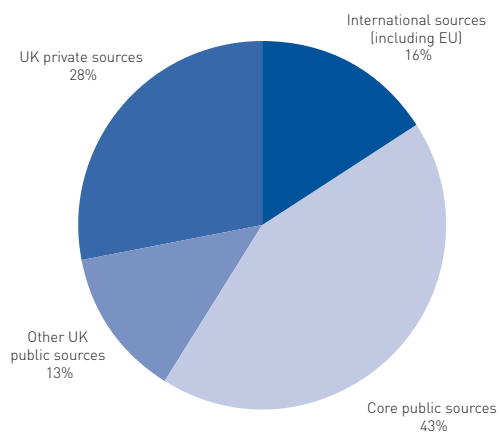
London: university revenue sources, 2007/08 (£ million)

Type of revenue	Core public	Other public	UK private	International	Totals
Funding body grants	1,654	0	0	0	1,654
Tuition fees and education contracts	429	0	425	567	1,421
Research grants and contracts	0	403	351	144	899
Other services rendered	0	78	80	27	186
Other income	0	163	377	48	588
Endowment and investment income	0	0	105	0	105
Total	2,083	645	1,338	786	4,853

Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Chart 18

London: university revenue sources, 2007/08 (total £4.85 billion)



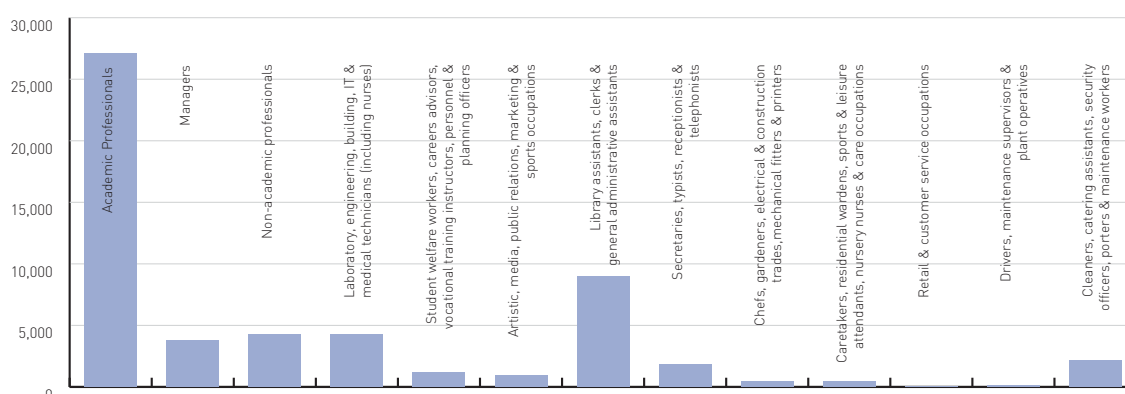
Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Employment

- Universities and colleges in London provided 55,578 full-time equivalent jobs across a wide range of occupations. The occupational profile of university employment is shown in chart 19 and table 8.
- While the occupational profile of university employment is predictably highly specialised in academic professional posts, there is a spread of employment across a wide range of other occupations. For instance, the relatively high proportion of cleaners, security assistants and other support staff reflects the need to maintain substantial physical estates and buildings.

Chart 19

Occupational profile of universities in London, 2007/08 (total 55,578 full-time-equivalent jobs)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Table 8

Employment in universities in London, 2007/08

Staff	Full time equivalent	Percentage of total
Academic professionals	27,101	48.8
Managers	3,768	6.8
Non-academic professionals	4,250	7.6
Laboratory, engineering, building, IT and medical technicians (including nurses)	4,247	7.6
Student welfare workers, careers advisors, vocational training instructors, personnel and planning officers	1,216	2.2
Artistic, media, public relations, marketing and sports occupations	915	1.6
Library assistants, clerks and general administrative assistants	9,011	16.2
Secretaries, typists, receptionists and telephonists	1,803	3.2
Chefs, gardeners, electrical and construction trades, mechanical fitters and printers	408	0.7
Caretakers, residential wardens, sports and leisure attendants, nursery nurses and care occupations	449	0.8
Retail and customer service occupations	78	0.1
Drivers, maintenance supervisors and plant operatives	145	0.3
Cleaners, catering assistants, security officers, porters and maintenance workers	2,187	3.9
Total	55,578	100.0

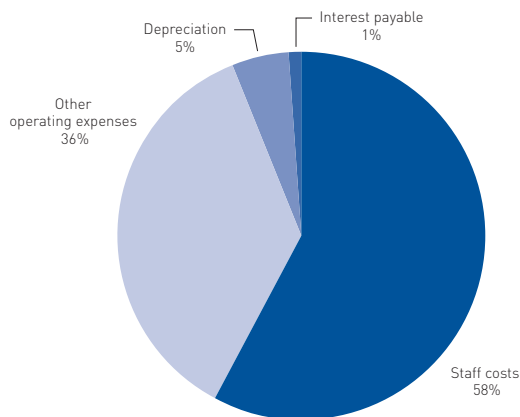
Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Expenditure

- The expenditure of universities in London, their staff and students, generated economic activity through secondary or 'knock-on' effects. The total impact was significant.

Chart 20

London: university expenditure, 2007/08 (£4.7 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

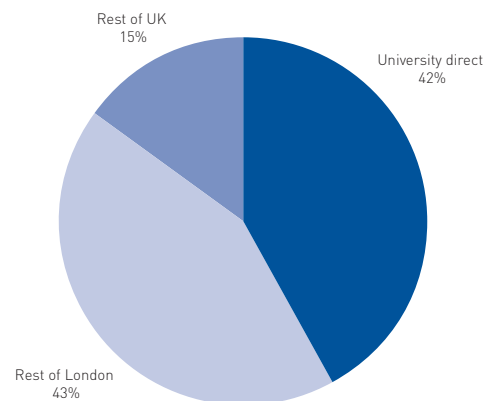
- In 2007/08, the London region's universities spent just over £4.7 billion. University expenditure was very similar to university revenue in the study year, which is a characteristic of non-profit-making institutions.
- The universities also attracted 85,815 students from outside the UK, who spent an estimated additional £584 million off-campus.

Output generated

- The universities' own output was £4.85 billion. Through 'knock-on' effects they generated an additional £6.7 billion in other industries throughout the UK, with most of it (£4.97 billion) in the London region.

Chart 21

Output generated by universities in London, 2007/08 (total £11.6 billion)

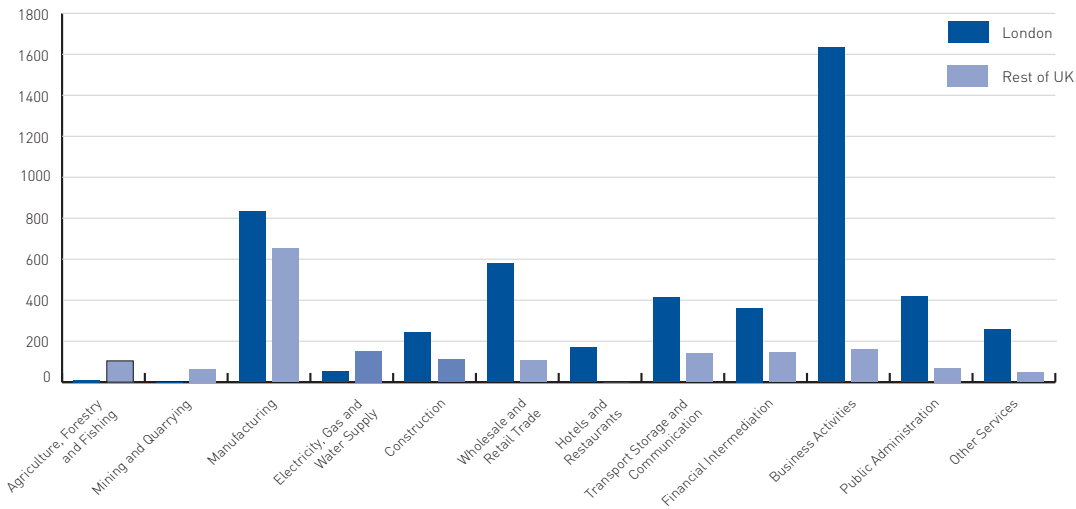


Source: Universities UK economic impact modelling system (2009).

- This gives a UK-wide output multiplier of 2.39 (with a regional output multiplier of 2.02). In other words, for every £1 million of university output, a further £1.39 million is generated in other UK industries, of which £1.02 million is in industries located in London.

Chart 22

Secondary output generated by universities in London, 2007/08 (total £6.7 billion)



Source: Universities UK economic impact modelling system (2009).

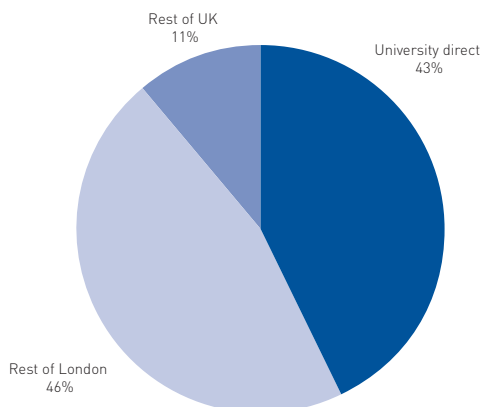
- Chart 22 shows the industries in which output was generated. There is an emphasis on manufacturing, wholesale and retail and business activities.

Employment

- In addition to providing 55,578 full-time equivalent jobs directly in higher education, university expenditure generated jobs in other parts of the economy.
- 74,641 full-time equivalent jobs were generated outside the universities, with most based in the London region.

Chart 23

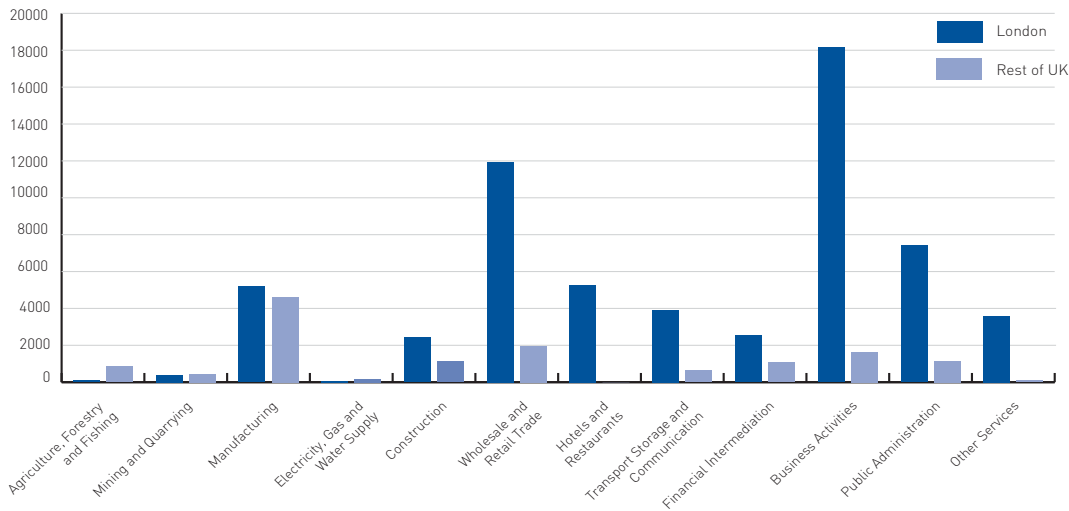
Total employment generated by university expenditure in London, 2007/08 (total 130,219 full-time equivalent jobs)



Source: Universities UK economic impact modelling system (2009).

Chart 24

**Secondary employment generated by universities in London, 2007/08
(total 74,641 full-time equivalent jobs)**



Source: Universities UK economic impact modelling system (2009).

- The employment generated indicates an overall UK employment multiplier of 2.34 (2.10 within London). In other words, for every 100 jobs within a university, a further 134 jobs were generated in other industries in the UK, of which 110 were in industries located in the London region.
- Employment was generated in a wide range of industries, with particular concentration in manufacturing, wholesale and retail, as well as business activities and public administration.

International student expenditure

- Universities in London attracted 85,815 students from outside the UK to study in the region. In addition to any fees or other monies paid to the universities (for example, for halls of residence fees etc), these students spent an estimated £584 million off-campus.
- This off-campus expenditure generated £820 million of output and 7,748 full-time equivalent jobs throughout the UK.

Overall impact

- The overall economic impact of universities in London expenditure is shown in table 9.

Table 9

Overall impact of university and international student expenditure in London, 2007/08

£ millions					
Category	Direct (£ millions)	Knock-on impact on London	Total impact on London (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
London universities	£4,852.52	£4,972.88	£9,825.41	£1,750.30	£11,575.71
Non-UK students	0	£591.00	£591.00	£228.60	£819.60
<i>Total combined impact of university activity</i>	<i>£4,852.52</i>	<i>£5,563.88</i>	<i>£10,416.40</i>	<i>£1,978.90</i>	<i>£12,395.31</i>
Full-time-equivalent jobs					
Category	Direct (full-time-equivalent jobs)	Total-knock on impact on London	Total impact on London (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
London universities	55,578	60,901	116,479	13,740	130,219
Non-UK students	0	5,923	5,923	1,825	7,748
<i>Total combined impact of university activity</i>	<i>55,578</i>	<i>66,824</i>	<i>122,402</i>	<i>155,65</i>	<i>137,967</i>

Source: Universities UK economic impact modelling system (2009).

Introduction

This summary of the key economic features of high education in the North East in the academic year 2007/08 focuses primarily on universities as businesses, generating economic activity through their expenditure, which is an aspect of their contribution to the regional and national economy that can be readily measured.

The universities included are the five institutions in the North East for which data is provided by the Higher Education Statistics Agency (HESA). (They are listed in Appendix 2.) It should be noted that while these universities are the major suppliers of higher education in the region, courses at this level are also offered at a number of further education colleges and there can be significant numbers of higher education students registered at these colleges. Relevant data on these are not included in HESA publications. While this report will therefore capture most of the economic impact of higher education as an activity, its overall impact in the North East will be somewhat greater.

The primary focus of the study was the universities in the North East as businesses and the impact generated by their activity during the academic and financial year 2007/08. We also examined the impact of the off-campus expenditure of international students and students from the rest of the EU who were studying at universities in North East in that year. The expenditure of UK-based students was excluded (as arguably this money cannot be regarded as additional to the UK economy). The study used a two-stage approach to the estimation of the economic impact of North East higher education, as described in section 2.

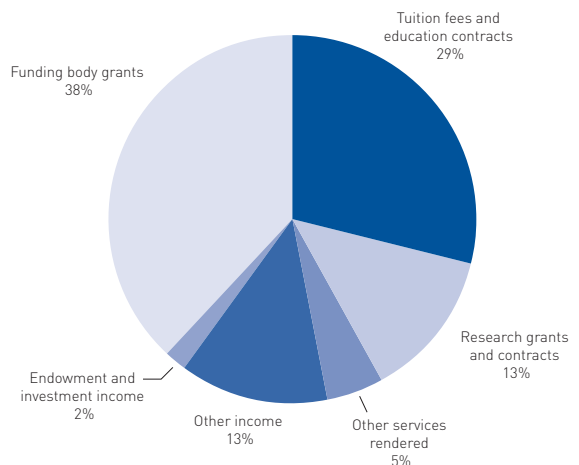
Key findings

Revenue

- Higher education in the North East had revenue of £967 million in 2007/08.

Chart 25

North East: university revenue, 2007/08 (total £967 million)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

- Most of the income received was associated with teaching and research activity (income from funding council grants, tuition fees and research grants and contracts amounted to 80 per cent of the total). Other services (for example, residence and catering and conference income) accounted for 18 per cent of revenue.
- The UK public sector was the largest single client, with 52 per cent of university revenue being core payments from the public sector. Core public sector revenue consists of funding council payments and tuition fees from public sector sources.
- 13 per cent of revenue was derived from other public sector bodies for other purposes, including research contracts, consultancy and other services.

- 35 per cent of university revenue was earned from the private sector and international clients.

Export earnings

- The universities' international revenue of nearly £123 million together with the estimated off-campus expenditure of international students (£111 million) represents a total of £234 million of export earnings.

Table 10

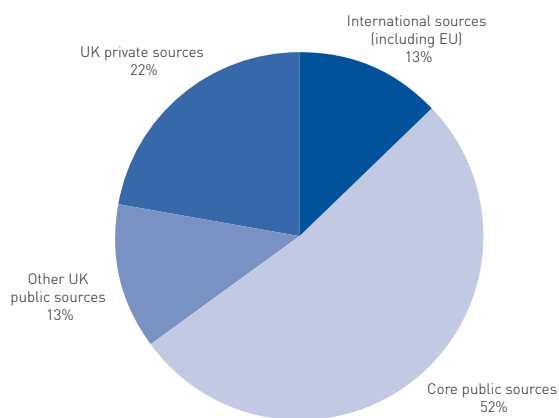
North East: university revenue sources, 2007/08 (£ million)

Type of revenue	Core public	Other public	UK private	International	Totals
Funding body grants	368	0	0	0	368
Tuition fees and education contracts	133	0	64	87	284
Research grants and contracts	0	77	32	18	127
Other services rendered	0	20	21	7	48
Other income	0	29	85	11	125
Endowment and investment income	0	0	15	0	15
Total	501	127	216	123	967

Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Chart 26

North East: university revenue sources, 2007/08 (total £967 million)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

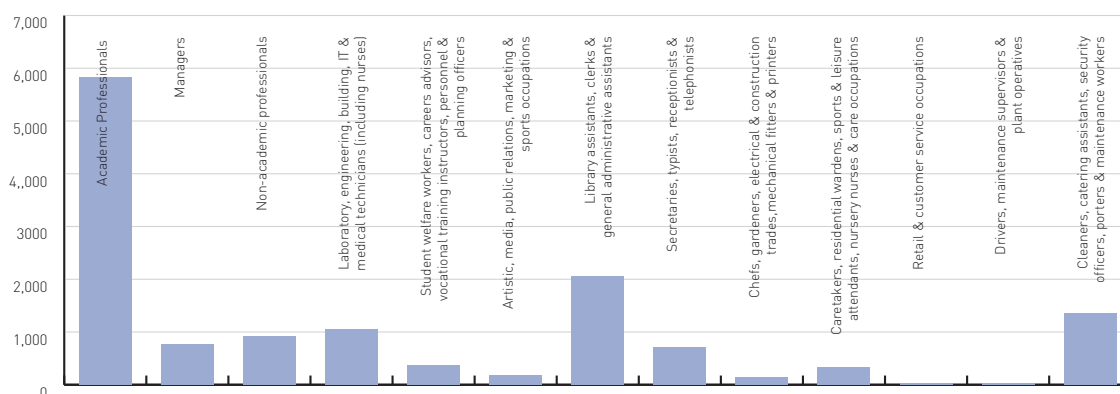
Employment

- Universities in the North East provided 13,715 full-time equivalent jobs across a wide range of occupations. The occupational profile of university employment is shown in chart 27 and table 11 below:

- While the occupational profile of university employment is predictably specialised in academic professional posts, it is important to note the spread of employment across a wide range of other occupations. For instance, the relatively high proportion of cleaners, security assistants and other support staff reflects the need to maintain substantial physical estates and buildings.

Chart 27

Occupational profile of universities in the North East, 2007/08 (total 13,715 full-time-equivalent jobs)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Table 11

Employment in universities in the North East, 2007/08

Staff	Full time equivalent	Percentage of total
Academic professionals	5,827	42.5
Managers	764	5.6
Non-academic professionals	912	6.6
Laboratory, engineering, building, IT and medical technicians (including nurses)	1,050	7.7
Student welfare workers, careers advisors, vocational training instructors, personnel and planning officers	361	2.6
Artistic, media, public relations, marketing and sports occupations	184	1.3
Library assistants, clerks and general administrative assistants	2,050	14.9
Secretaries, typists, receptionists and telephonists	709	5.2
Chefs, gardeners, electrical and construction trades, mechanical fitters and printers	138	1.0
Caretakers, residential wardens, sports and leisure attendants, nursery nurses and care occupations	325	2.4
Retail and customer service occupations	23	0.2
Drivers, maintenance supervisors and plant operatives	22	0.2
Cleaners, catering assistants, security officers, porters and maintenance workers	1,350	9.8
Total	13,715	100.0

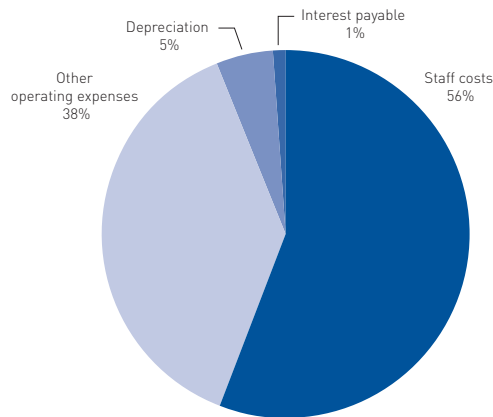
Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Expenditure

- The expenditure of universities in the North East, their staff and students, generated economic activity through secondary or 'knock-on' effects. The total impact was significant.

Chart 28

Expenditure of universities in the North East, 2007/08 (total £928 million)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

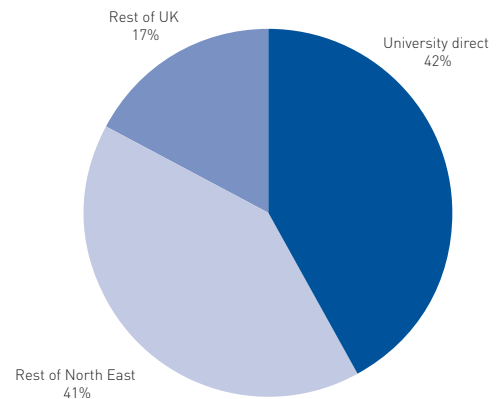
- In 2007/08 universities in the North East spent just under £928 million. University expenditure was very similar to university revenue in the study year, which is a characteristic of non-profit-making institutions.
- They also attracted 16,310 students from outside the UK and these international students spent an estimated additional £111 million off-campus.

Output generated

- The universities' own output was £967 million. Through 'knock-on' effects universities and colleges in the North East generated an additional £1.32 billion in other industries throughout the UK, with most of it (£939 million) in the region.

Chart 29

Output generated by universities in the North East, 2007/08 (total £2.3 billion)

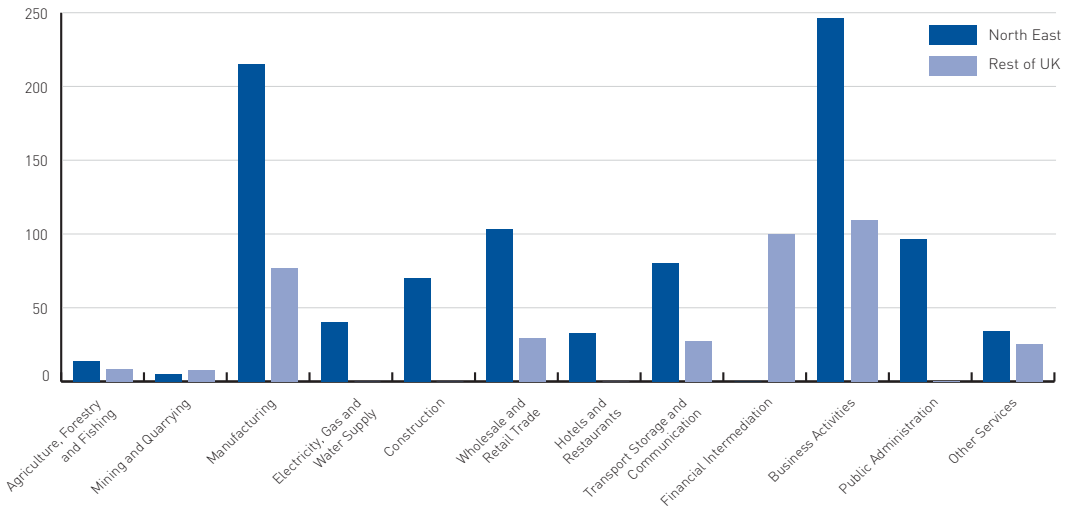


Source: Universities UK economic impact modelling system (2009).

- This gives a UK-wide output multiplier of 2.37 (with a regional output multiplier of 1.97). In other words, for every £1 million of university output in the North East, a further £1.37 million is generated in other UK industries, of which £0.97 million is in industries located in the region.

Chart 30

Secondary output generated by universities in the North East, 2007/08 (total £1.3 billion)



Source: Universities UK economic impact modelling system (2009).

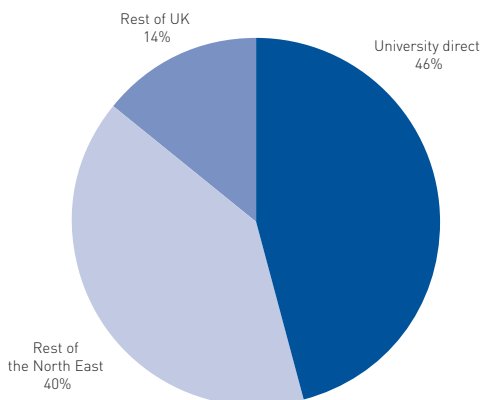
- Chart 30 shows the industries in which output was generated. There is an emphasis on manufacturing, wholesale and retail and business activities.

Employment

- In addition to providing 13,715 full-time equivalent jobs directly in higher education, university expenditure generated jobs in other parts of the economy.
- 14,683 full-time equivalent jobs were generated outside the universities, with most in the North East region.

Chart 31

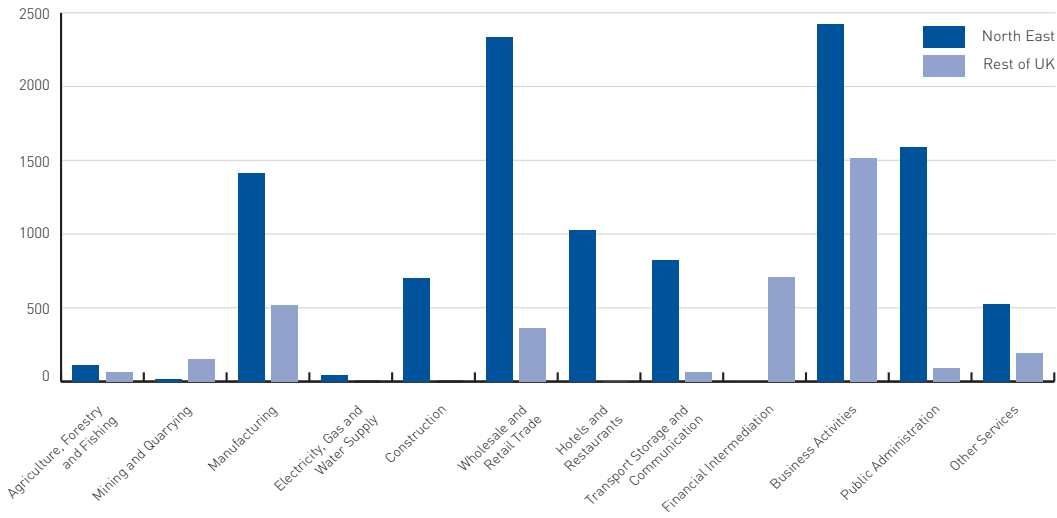
Total employment generated university expenditure in the North East, 2007/08 (total 28,398 full-time equivalent jobs)



Source: Universities UK economic impact modelling system (2009).

Chart 32

Secondary employment generated by universities in the North East, 2007/08 (total 14,683 full-time equivalent jobs)



Source: Universities UK economic impact modelling system (2009).

- The employment generated indicates an overall UK employment multiplier of 2.07 (1.80 within the North East). In other words, for every 100 jobs within a university in the North East, a further 107 jobs were generated in other industries in the UK, of which 80 were in industries located in the North East region.
- Employment was generated in a wide range of industries, with particular concentration in manufacturing, wholesale and retail, as well as business activities and public administration.

International student expenditure

- Universities in the North East attracted 16,310 students from outside the UK to study in the region. In addition to any fees or other monies paid to the universities (for example, for halls of residence fees etc), these students spent an estimated £111 million off-campus.
- This off-campus expenditure generated £156 million of output and 1,473 full-time equivalent jobs throughout the UK.

Overall impact

- The overall economic impact of universities in the North East is shown in table 12.

Table 12

Overall impact of university and international student expenditure in North East, 2007/08

£ millions					
Category	Direct (£ millions)	Knock-on impact on the North East	Total impact on the North East (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
North East universities	£966.83	£939.05	£1905.88	£384.22	£2,290.10
Non-UK students	0	£113.77	£113.77	£42.00	£155.77
<i>Total combined impact of university activity</i>	<i>£966.83</i>	<i>£1,052.82</i>	<i>£2,019.66</i>	<i>£426.22</i>	<i>£2,445.87</i>
Full-time-equivalent jobs					
Category	Direct (full-time-equivalent jobs)	Total-knock on impact on the North East	Total impact on the North East (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
North East universities	13,715	11,011	24,726	3,673	28,398
Non-UK students	0	1,054	1,054	419	1,473
<i>Total combined impact of university activity</i>	<i>13,715</i>	<i>12,064</i>	<i>25,779</i>	<i>4,092</i>	<i>29,871</i>

Source: Universities UK economic impact modelling system (2009).

Introduction

This summary of the key economic features of higher education in the North West in the academic year 2007/08 focuses primarily on universities as businesses, generating economic activity through their expenditure, which is an aspect of their contribution to the regional and national economy that can be readily measured.

The universities included are the 14 institutions in the North West for which data is provided by the Higher Education Statistics Agency (HESA). (They are listed in Appendix 2.) Although these universities are the major suppliers of higher education in the region, courses at this level are also offered by a range of further education colleges and there can be significant numbers of higher education students registered at these colleges. Relevant data on these are not included in HESA publications. While this report therefore captures most of the economic impact of higher education as an activity, its overall impact in the North West will be somewhat greater.

The primary focus of the study was universities in the North West as businesses and the impact generated by their activity during the academic 2007/08. We also examined the impact of the off-campus expenditure of international students and students from the rest of the EU who were studying at universities in the North West in that year. The expenditure of UK-based students was excluded (as arguably this money cannot be regarded as additional to the UK economy).

The study used a two-stage approach to the estimation of the economic impact of North West higher education, as described in section 2.

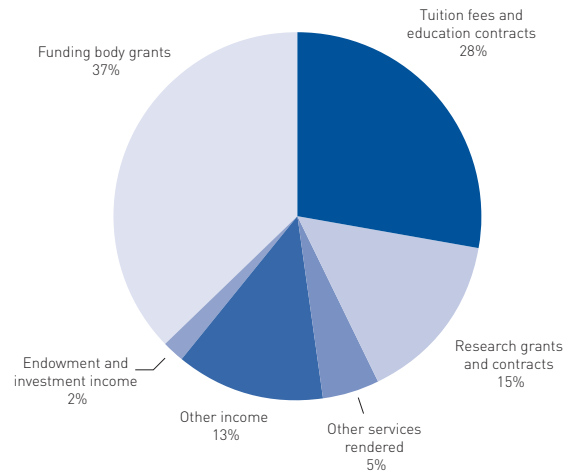
Key findings

Revenue

- Higher education in North West had revenue of £2.26 billion in 2007/08

Chart 33

North West: university revenue, 2007/08 (total £2.3 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

- Most of the income received was associated with teaching and research activity (income from funding council grants, tuition fees and research grants and contracts amounted to 80 per cent of the total). Other services (for example, residence and catering and conference income) accounted for 18 per cent of revenue.
- The UK public sector was the largest single client, with 50 per cent of university revenue being core payments from the public sector. Core public sector revenue is made up of funding council payments and tuition fees from public sector sources.
- 14 per cent of revenue was derived from other public sector bodies for other purposes, including research contracts, consultancy and other services.

- 36 per cent of university revenue was earned from the private sector and international clients.

Export earnings

- The international revenue of universities in the North West of £240 million, together with the estimated off-campus expenditure of international students (£205 million), represents a total of £445 million of export earnings.

Table 13

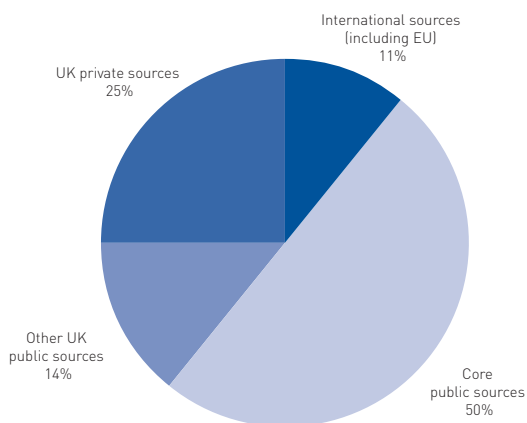
North West: university revenue sources, 2007/08 (£ million)

Type of revenue	Core public	Other public	UK private	International	Totals
Funding body grants	838	0	0	0	838
Tuition fees and education contracts	300	0	178	151	630
Research grants and contracts	0	194	87	48	329
Other services rendered	0	51	43	14	109
Other income	0	71	200	26	297
Endowment and investment income	0	0	57	0	57
Total	1,138	316	566	240	2,259

Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Chart 34

North West: university revenue sources, 2007/08 (total £2.3 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

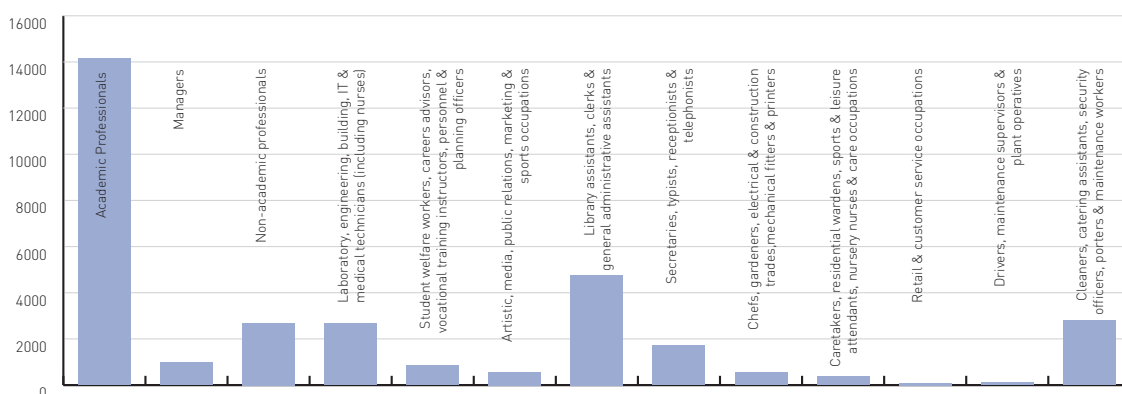
Employment

- The region's universities provided 32,308 full-time equivalent jobs across a wide range of occupations. The occupational profile of university employment is shown in chart 35 and table 14 below:

- While the occupational profile of university employment is predictably highly specialised in academic professional posts, it is important to note the spread of employment across a wide range of other occupations. For instance, the relatively high proportion of cleaners, security assistants and other support staff reflects the need to maintain substantial physical estates and buildings.

Chart 35

Occupational profile of universities in the North West, 2007/08 (total 32,308 full-time equivalent jobs)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Table 14

Employment in universities in the North West, 2007/08

Staff	Full time equivalent	Percentage of total
Academic professionals	14,136	43.8
Managers	968	3.0
Non-academic professionals	2,688	8.3
Laboratory, engineering, building, IT and medical technicians (including nurses)	2,685	8.3
Student welfare workers, careers advisors, vocational training instructors, personnel and planning officers	855	2.6
Artistic, media, public relations, marketing and sports occupations	566	1.8
Library assistants, clerks and general administrative assistants	4,767	14.8
Secretaries, typists, receptionists and telephonists	1,724	5.3
Chefs, gardeners, electrical and construction trades, mechanical fitters and printers	541	1.7
Caretakers, residential wardens, sports and leisure attendants, nursery nurses and care occupations	375	1.2
Retail and customer service occupations	91	0.3
Drivers, maintenance supervisors and plant operatives	124	0.4
Cleaners, catering assistants, security officers, porters and maintenance workers	2,788	8.6
Total	32,308	100.0

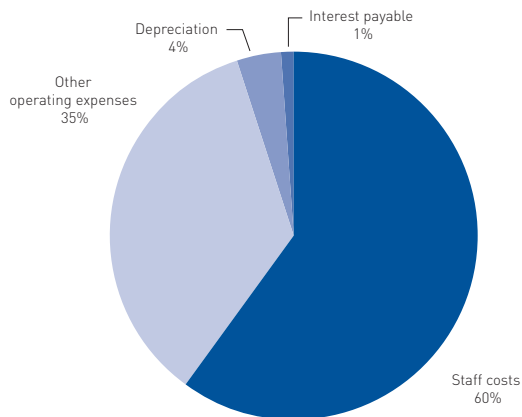
Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Expenditure

- The expenditure of universities in the North West, their staff and students, generated economic activity through secondary or 'knock-on' effects. The total impact was significant.

Chart 36

Expenditure of universities in the North West, 2007/08 (total £2.2 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

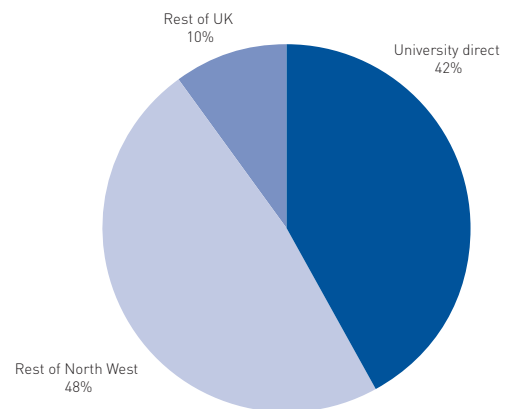
- In 2007/08, universities in the North West spent just over £2.2 billion. University expenditure was very similar to university revenue in the study year, which is a characteristic of non-profit-making institutions.
- Universities also attracted 30,195 students from outside the UK, who spent an estimated additional £205 million off-campus.

Output generated

- The universities' own output was £2.26 billion. Through 'knock-on' effects the universities and colleges in the North West generated an additional £3.17 billion in other industries throughout the UK, with most of it (£2.63 billion) in the region.

Chart 37

Output generated by universities in the North West, 2007/08 (total £5.4 billion)

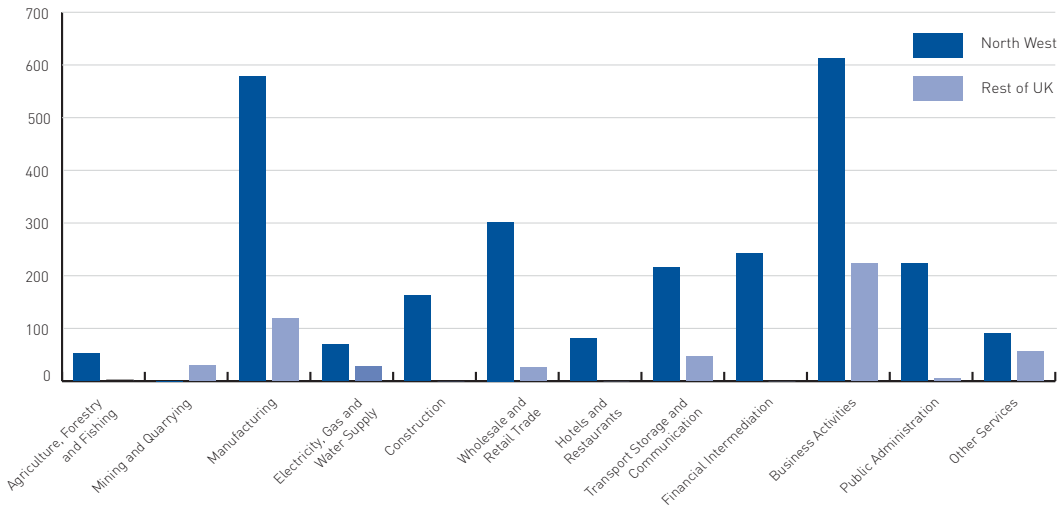


Source: Universities UK economic impact modelling system (2009).

- This gives a UK-wide output multiplier of 2.4 (with a regional output multiplier of 2.16). In other words, for every £1 million of university output, a further £1.4 million is generated in other UK industries, of which £1.16 million is in industries located in the region.

Chart 38

Secondary output generated by universities in the North West, 2007/08 (total £3.2 billion)



Source: Universities UK economic impact modelling system (2009).

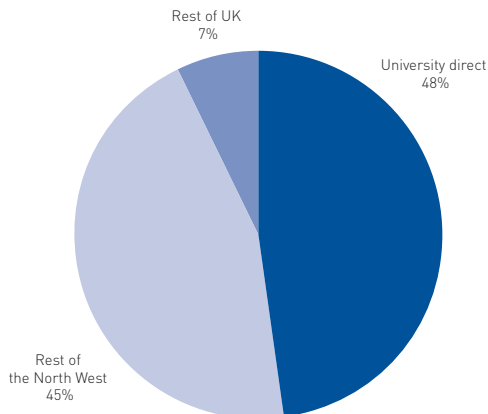
- Chart 38 shows the industries in which output was generated. There is an emphasis on manufacturing, wholesale and retail and business activities.

Employment

- In addition to providing 32,308 full-time equivalent jobs directly in higher education, institutional expenditure generated jobs in other parts of the economy.
- 35,185 full-time equivalent jobs were generated outside the universities, with most of them based in the North West region.

Chart 39

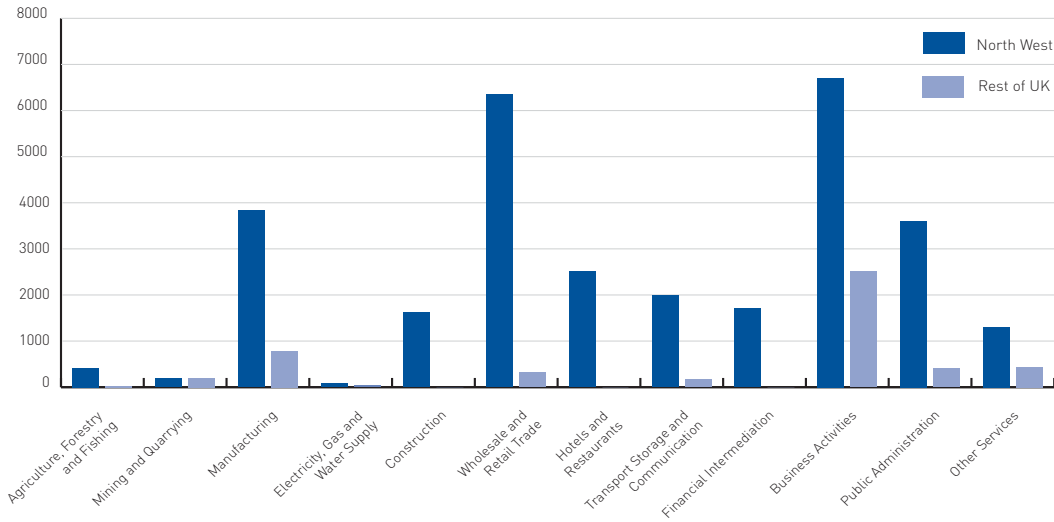
Total employment generated by university expenditure in the North West, 2007/08 (total 67,493 full-time equivalent jobs)



Source: Universities UK economic impact modelling system (2009).

Chart 40

Secondary employment generated by universities in the North West, 2007/08 (total 35,185 full-time equivalent jobs)



Source: Universities UK economic impact modelling system (2009).

- The employment generated indicates an overall UK employment multiplier of 2.09 (1.94 within the North West). In other words, for every 100 jobs within a university in the North West, a further 109 jobs were generated in other industries in the UK, of which 94 were in industries located in the region.
- Employment was generated in a wide range of industries, with particular concentration in manufacturing, wholesale and retail, as well as business activities and public administration.

International student expenditure

- Universities in the North West attracted 30,195 students from outside the UK to study in the region. In addition to any fees or other monies paid to the universities (for example, for halls of residence fees etc), these students spent an estimated £205 million off-campus.
- This off-campus expenditure generated £288 million of output and 2,726 full-time equivalent jobs throughout the UK.

Overall impact

- The overall economic impact of the expenditure of universities in the North West is shown in table 15.

Table 15

Overall impact of university and international student expenditure in North West, 2007/08

£ millions					
Category	Direct (£ millions)	Knock-on impact on the North West	Total impact on the North West (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
North West universities	£2,259.48	£2,629.82	£4,889.3	£536.92	£5,426.22
Non-UK students	0	£232.02	£232.02	£56.37	£288.39
<i>Total combined impact of university activity</i>	<i>£2,259.48</i>	<i>£2,861.83</i>	<i>5,121.31</i>	<i>£593.30</i>	<i>£5,714.61</i>
Full-time-equivalent jobs					
Category	Direct (full-time-equivalent jobs)	Total-knock on impact on the North West	Total impact on the North West (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
North West universities	32,308	30,325	62,633	4,861	67,493
Non-UK students	0	2,250	2,250	477	2,726
<i>Total combined impact of university activity</i>	<i>32,308</i>	<i>32,575</i>	<i>64,883</i>	<i>5,337</i>	<i>70,220</i>

Source: Universities UK economic impact modelling system (2009).

Introduction

This summary of the key economic features of higher education in the South East in the academic year 2007/08 focuses primarily on universities as businesses, generating economic activity through their expenditure, which is an aspect of their contribution to the regional and national economy that can be readily measured.

The universities included are the 18 institutions in the South East for which data is provided by the Higher Education Statistics Agency (HESA). (They are listed in Appendix 2.) It should be noted that while these universities are the major suppliers of higher education in the South East, higher education courses are also offered at a range of further education colleges and there can be significant numbers of higher education students registered at such colleges. Relevant data on these are not included in HESA publications. While this report will therefore capture most of the economic impact of higher education as an activity, its overall impact in the South East will be somewhat greater.

The primary focus of the study was the universities in the South East as businesses and the impact generated by their activity during the academic year 2007/08. It also examined the impact of the off-campus expenditure of international students and students from the rest of the EU who were studying at universities in the South East in that year. The expenditure of UK-based students was excluded (as arguably this money cannot be regarded as additional to the UK economy).

The study used a two-stage approach to the estimation of the economic impact of higher education in the South East, as described in section 2.

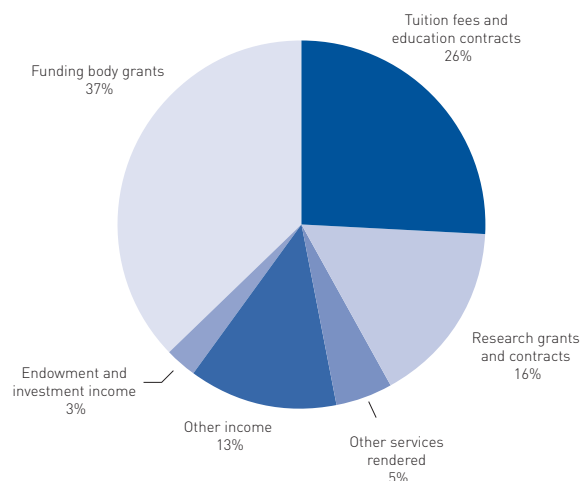
Key findings

Revenue

- Higher education in the South East had revenue of £3.1 billion in 2007/08.

Chart 41

South East: university revenue, 2007/08 (total £3.1 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

- Most of the income received was associated with teaching and research activity (income from funding council grants, tuition fees and research grants and contracts amounted to 79 per cent of the total). Other services (for example, residence and catering and conference income) accounted for 18 per cent of revenue.
- The UK public sector was the largest single client, with 47 per cent of university revenue being core payments from the public sector. Core public sector revenue consists of funding council payments and tuition fees from public sector sources.
- 11 per cent of revenue was derived from other public sector bodies for other purposes, including for research contracts, consultancy and other services.

- 42 per cent of university revenue was earned from the private sector and international clients.

Export earnings

- Universities' international revenue of nearly £381 million together with the estimated off-campus expenditure of international students (£261 million) represents a total of £642 million of export earnings.

Table 16

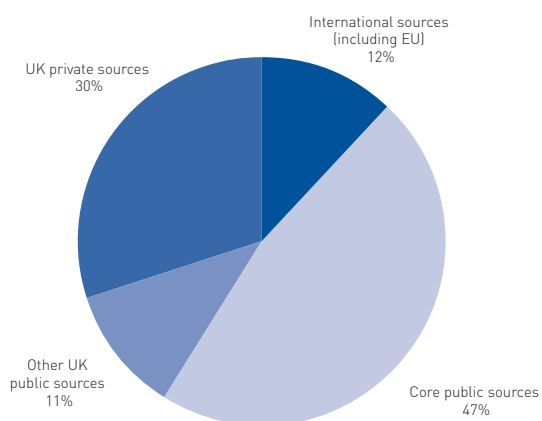
South East: university revenue sources, 2007/08 (£ million)

Type of revenue	Core public	Other public	UK private	International	Totals
Funding body grants	1,139	0	0	0	1,139
Tuition fees and education contracts	324	0	291	211	826
Research grants and contracts	0	258	156	100	514
Other services rendered	0	19	95	32	146
Other income	0	67	306	39	412
Endowment and investment income	0	0	81	0	81
Total	1,463	343	930	381	3,117

Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Chart 42

South East: university revenue sources, 2007/08 (total £3.1 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

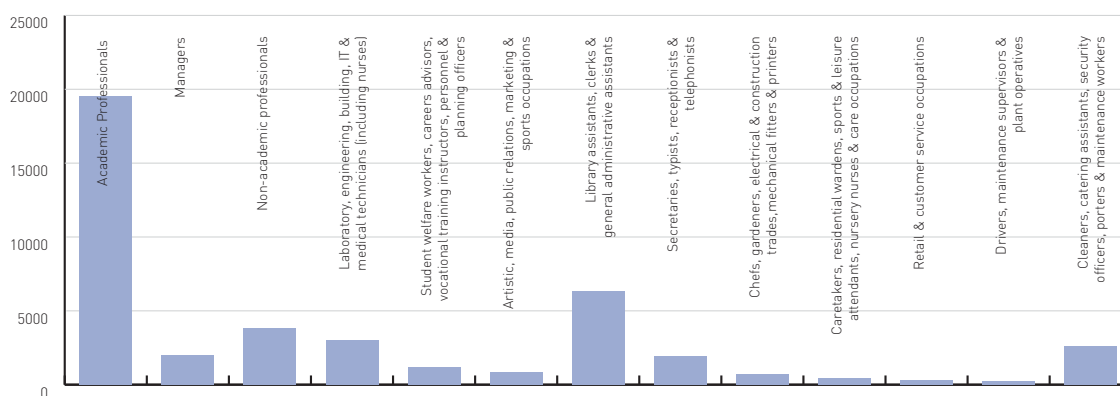
Employment

- The region's universities provided 42,960 full-time equivalent jobs across a wide range of occupations. The occupational profile of university employment is shown in chart 43 and table 17 below:

- While the occupational profile of higher education institutional employment is predictably highly specialised in academic professional posts, it is important to note the spread of employment across a wide range of other occupations. For instance, the relatively high proportion of cleaners, security assistants and other support staff reflects the need to maintain substantial physical estates and buildings.

Chart 43

Occupational profile of universities in the South East, 2007/08 (total 42,960 full-time equivalent jobs)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Table 17

Employment in universities in the South East, 2007/08

Staff	Full time equivalent	Percentage of total
Academic professionals	19,509	45.4
Managers	1,969	4.6
Non-academic professionals	3,819	8.9
Laboratory, engineering, building, IT and medical technicians (including nurses)	3,023	7.0
Student welfare workers, careers advisors, vocational training instructors, personnel and planning officers	1,203	2.8
Artistic, media, public relations, marketing and sports occupations	857	2.0
Library assistants, clerks and general administrative assistants	6,363	14.8
Secretaries, typists, receptionists and telephonists	1,943	4.5
Chefs, gardeners, electrical and construction trades, mechanical fitters and printers	706	1.6
Caretakers, residential wardens, sports and leisure attendants, nursery nurses and care occupations	461	1.1
Retail and customer service occupations	281	0.7
Drivers, maintenance supervisors and plant operatives	208	0.5
Cleaners, catering assistants, security officers, porters and maintenance workers	2,618	6.1
Total	42,960	100.0

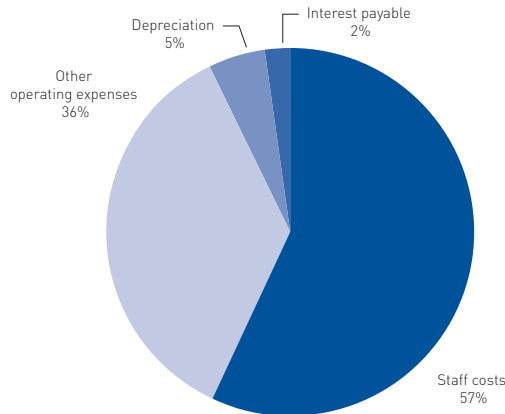
Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Expenditure

- The expenditure of universities in the South East, their staff and students, generated economic activity through secondary or 'knock-on' effects. The total impact was significant.

Chart 44

Expenditure of universities in the South East, 2007/08 (total £3 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

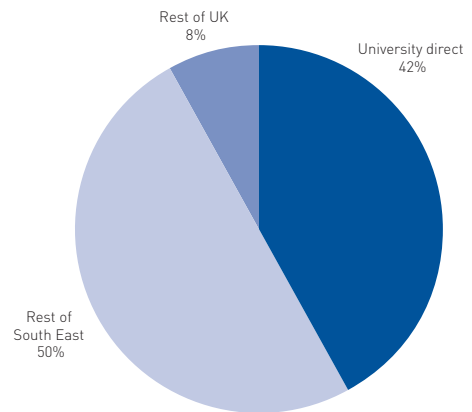
- In 2007/08, universities in the South East spent just over £3 billion. University expenditure was very similar to university revenue in the study year, which is a characteristic of non-profit-making institutions.
- They also attracted 38,425 students from outside the UK, who spent an estimated additional £261 million off-campus.

Output generated

- The universities' own output was £3.1 billion. Through 'knock-on' effects they generated an additional £4.3 billion in other industries throughout the UK, with most of it (£3.7 billion) in the South East region.

Chart 45

Output generated by universities in the South East, 2007/08 (total £7.4 billion)

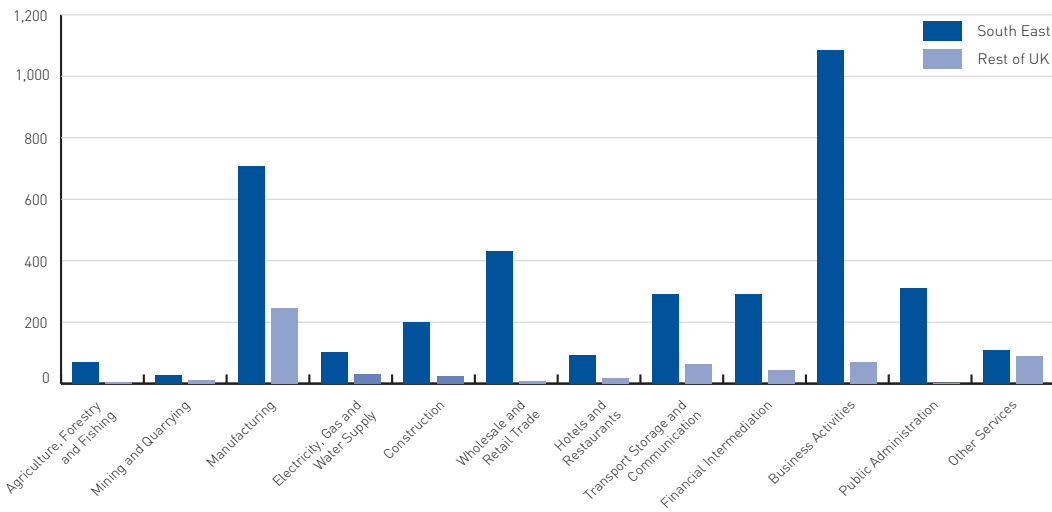


Source: Universities UK economic impact modelling system (2009).

- This gives a UK-wide output multiplier of 2.39 (with a regional output multiplier of 2.19). In other words, for every £1 million of university output, a further £1.39 million is generated in other UK industries, of which £1.19 million is in industries located in the South East.

Chart 46

Secondary output generated by universities in the South East, 2007/08 (total £4.3 billion)



Source: Universities UK economic impact modelling system (2009).

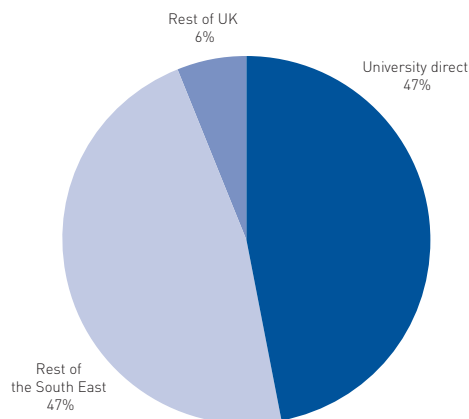
- Chart 46 shows the industries in which output was generated. There is an emphasis on manufacturing, wholesale and retail and business activities.

Employment

- In addition to providing 42,960 full-time equivalent jobs directly in higher education, institutional expenditure generated jobs in other parts of the economy.
- 48,051 full-time equivalent jobs were generated outside the universities, with most in the South East region.

Chart 47

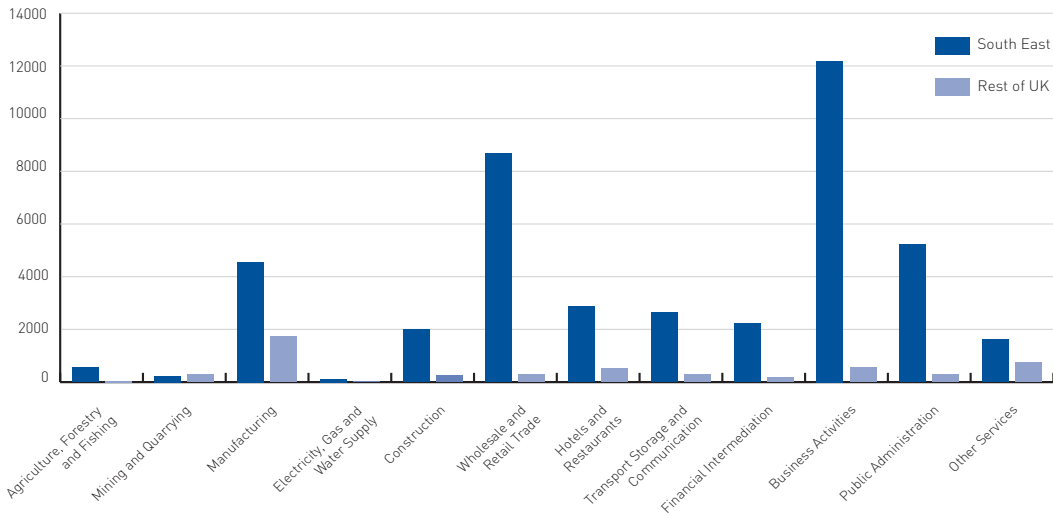
Total employment generated by university expenditure in the South East, 2007/08 (total 91,011 full-time-equivalent jobs)



Source: Universities UK economic impact modelling system (2009).

Chart 48

**Secondary employment generated by universities in the South East, 2007/08
(total 48,051 full-time equivalent jobs)**



Source: Universities UK economic impact modelling system (2009).

- The employment generated indicates an overall UK employment multiplier of 2.12 (2.0 within the South East). In other words, for every 100 jobs within a university, a further 112 jobs were generated in other industries in the UK, of which 100 were in industries located in the South East region.
- Employment was generated in a wide range of industries, with particular concentration in manufacturing, wholesale and retail, as well as business activities and public administration.

International student expenditure

- Universities in the South East attracted 38,425 students from outside the UK to study in the region. In addition to any fees or other monies paid to universities (for example, for halls of residence fees etc), these students spent an estimated £261 million off-campus.
- This off-campus expenditure generated £367 million of output and 3,469 full-time equivalent jobs throughout the UK.

Overall impact

- The overall economic impact of university expenditure in the South East is shown in table 18.

Table 18

Overall impact of university and international student expenditure in the South East, 2007/08

£ millions					
Category	Direct (£ millions)	Knock-on impact on the South East	Total impact on the South East (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
South East universities	£3,117.12	£3,720.39	£6,837.51	£606.02	£7,443.53
Non-UK students	0	£316.30	£316.30	£50.69	£366.99
<i>Total combined impact of university activity</i>	<i>£3,117.12</i>	<i>£4,036.69</i>	<i>£7,153.81</i>	<i>£656.71</i>	<i>£7,810.52</i>
Full-time-equivalent jobs					
Category	Direct (full-time-equivalent jobs)	Total-knock on impact on the South East	Total impact on the South East (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
South East universities	42,960	42,845	85,805	5,206	91,011
Non-UK students	0	3,095	3,095	375	3,469
<i>Total combined impact of university activity</i>	<i>42,960</i>	<i>45,940</i>	<i>88,900</i>	<i>5,580</i>	<i>94,481</i>

Source: Universities UK economic impact modelling system (2009).

Introduction

- This summary of the key economic features of higher education in the South West in the academic year 2007/08 focuses primarily on higher education institutions as businesses, generating economic activity through their expenditure, which is an aspect of their contribution to the regional and national economy that can be readily measured.
- The universities included are the 12 institutions in the South West for which data is provided by the Higher Education Statistics Agency (HESA). (They are listed in Appendix 2.) It should be noted that while these universities are the major suppliers of higher education in the South West, courses at this level are also offered at a number of further education colleges and some higher education students will be registered at such colleges. Relevant data on these are not included in HESA publications. While this report will therefore capture most of the economic impact of higher education as an activity, its overall impact in the South West of England will be somewhat greater.
- The primary focus of the study was universities in the South West as businesses and the impact generated by their activity during the academic year 2007/08. We also examined the impact of the off-campus expenditure of international students and students from the rest of the EU who were studying at universities in the South West in that year. The expenditure of UK- based students was excluded (as arguably this money cannot be regarded as additional to the UK economy). The study used a two-stage approach to the estimation of the economic impact of higher education in the South West, as described in section 2.

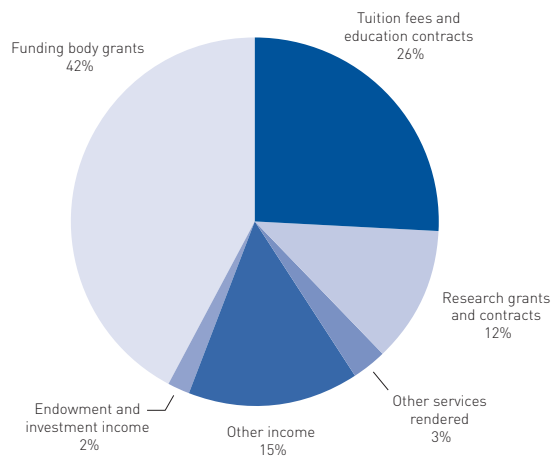
Key findings

Revenue

- Higher education in the South West had revenue of £1.36 billion in the study year.

Chart 49

South West: university revenue, 2007/08 (total £1.36 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

- Most of the income received was associated with teaching and research activity (income from funding council grants, tuition fees and research grants and contracts amounted to 80 per cent of the total). Other services (for example, residence and catering and conference income) accounted for 18 per cent of revenue.
- The UK public sector was the largest single client, with 54 per cent of university revenue being core payments from the public sector. Core public sector revenue consists of funding council payments and tuition fees from public sector sources.
- 13 per cent of revenue was derived from other public sector bodies for other purposes, including research contracts, consultancy and other services.

- 33 per cent of university revenue was earned from the private sector and international clients.

Export earnings

- The universities' international revenue of £125 million together with the estimated off-campus expenditure of international students (£113 million) represents a total of £238 million of export earnings.

Table 19

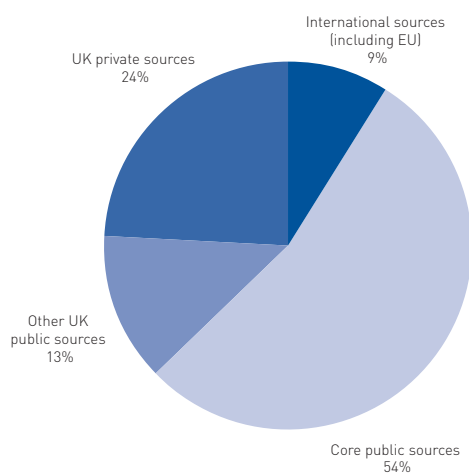
South West: university revenue sources, 2007/08 (£ million)

Type of revenue	Core public	Other public	UK private	International	Totals
Funding body grants	564	0	0	0	564
Tuition fees and education contracts	178	0	94	81	353
Research grants and contracts	0	105	44	18	167
Other services rendered	0	8	28	9	46
Other income	0	58	133	17	208
Endowment and investment income	0	0	24	0	24
Total	742	171	324	125	1,363

Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Chart 50

South West: university revenue sources, 2007/08 (£1.36 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

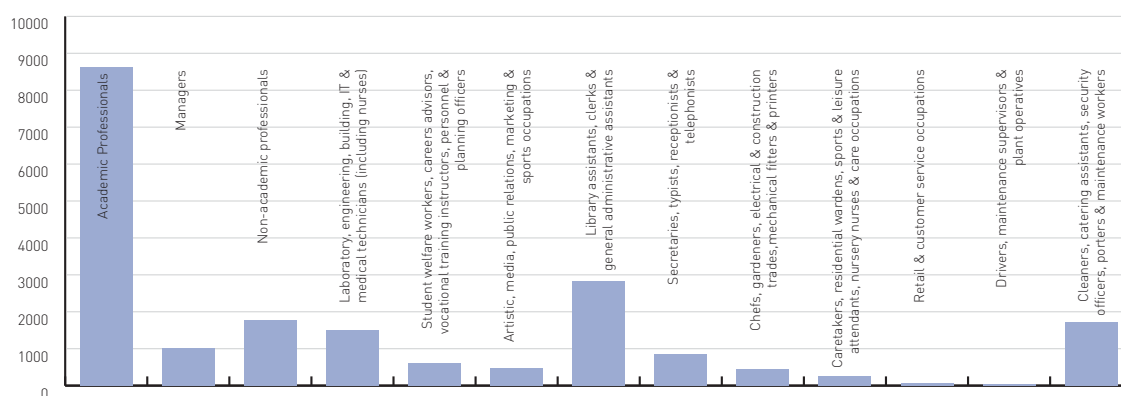
Employment

- Universities and colleges in the South West provided 20,218 full-time equivalent jobs across a wide range of occupations. The occupational profile of university employment is shown in Chart 51 and table 20 below:

- While the occupational profile of higher education institutional employment is predictably highly specialised in academic professional posts, it is important to note the spread of employment across a wide range of other occupations. For instance, the relatively high proportion of cleaners, security assistants and other support staff reflects the need to maintain substantial physical estates and buildings.

Chart 51

Occupational profile of universities in the South West, 2007/08 (total 20,218 full-time equivalent jobs)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Table 20

Employment in universities in the South West, 2007/08

Staff	Full time equivalent	Percentage of total
Academic professionals	8,612	42.6
Managers	1,024	5.1
Non-academic professionals	1,778	8.8
Laboratory, engineering, building, IT and medical technicians (including nurses)	1,515	7.5
Student welfare workers, careers advisors, vocational training instructors, personnel and planning officers	606	3.0
Artistic, media, public relations, marketing and sports occupations	473	2.3
Library assistants, clerks and general administrative assistants	2,839	14.0
Secretaries, typists, receptionists and telephonists	848	4.2
Chefs, gardeners, electrical and construction trades, mechanical fitters and printers	436	2.2
Caretakers, residential wardens, sports and leisure attendants, nursery nurses and care occupations	248	1.2
Retail and customer service occupations	77	0.4
Drivers, maintenance supervisors and plant operatives	54	0.3
Cleaners, catering assistants, security officers, porters and maintenance workers	1,708	8.4
Total	20,218	100.0

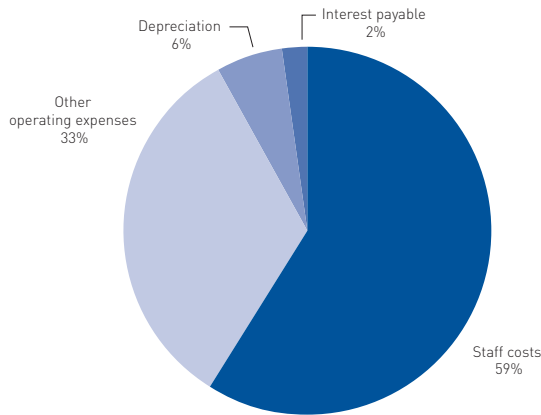
Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Expenditure

- The expenditure of universities in the South West, their staff and students, generated economic activity through secondary or 'knock-on' effects. The total impact was significant.

Chart 52

Expenditure of universities in the South West, 2007/08 (total £1.33 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

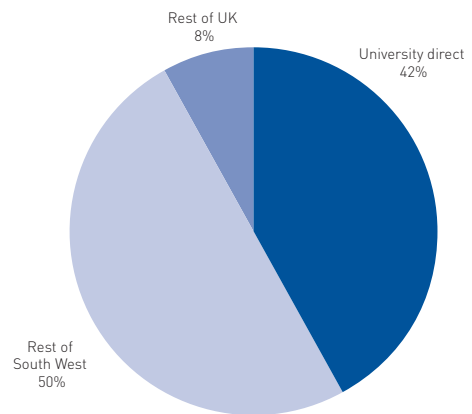
- In 2007/08, universities in the South West spent just over £1.3 billion. University expenditure was very similar to university revenue in the study year, which is a characteristic of non-profit-making institutions.
- They also attracted 16,640 students from outside the UK, who spent an estimated additional £113 million off-campus.

Output generated

- The universities' own output was £1.36 billion. Through 'knock-on' effects they generated an additional £1.9 billion in other industries throughout the UK, with most (£1.6 billion) in the South West region.

Chart 53

Output generated by universities in the South West, 2007/08 (total £1.9 billion)

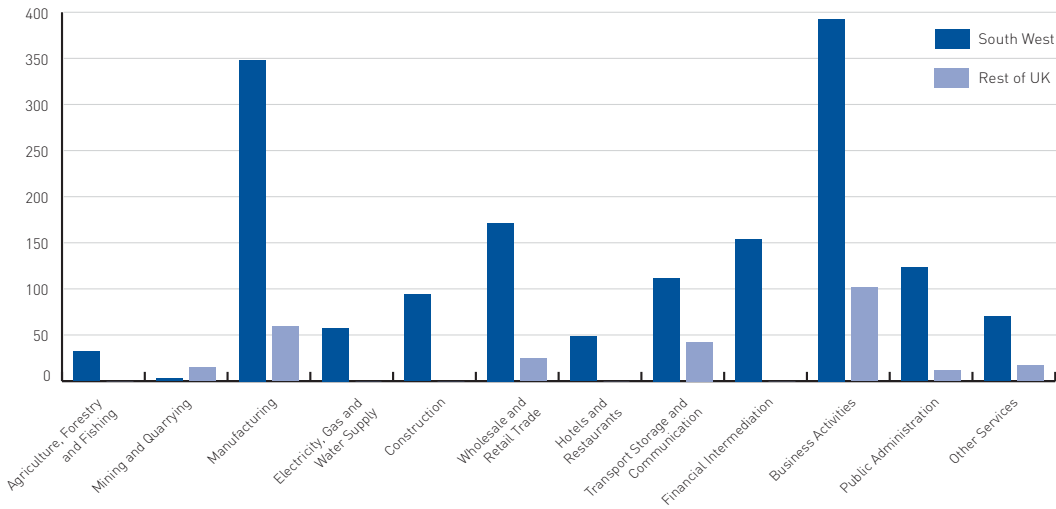


Source: Universities UK economic impact modelling system (2009).

- This gives a UK-wide output multiplier of 2.38 (with a regional output multiplier of 2.18). In other words, for every £1 million of university output in the South West, a further £1.38 million is generated in other UK industries, of which £1.18 million is in industries located in the region.

Chart 54

Secondary output generated by universities in the South West, 2007/08 (total £1.9 billion)



Source: Universities UK economic impact modelling system (2009).

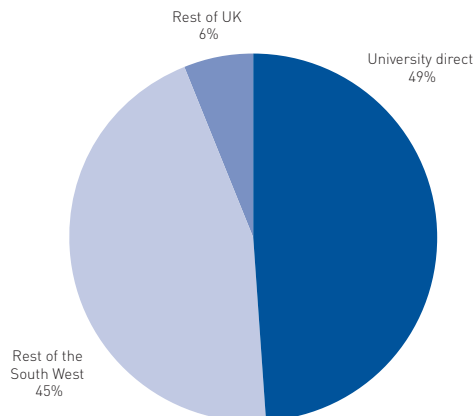
- Chart 54 shows the industries in which output was generated. There is an emphasis on manufacturing, wholesale and retail and business activities.

Employment

- In addition to providing 20,218 full-time equivalent jobs directly in higher education, institutional expenditure generated jobs in other parts of the economy.
- 20,878 full-time equivalent jobs were generated outside the universities, with most of them in the South West region.

Chart 55

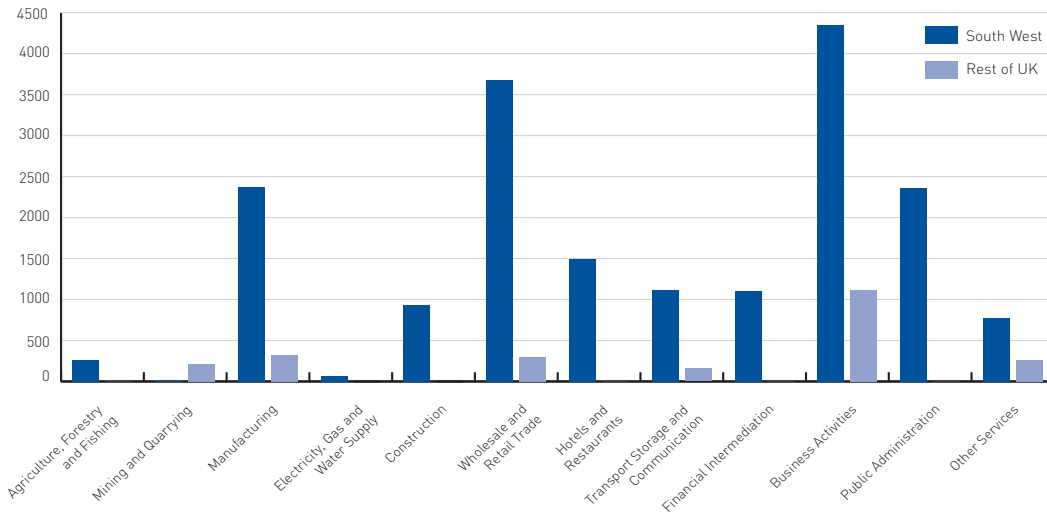
Total employment generated by university expenditure in the South West, 2007/08 (total 41,096 full-time equivalent jobs)



Source: Universities UK economic impact modelling system (2009).

Chart 56

Secondary employment generated by universities in the South West, 2007/08 (total 20,878 full-time-equivalent jobs)



Source: Universities UK economic impact modelling system (2009).

- The employment generated indicates an overall UK employment multiplier of 2.03 (1.91 within the South West). In other words, for every 100 jobs within a university in the South West, a further 103 jobs were generated in other industries in the UK, of which 91 were in industries located in the region.
- Employment was generated in a wide range of industries, with particular concentration in manufacturing, wholesale and retail, as well as business activities and public administration.

International student expenditure

- It has been highlighted that universities in the South West attracted 16,640 students from outside the UK to study in the region. In addition to any fees or other monies paid to the universities (for example, for halls of residence fees etc), these students spent an estimated £113 million off-campus.
- This off-campus expenditure generated £158 million of output and 1,500 full-time equivalent jobs throughout the UK.

Overall impact

- The overall economic impact of university expenditure in the South West is shown in table 21.

Table 21

Overall impact of university and international student expenditure in South West, 2007/08

£ millions					
Category	Direct (£ millions)	Knock-on impact on the South West	Total impact on the South West (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
South West universities	£1,362.56	£1,606.68	£2,969.24	£269.75	£3,239.00
Non-UK students	0	£131.24	£131.24	£27.69	£158.92
<i>Total combined impact of university activity</i>	<i>£1,362.56</i>	<i>£1,737.92</i>	<i>£3,100.48</i>	<i>£297.44</i>	<i>£3,397.92</i>
Full-time-equivalent jobs					
Category	Direct (full-time-equivalent jobs)	Total-knock on impact on the South West	Total impact on the South West (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
South West universities	20,218	18,519	38,737	2,359	41,096
Non-UK students	0	1,288	1,288	215	1,501
<i>Total combined impact of university activity</i>	<i>20,218</i>	<i>19,807</i>	<i>40,025</i>	<i>2,574</i>	<i>42,598</i>

Source: Universities UK economic impact modelling system (2009).

Introduction

- This summary of the key economic features of higher education in the West Midlands in the academic year 2007/08 focuses primarily on universities as businesses, generating economic activity through their expenditure, which is an aspect of their contribution to the regional and national economy that can be readily measured.
- The universities included are the 12 institutions in the West Midlands for which data is provided by the Higher Education Statistics Agency (HESA). (They are listed in Appendix 2.) It should be noted that while these institutions are the major suppliers of higher education in the West Midlands, courses at this level are also offered at a range of further education colleges and there can be numbers of higher education students registered at such colleges. Relevant data on these are not included in HESA publications. While this report will therefore capture most of the economic impact of higher education as an activity, its overall impact in the West Midlands will be somewhat greater.
- The primary focus of the study was universities in the West Midlands as businesses and the impact generated by their activity during the academic year 2007/08. We also examined the impact of the off-campus expenditure of international students and students from the rest of the EU who were studying at universities in the West Midlands in that year. The expenditure of UK-based students was excluded (as arguably this money cannot be regarded as additional to the UK economy). The study used a two-stage approach to the estimation of the economic impact of higher education in the West Midlands, as described in section 2.

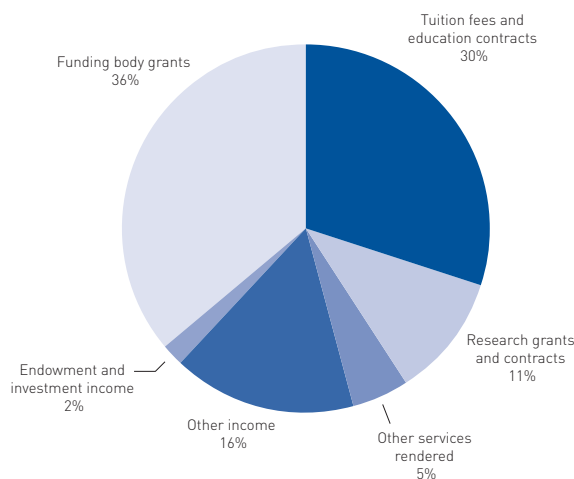
Key findings

Revenue

- Higher education in the West Midlands had revenue of £1.64 billion in 2007/08.

Chart 57

West Midlands: university revenue, 2007/08 (total £1.64 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

- Most of the income received was associated with teaching and research activity (income from funding council grants, tuition fees and research grants and contracts amounted to 77 per cent of the total). Other services (for example, residence and catering and conference income) accounted for 21 per cent of revenue.
- The UK public sector was the largest single client, with 50 per cent of university revenue being core payments from the public sector. Core public sector revenue consists of funding council payments and tuition fees from public sector sources.
- 12 per cent of revenue was derived from other public sector bodies for other purposes, including research contracts, consultancy and other services.

- 38 per cent of university revenue was earned from the private sector and international clients.

Export earnings

- The universities' international revenue of nearly £194 million together with the estimated off-campus expenditure of international students (£187 million) represents a total of £381 million of export earnings.

Table 22

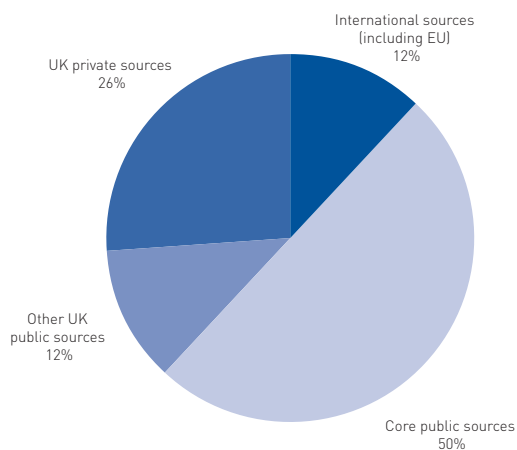
West Midlands: university revenue sources, 2007/08 (£ million)

Type of revenue	Core public	Other public	UK private	International	Totals
Funding body grants	589	0	0	0	589
Tuition fees and education contracts	225	0	121	141	487
Research grants and contracts	0	115	46	18	180
Other services rendered	0	43	34	11	88
Other income	0	49	191	24	264
Endowment and investment income	0	0	29	0	29
Total	814	207	422	194	1,636

Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Chart 58

West Midlands: university revenue sources, 2007/08 (total £1.64 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

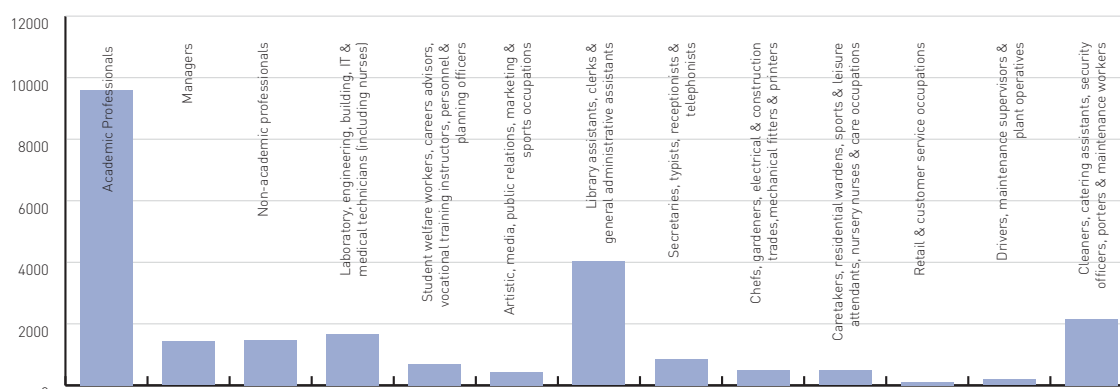
Employment

- The universities and colleges in the West Midlands provided 23,638 full-time equivalent jobs across a wide range of occupations. The occupational profile of university employment is shown in chart 59 and table 23 below:

- While the occupational profile of university employment is predictably highly specialised in academic professional posts, it is important to note the spread of employment across a wide range of other occupations. For instance, the relatively high proportion of cleaners, security assistants and other support staff reflects the need to maintain substantial physical estates and buildings.

Chart 59

Occupational profile of universities in the West Midlands, 2007/08 (total 23,638 full-time-equivalent jobs)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Table 23

Employment in universities in the West Midlands, 2007/08

Staff	Full time equivalent	Percentage of total
Academic professionals	9,601	40.6
Managers	1,428	6.0
Non-academic professionals	1,473	6.2
Laboratory, engineering, building, IT and medical technicians (including nurses)	1,678	7.1
Student welfare workers, careers advisors, vocational training instructors, personnel and planning officers	690	2.9
Artistic, media, public relations, marketing and sports occupations	444	1.9
Library assistants, clerks and general administrative assistants	4,024	17.0
Secretaries, typists, receptionists and telephonists	865	3.7
Chefs, gardeners, electrical and construction trades, mechanical fitters and printers	488	2.1
Caretakers, residential wardens, sports and leisure attendants, nursery nurses and care occupations	485	2.1
Retail and customer service occupations	112	0.5
Drivers, maintenance supervisors and plant operatives	190	0.8
Cleaners, catering assistants, security officers, porters and maintenance workers	2,160	9.1
Total	23,638	100.0

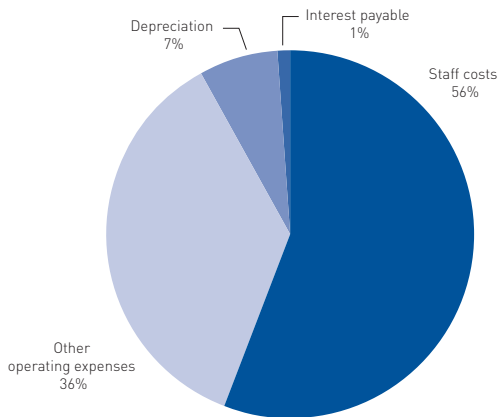
Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Expenditure

- The expenditure of universities in the West Midlands, their staff and students, generated economic activity through secondary or 'knock-on' effects. The total impact was significant.

Chart 60

Expenditure of universities in the West Midlands, 2007/08 (total £1.6 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

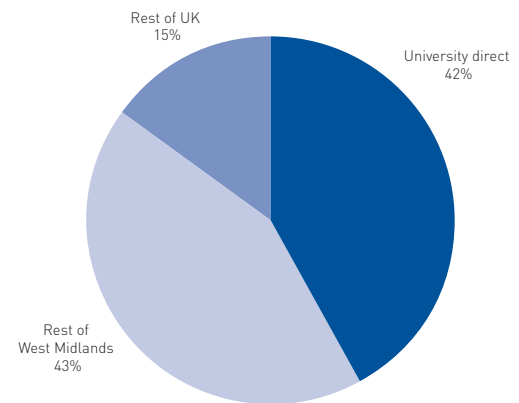
- In 2007/08, universities in the West Midlands spent just over £1.6 billion. University expenditure was very similar to university revenue in the study year, which is a characteristic of non-profit-making institutions.
- They also attracted 27,480 students from outside the UK, who spent an estimated additional £187 million off-campus.

Output generated

- The universities' own output was £1.64 billion. Through 'knock-on' effects the universities and colleges generated an additional £2.2 billion in other industries throughout the UK, with most (£1.6 billion) in the region.

Chart 61

Output generated by universities in the West Midlands, 2007/08 (total £3.9 billion)

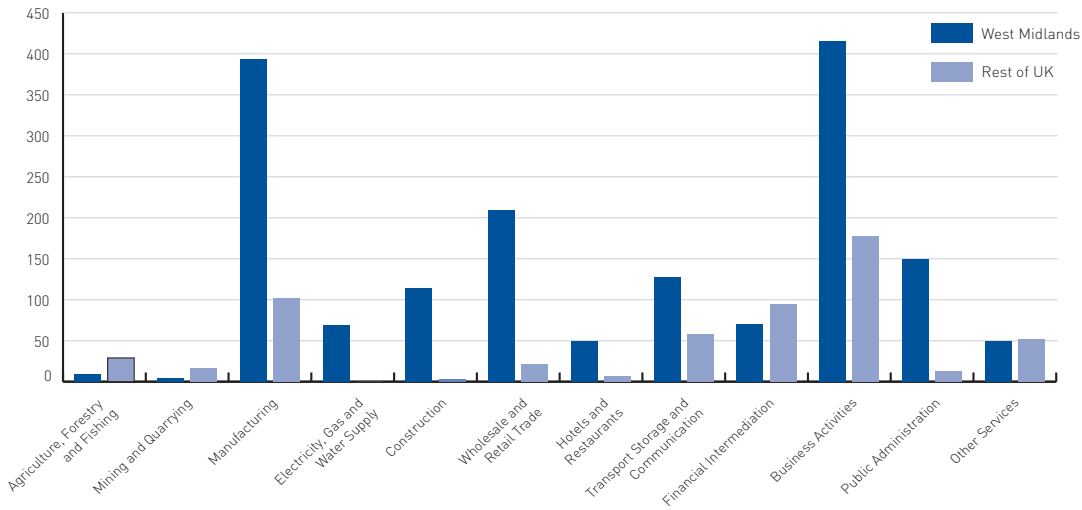


Source: Universities UK economic impact modelling system (2009).

- This gives a UK-wide output multiplier of 2.36 (with a regional output multiplier of 2.01). In other words, for every £1 million of university output, a further £1.36 million is generated in other UK industries, of which £1.01 million is in industries located in the West Midlands.

Chart 62

Secondary output generated by universities in the West Midlands, 2007/08 (total £2.2 billion)



Source: Universities UK economic impact modelling system (2009).

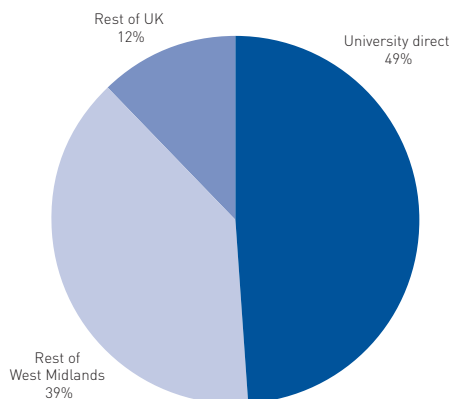
- Chart 62 shows the industries in which output was generated. There is an emphasis on manufacturing, wholesale and retail and business activities.

Employment

- In addition to providing 23,638 full-time equivalent jobs directly in higher education, institutional expenditure generated jobs in other parts of the economy.
- 24,775 full-time equivalent jobs were generated outside the universities, with most based in the West Midlands region.

Chart 63

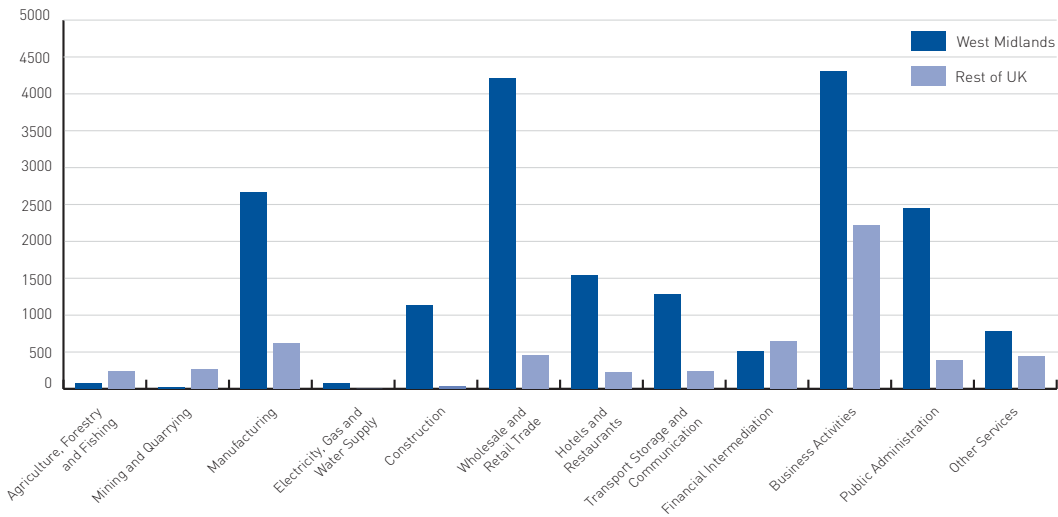
Total employment generated by universities in the West Midlands, 2007/08 (total 48,413 full-time-equivalent jobs)



Source: Universities UK economic impact modelling system (2009).

Chart 64

Secondary employment generated by universities in the West Midlands, 2007/08 (total 24,775 full-time equivalent jobs)



Source: Universities UK economic impact modelling system (2009).

- The employment generated indicates an overall UK employment multiplier of 2.05 (1.81 within the West Midlands). In other words, for every 100 jobs within a university in the West Midlands, a further 105 jobs were generated in other industries in the UK, of which 81 were in industries located in the region.
- Employment was generated in a wide range of industries, with particular concentration in manufacturing, wholesale and retail, as well as business activities and public administration.

International student expenditure

- Universities in the West Midlands attracted 27,480 students from outside the UK to study in the region. In addition to any fees or other monies paid to the universities (for example, for halls of residence fees etc), these students spent an estimated £187 million off-campus.
- This off-campus expenditure generated £263 million of output and 2,481 full-time equivalent jobs throughout the UK.

Overall impact

- The overall economic impact of university expenditure in the West Midlands is shown in table 23.

Table 24

Overall impact of university and international student expenditure in the West Midlands, 2007/08

£ millions					
Category	Direct (£ millions)	Knock-on impact on the West Midlands	Total impact on the West Midlands (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
West Midlands universities	£1,636.38	£1,658.25	£3,294.63	£573.72	£3,868.35
Non-UK students	0	£195.41	£195.41	£67.05	£262.46
<i>Total combined impact of university activity</i>	<i>£1,636.38</i>	<i>£1,853.66</i>	<i>£3,490.04</i>	<i>£640.77</i>	<i>£4,130.81</i>
Full-time-equivalent jobs					
Category	Direct (full-time-equivalent jobs)	Total-knock on impact on the West Midlands	Total impact on the West Midlands (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
West Midlands universities	23,638	19,036	42,674	5,739	48,413
Non-UK students	0	1,737	1,737	744	2,481
<i>Total combined impact of university activity</i>	<i>23,638</i>	<i>20,773</i>	<i>44,411</i>	<i>6,483</i>	<i>50,894</i>

Source: Universities UK economic impact modelling system (2009).

Introduction

- This summary of the key economic features of higher education in Yorkshire and Humberside in the academic year 2007/08 focuses primarily on universities as businesses, generating economic activity through their expenditure, which is an aspect of their contribution to the regional and national economy that can be readily measured.
- The universities included are the 11 institutions for which data is provided by the Higher Education Statistics Agency. (They are listed in Appendix 2.) It should be noted that while these universities are the major suppliers of higher education in Yorkshire and Humberside, courses at this level are also offered at a range of further education colleges and there can be significant numbers of higher education students registered at such colleges. Relevant data on these are not included in HESA publications. While this report will therefore capture most of the economic impact of higher education as an activity, its overall impact in Yorkshire and Humberside will be somewhat greater.
- The primary focus of the study was the universities in Yorkshire and Humberside as businesses and the impact generated by their activity during the academic and financial year 2007/08. We also examined the impact of the off-campus expenditure of international students and students from the rest of the EU who were studying at universities in Yorkshire and Humberside in that year. The expenditure of UK-based students was excluded (as arguably this money cannot be regarded as additional to the UK economy). The study used a two-stage approach to the estimation of the economic impact of higher education in Yorkshire and Humberside, as described in section 2.

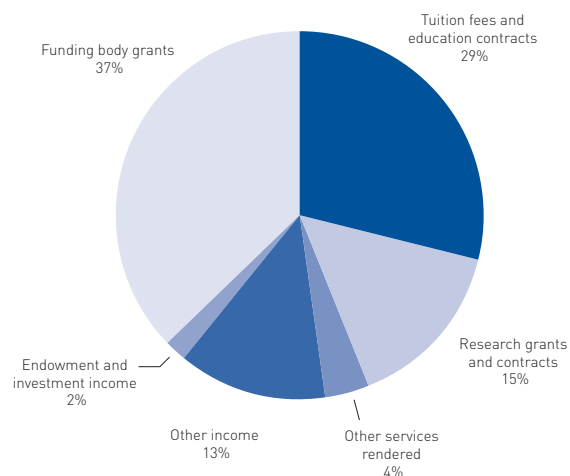
Key findings

Revenue

- Higher education in Yorkshire and Humberside had revenue of £1.84 billion in the study year.

Chart 65

Yorkshire and Humberside: university revenue, 2007/08 (total £1.84 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

- Most of the income received was associated with teaching and research activity (income from funding council grants, tuition fees and research grants and contracts amounted to 81 per cent of the total). Other services (for example, residence and catering and conference income) accounted for 17 per cent of revenue.
- The UK public sector was the largest single client, with 52 per cent of revenue being core payments from the public sector. Core public sector revenue consists of funding council payments and tuition fees from public sector sources.
- 13 per cent of revenue was derived from other public sector bodies for other purposes, including research contracts, consultancy and other services.

- 35 per cent of university revenue was earned from the private sector and international clients.

Export earnings

- The universities' international revenue of £216 million together with the estimated off-campus expenditure of international students (£181 million) represents a total of £397 million of export earnings.

Table 25

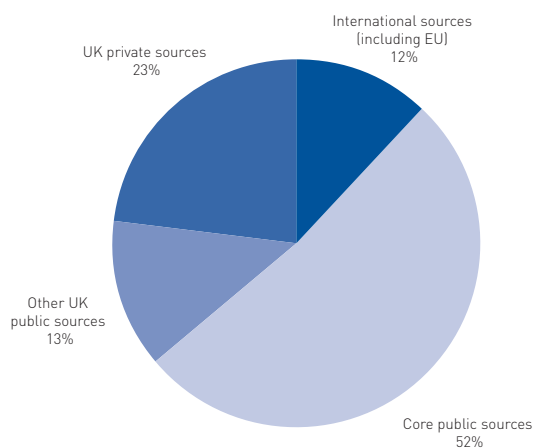
Yorkshire and Humberside: university revenue sources, 2007/08 (£ million)

Type of revenue	Core public	Other public	UK private	International	Totals
Funding body grants	678	0	0	0	678
Tuition fees and education contracts	287	0	115	143	545
Research grants and contracts	0	168	73	39	280
Other services rendered	0	23	40	13	76
Other income	0	50	162	21	233
Endowment and investment income	0	0	31	0	31
Total	965	242	421	216	1,844

Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Chart 66

Yorkshire and Humberside: university revenue sources, 2007/08 (total £1.84 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

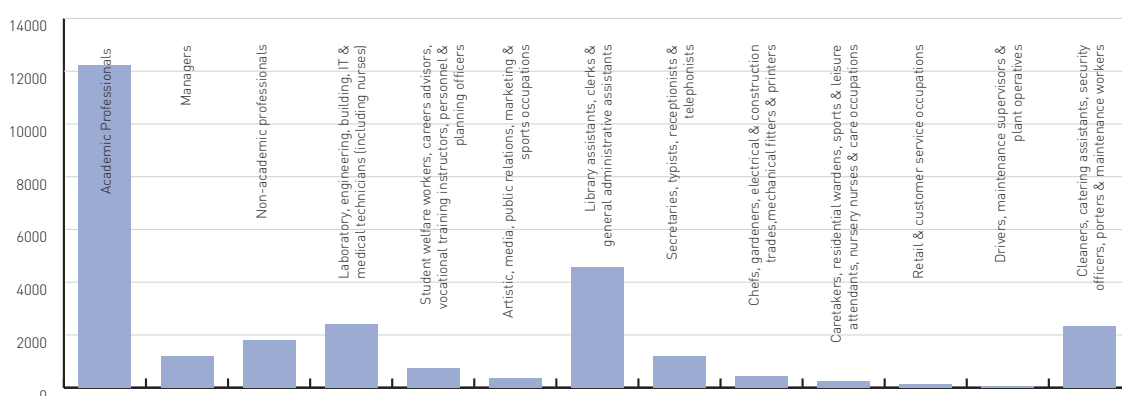
Employment

- The universities provided 27,719 full-time equivalent jobs across a wide range of occupations. The occupational profile of university employment is shown in chart 67 and table 26 below:

- While the occupational profile of university employment is predictably highly specialised in academic professional posts, it is important to note the spread of employment across a wide range of other occupations. For instance, the relatively high proportion of cleaners, security assistants and other support staff reflects the need to maintain substantial physical estates and buildings.

Chart 67

Occupational profile of universities in Yorkshire and Humberside, 2007/08 (total 27,719 full-time-equivalent jobs)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Table 26

Employment in universities in Yorkshire and Humberside, 2007/08

Staff	Full time equivalent	Percentage of total
Academic professionals	12,211	44.1
Managers	1,190	4.3
Non-academic professionals	1,811	6.5
Laboratory, engineering, building, IT and medical technicians (including nurses)	2,396	8.6
Student welfare workers, careers advisors, vocational training instructors, personnel and planning officers	735	2.7
Artistic, media, public relations, marketing and sports occupations	371	1.3
Library assistants, clerks and general administrative assistants	4,584	16.5
Secretaries, typists, receptionists and telephonists	1,190	4.3
Chefs, gardeners, electrical and construction trades, mechanical fitters and printers	440	1.6
Caretakers, residential wardens, sports and leisure attendants, nursery nurses and care occupations	263	0.9
Retail and customer service occupations	114	0.4
Drivers, maintenance supervisors and plant operatives	73	0.3
Cleaners, catering assistants, security officers, porters and maintenance workers	2,341	8.4
Total	27,719	100.0

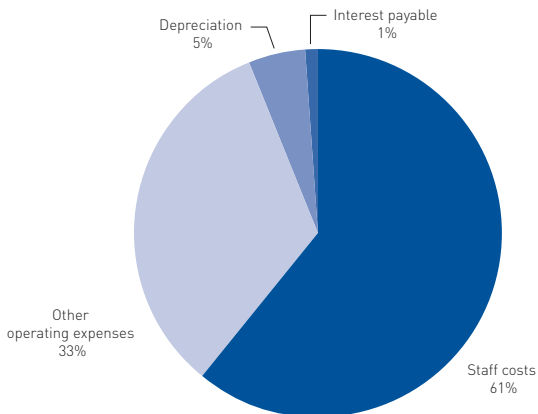
Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

Expenditure

- The expenditure of universities in Yorkshire and Humberside, their staff and students, generated economic activity through secondary or 'knock-on' effects. The total impact was significant.

Chart 68

Expenditure of universities in Yorkshire and Humberside, 2007/08 (total £1.79 billion)



Source: HESA (2009) *Resources of higher education institutions, 2007/08*.

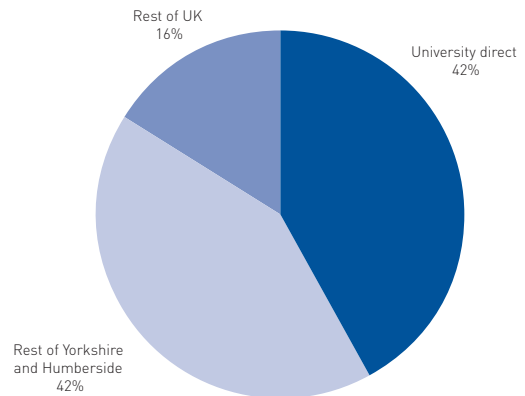
- In 2007/08, universities in Yorkshire and Humberside spent just over £1.79 billion.
- The institutions also attracted 26,605 students from outside the UK, who spent an estimated additional £181 million off-campus.

Output generated

- The universities' own output was £1.84 billion. Through 'knock-on' effects the universities and colleges generated an additional £2.5 billion in other industries throughout the UK, with most (£1.84 billion) in industries in Yorkshire and Humberside.

Chart 69

Output generated by universities in Yorkshire and Humberside, 2007/08 (total £4.4 billion)

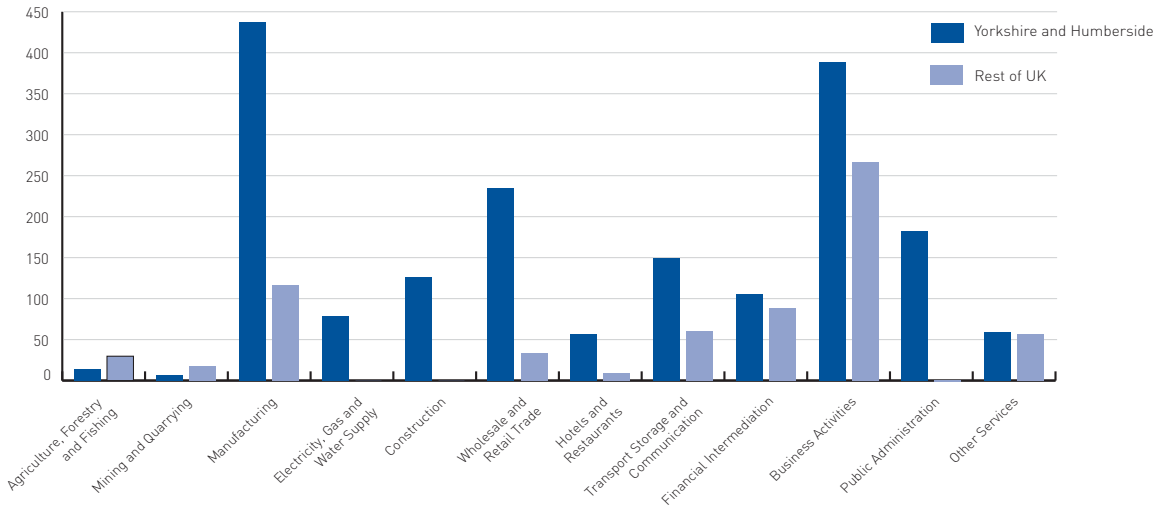


Source: Universities UK economic impact modelling system (2009).

- This gives a UK-wide output multiplier of 2.36 (with a regional output multiplier of 2.0). In other words, for every £1 million of university output, a further £1.36 million is generated in other UK industries, of which £1 million is in industries located in Yorkshire and Humberside.

Chart 70

Secondary output generated by universities in Yorkshire and Humberside, 2007/08 (total £2.5 billion)



Source: Universities UK economic impact modelling system (2009).

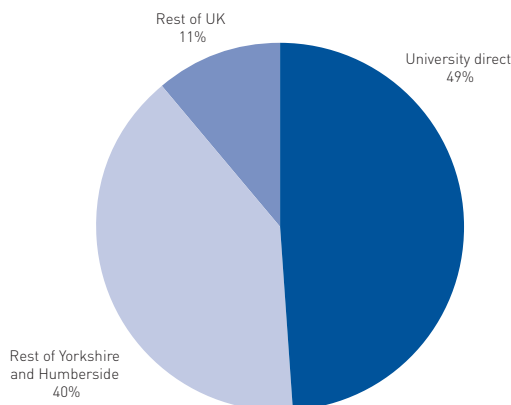
- Chart 70 shows the industries in which output was generated. There is an emphasis on manufacturing, wholesale and retail and business activities.

Employment

- In addition to providing 27,719 full-time equivalent jobs directly in higher education, institutional expenditure generated jobs in other parts of the economy.
- 27,971 full-time equivalent jobs were generated outside the universities, with most based in the Yorkshire and Humberside region.

Chart 71

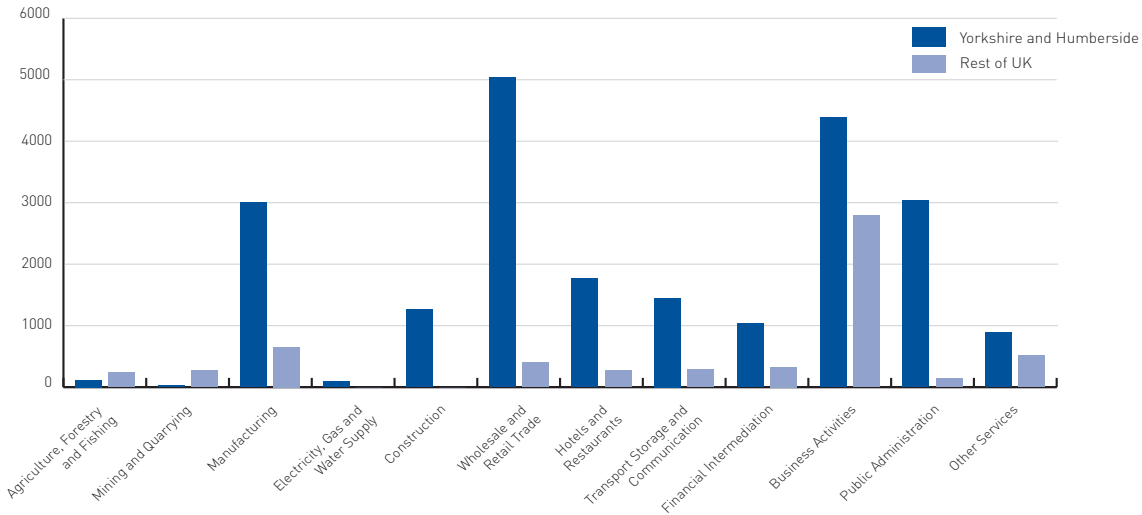
Total employment generated by university expenditure in Yorkshire and Humberside, 2007/08 (total 55,690 full-time equivalent jobs)



Source: Universities UK economic impact modelling system (2009).

Chart 72

Secondary employment generated by universities in Yorkshire and Humberside, 2007/08 (total 27,971 full-time-equivalent jobs)



Source: Universities UK economic impact modelling system (2009).

- The employment generated indicates an overall UK employment multiplier of 2.0 (1.80 within the region). In other words, for every 100 jobs within a university in Yorkshire and Humberside, a further 100 jobs were generated in other industries in the UK, of which 80 were in the region.
- Employment was generated in a wide range of industries, with particular concentration in manufacturing, wholesale and retail, as well as business activities and public administration.

International student expenditure

- Universities in Yorkshire and Humberside attracted 26,605 students from outside the UK to study in the region. In addition to any fees or other monies paid to the universities (for example, for halls of residence fees etc), these students spent an estimated £181 million off-campus.
- This off-campus expenditure generated £254 million of output and 2,402 full-time equivalent jobs throughout the UK.

Overall impact

- The overall economic impact of university expenditure is shown in table 24.

Table 27

Overall impact of university and international student expenditure in Yorkshire and Humberside, 2007/08

£ millions					
Category	Direct (£ millions)	Knock-on impact on Yorkshire and Humberside	Total impact on Yorkshire and Humberside (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
South West universities	£1,843.54	£1,839.17	£3,682.71	£675.80	£4,358.50
Non-UK students	0	£179.88	£179.88	£74.22	£254.10
<i>Total combined impact of university activity</i>	<i>£1,843.54</i>	<i>£2,019.05</i>	<i>£3,862.59</i>	<i>£750.02</i>	<i>£4,612.60</i>
Full-time-equivalent jobs					
Category	Direct (full-time-equivalent jobs)	Total-knock on impact on Yorkshire and Humberside	Total impact on Yorkshire and Humberside (direct plus knock-on)	Knock-on impact on the rest of the UK	Total impact on the UK (direct plus knock-on)
South West universities	27,719	22,100	49,819	5,872	55,690
Non-UK students	0	1,750	1,750	652	2,402
<i>Total combined impact of university activity</i>	<i>27,719</i>	<i>23,850</i>	<i>51,569</i>	<i>6,524</i>	<i>58,092</i>

Source: Universities UK economic impact modelling system (2009).

We used was a purpose-designed and specially constructed 'type II' input-output model of the UK economy, based on data derived from the Office of National Statistics' input-output tables (2006) together with Labour Force Survey data.³

Methodology and model specification

Creating the Leontief matrix

The Leontief matrix is a vital starting point within the economic model. The team used the Office for National Statistics' (ONS) input-output tables (2006) and it proved possible to create a type I and then a type II from this data source. We also used the national accounts data (Blue Book, 2008) in order to estimate wages (compensation of employment in national accounts terminology) as a proportion of the total household income from all sources. If non-wage income had not been included in the denominator then the Type II model would overestimate the impact of knock-on effects throughout the economy. The C-Map program was used in order to invert the 124 x 124 matrix.

First, we estimated a domestic money flows intermediate matrix, X^{DD} , and a domestic money flows final demand vector (excluding exports), Y^{DD} . We also extracted the vector of exports, E , from the input-output tables. Following this we used the matrices from above to *calculate* the vector of domestic gross outputs, X^D , to be used as control totals and for the estimation of coefficients:

$$(1) \quad X^D = X^{DD} + Y^{DD} + E.$$

Following this we calculated the domestic flows coefficient matrix,

$$A^{DD} = \frac{X^{DD}}{X^D}$$

We then calculated the type I Leontief inverse as:

$$(3) \quad \{I - A^{DD}\}^{-1}$$

This was then validated by calculating the following: (this is known as a *recreate base* or a *base year test*.)

$$(4) \quad X^* = \{I - A^{DD}\}^{-1} \{Y^{DD} + E\}$$

As calculated X^* was found to equal actual X^D , then the type I Leontief inverse was correct since it replicates the 'model' base year outcomes.

For the type II Leontief we needed to add a row of employment income coefficients and a column of household consumption coefficients to the A^{DD} matrix. For the income coefficients we then calculated for all industries:

$$(5) \quad Y_i^E / X_i^D$$

Where Y_i^E is compensation of employees in industry I and X_i^D is domestic output of industry I from above. Total household income Y^T was estimated as employment income Y^E (estimated from the input-output tables), plus other income Y^O from the Treasury Blue Book (2008.)

From the simulated domestic final demand matrix Y^{DD} estimated earlier, we used the column vector of domestic household consumption C^{DD} . From this the column vector of consumption coefficients is calculated as:

$$(6) \quad C^{DD} / Y^T$$

The type II Leontief inverse was now calculated. As above, validation involved ensuring that the expanded model was able to replicate actual base year outputs, including in this case total household income.

Extensions to model framework

UK employment figures by industry were created, using the Labour Force Survey where possible. Using this and the type II Leontief, the employment/output ratios can be calculated. This allows creation of the employment sub-matrix.

The UK occupation-by-industry submatrix was formed using primary data. The occupation by industry data was compiled from previous Tourism Satellite Accounts, compiled by the authors for the former Department for Culture, Media and Sport, which used the Labour Force Survey.

The extended labour market input-output model

The following describes both the use of the data already described in the creation of the model and the nature of the extended input-output model used as the main engine of analysis.

The basic UK input-output equation here is:

$$(7) \quad X^{UK} = \sum_{i=1}^j X_{ij}^{UK} + Y^{UK}$$

where:

i, j = industrial sectors 1 to 124 *including households*

- X^{UK} = vector of gross outputs
- χ_h^{UK} = total household income
- X_{ij}^{UK} = matrix of volumes of sales from UK sector i to UK sector j
- χ_{hi}^{UK} = employment income paid by sector i
- Y^{UK} = matrix of UK sectoral sales to final markets
- y_h^{UK} = UK household non-employment income

Taking the conventional input-output assumption that:

$$(8) \quad X_{ij}^{UK} = a_{ij}^{UK} X_j^{UK} \quad \forall_{i,j}$$

or, in matrix form:

$$(8a) \quad X_{ij}^{UK} = A^{UK} X^{UK}$$

where: A^{UK} is a matrix of parametric constants, whose typical element a_{ij}^{UK} gives the inputs required from UK industry i per unit of output of UK industry j.

Substituting (8a) into (7):

$$(9) \quad X^{UK} = A^{UK} X^{UK} + Y^{UK}$$

and solving (9) for X^{UK} :

$$(10) \quad X^{UK} = [I - A^{UK}]^{-1} Y^{UK}$$

where $[I - A^{UK}]^{-1}$ is the UK Type II Leontief Inverse

In the extended input-output model we define a vector of aggregate industry employment-output coefficients, e , with elements given by:

$$(11) \quad e_i = E_i^{UK} / X_i^{UK} \quad i = 1 \text{ to } 123 \text{ sectors}$$

where: E_i^{UK} is total full-time equivalent employment in UK industry i. Then, the vector E^{UK} of total UK sectoral employments is:

$$(12) \quad E^{UK} = \hat{e} X^{UK}$$

Or alternatively,

$$(12a) \quad E^{UK} = \hat{e} [I - A^{UK}]^{-1} Y^{UK}$$

(by substitution from (10))

For the creation of the occupation by industry matrix⁴ we define a matrix, o^{UK} , of UK occupational employment shares coefficients with elements given by:

$$(13) \quad o_{oj}^{UK} = O_{oj}^{UK} / E_j^{UK} \quad \begin{matrix} o = 1 \dots\dots 371 \text{ occupations} \\ j = 1 \dots\dots 123 \text{ sectors} \end{matrix}$$

where: O^{UK} is FTE employment in occupation o in industry j.

Then a vector, O^{UK} , of total UK employment in each occupation is obtained as:

$$(14) \quad O^{UK} = o^{UK} \hat{E}^{UK}$$

and from (12a):

$$(15) \quad O^{UK} = o^{UK} \hat{e} [I - A^{UK}]^{-1} Y^{UK}$$

Which is occupation by industry equating with overall full-time equivalent employment across the UK. This will operate through the impact of expenditure within the economy in a consistent manner.

Overall the key results of the UK extended input-output labour market model are derived from the following equations:

Sectoral gross outputs

$$X^{UK} = [I - A^{UK}]^{-1} Y^{UK}$$

Sectoral total employment

$$E^{UK} = \hat{e} [I - A^{UK}]^{-1} Y^{UK}$$

Employment by occupation

$$O^{UK} = o^{UK} \hat{e} [I - A^{UK}]^{-1} Y^{UK}$$

Model Gross Value Added (GVA) is calculated by deriving the matrix, g^{UK} , of UK GVA shares coefficients with elements given by:

$$(16) \quad g_{oj}^{UK} = G_{oj}^{UK} / X_j^{UK} \quad \begin{matrix} G = 1 \dots\dots 123 \text{ GVA} \\ j = 1 \dots\dots 123 \text{ sectors} \end{matrix}$$

Where: G_{oj}^{UK} is actual GVA within industry j.

Then a vector, G^{UK} , of total UK GVA for a given input-output is obtained as:

$$(17) \quad G^{UK} = g^{UK} [I - A^{UK}]^{-1} Y^{UK}$$

East Midlands

Bishop Grosseteste University College Lincoln
De Montfort University
University of Derby
University of Leicester
University of Lincoln
Loughborough University
University of Northampton
University of Nottingham
Nottingham Trent University

East of England

Anglia Ruskin University
University of Bedfordshire
University of Cambridge
Cranfield University
University of East Anglia
University of Essex
University of Hertfordshire
Norwich University College of the Arts
Writtle College

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Birkbeck College
Brunel University
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West Midlands

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Birmingham City University
University of Birmingham
University College Birmingham
Coventry University
Harper Adams University College
University of Keele
Newman University College
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University of Wolverhampton
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University of Huddersfield
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Leeds College of Music
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University of Leeds
Leeds Trinity and All Saints
Sheffield Hallam University
University of Sheffield
York St John University
University of York

- 1 A well-known characteristic of the location quotient method is that it tends to maximise local shares and hence local impacts because it assumes no 'cross-hauling' or import/export of the same industry commodity.
- 2 Student expenditure was estimated using the most recent UK expenditure survey of domestic UK students (DIUS 2009). International student expenditure was assumed to be similar to that of domestic students and adjusted downwards to reflect monies paid to the institution for accommodation
- 3 This UK model was constructed specifically for this study; in addition 12 regional extensions to the model have been developed, covering every part of the UK. The UK model and the 12 regional extensions form part of the system known as the Universities UK economic impact modelling system, which is designed to model the impact of universities on both the regional and national economies.
- 4 From Labour Force Survey data.

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