BELFAST: A LEARNING CITY

The economic impact of higher education students on the economy of Belfast

(Report prepared by Viewforth Consulting Ltd for Belfast City Council)

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An Investment Programme project

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Acknowledgements

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Introduction

This study provides an analysis of the economic impact of higher education students on the Belfast economy. It was commissioned by Belfast City Council as part of wider plans for the future development of Belfast as a 'Learning City,' which is one of the key strategic objectives of the Belfast Master plan[1] and the city's emerging integrated economic strategy[2]

The future development of Belfast as a 'destination of choice' for students from other parts of the UK and EU as well as from the rest of the world could have major positive economic impacts for the city, generating economic activity and creating jobs. This was highlighted in the Belfast City Masterplan and is also in tune with the broader strategy for Education in Northern Ireland[3], raising Northern Ireland's profile internationally with other potential spillover benefits to the economy and society. There is also high demand from domestic NI students with Belfast attracting large numbers of students from across Northern Ireland to study in the city, whose expenditure can boost city business. However with the student population already equivalent to 15% of the resident city population, expansion of student numbers also needs to be integrated into the wider development context for Belfast, as there are implications for local neighbourhoods with the need for a clear student housing strategy[4] as well as the need for planning in terms of the retail, leisure and other facilities required. The need to consider longer term planning for the student population is a scenario familiar to many UK cities with significant student populations, including Cardiff, Nottingham, Leeds and Manchester.

This study provides some of the initial evidence needed to inform future planning for Belfast, with modelled economic analysis of the contribution of students from outside Belfast to the economy. This will enable better assessment and forecasting of the implications of different future student number and university development scenarios for the Belfast economy and its planning needs.

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[1] For the full masterplan and related developments, see < http://www.belfastcity.gov.uk/business/developmentplans/belfastmasterplan.aspx

[2] Belfast Integrated Economic Strategy, Stage 1 Economic and Policy Synopsis, Belfast City Council & Invest NI (2013)

[3] *Graduating to success: a higher education strategy for Northern Ireland* DELNI 2012 http://dera.ioe.ac.uk/14162/

[4] Following on from recommendations in the Holyland Strategic Study. Research conducted as part of the ESRC *Impact of HEIs on Regional Economies Initiative* (Munro et al) also analysed the impact of students within the local economy , with the Holyland as one of the case study areas (alongside student areas in other cities including Cardiff and Nottingham.) See: http://www.impact-hei.ac.uk/Projects/Studentsascatalysts.aspx)

The report's primary aim was to assess the economic impact of students on Belfast; however in the course of the analysis the impact of Northern Ireland's higher education institutions - in terms of the jobs, output and GVA generated by the institutions - was also modelled. The results for the institutional analyses are also included. This report is divided into 6 main sections.

- Section One highlights some of the key ways in which higher education makes a social and economic impact and how these can be assessed.
- Section Two presents the results of the analysis of the impact of Northern Ireland Institutions on Northern Ireland as a whole, as well as impact accruing further afield in the rest of the UK.
- Section Three focuses on the additional economic impact on Northern Ireland as a whole of students from outside Northern Ireland studying at NI institutions.
- Section Four presents analysis of the economic impact of higher education on Belfast including the share of Northern Ireland economic impact that was likely to have accrued to Belfast.
- Section Five provides per capita analysis of the impact of four different student domicile types:
    a) Students from non-EU countries studying in Belfast
    b) Students from the rest of the EU studying in Belfast
    c) Students from the rest of the UK studying in Belfast
    d) Northern Ireland students from outside Belfast studying in Belfast
- Section Six provides an overall summary and conclusions.

There are also a set of appendices. Appendix One provides additional information on the student population and the student housing situation in other cities in the UK. Appendix Two gives details on the methodology, model and other data sources used in this study, with Appendix Three containing the Bibliography and References for the study.

1. Higher Education and the economy

The role that higher education plays in the economy is a matter of growing interest across the UK and internationally. Universities and Colleges can bring many benefits to their host regions and cities. They provide educational opportunities, are a source of research and innovation support, can work with local and regional businesses as well as playing an important role in civic society. Universities also operate globally and their international connections can provide a link for their regions with the wider world. The main ways in which higher education is considered to play a role in the economy include:

> (1)The impact of higher education institutions(HEIs) as businesses, and the higher education sector as an industry, generating economic activity, creating jobs attracting export earnings, generating output and contributing to GDP.
>
> The importance of the HEIs in Belfast as large enterprises was highlighted in the 2013 report *The Impact of Anchor Institutions in Belfast* (CLES 2013) which identified the HEIs as among the key 'anchor institutions' in the Belfast economy. Universities are classic examples of 'anchor institutions' since they typically do not move or relocate to another region or another country but are usually intrinsically linked to, and historically rooted in, their host location and thus can be core 'anchors' in the economy. A further advantage of universities as part of a city or region's 'core' economy is that they tend to be countercyclical – while they may not grow as fast as other enterprises during a boom time they also tend to remain stable or contract less than other enterprises in times of recession, hence providing stability in the local economy.

This aspect of universities as enterprises in themselves, generating economic activity, creating jobs and output in other industries and contributing to GDP is the focus of this report. However there are other, additional aspects to higher education's role in the economy which – while not under analysis in this report – should be acknowledged as important and which have been the subject of other studies. These are:

(2) Higher Education increasing the skills base and 'absorptive capacity'[5] of the economy through attracting students to a region and helping a region retain its graduates.

(3)Research and knowledge exchange generating benefits for the host economy through flows of knowledge to business and others, helping to stimulate innovation.

These wider aspects of the Belfast HEIs have also been explored in the 2013 CLES 'Anchor institutions' report which highlighted a number of examples of how the universities are working with business and other public and private organisations to maximise the impact of the universities. This includes building collaborative partnerships to encourage innovation and attract inward investment. Partnership examples include Queens University working with the Belfast Health and Social Care Trust in medical research areas or the University of Ulster collaborating with Bombardier on advanced manufacturing research and development. The QUB Science shop[6] , where students undertake focussed projects working with local businesses, is also very good example of a university knowledge exchange initiative which both increases the skills and experience of its students and graduates while at the same time sharing its knowledge and expertise with the wider community.

Another 'anchor' aspect of Universities in their city and region reflects their key importance as civic institutions, providing both leadership and 'public space' for debate and discussion and cultural exchange. The University of Ulster's cultural engagement activities – such as its work with local community groups for Belfast's 'Culture Night'[7] - reflects the University as part of the community. Sometimes 'wider benefits' arise from focussed community and public engagement activities; at other times impact can be a result of short and long term 'accidental', or 'side effects 'or ('Externalities') arising from universities' actions and by their simple existence as important societal or civic institutions ('intangibles' such as political stability or cultural and environmental benefits come into this category.)

Most of the 'externalities' associated with universities tend to be positive, with the one exception of the impact of 'congestion', in particular where there are large numbers of

[5] 'Absorptive capacity' refers to the ability of the economy – through the skills of its workforce- to adapt and innovate- taking on board new ideas, new technology etc.

[6] See the Science Shop website for full details of their projects and programmes https://www.qub.ac.uk/sites/ScienceShop/

[7] See: http://www.ulster.ac.uk/annualreview/2012/research/creativity/culture_night/

students focussed in relatively small geographical areas. The rapid expansion of student numbers in cities across the UK throughout the 1990s and early 2000s led to pressure on housing and amenities in a number of UK cities. While higher education policy encouraged the expansion of student numbers, there was little or no corresponding local planning to manage the housing and facilities needed, leading to unplanned 'studentification' of many areas and negative impacts on local communities.[8] This has led to the broader economic stimulus provided by students sometimes being overlooked. Most UK cities with large student populations now either have or in the process of developing, plans for the management and better provision of student housing and facilities – with Councils working in collaboration with higher education institutions and local economic development agencies and partnerships. With more proactive management to mitigate the negative effects of congestion, the importance of students as 'catalysts' for local economic development has begun to attract attention once more.

2. The economic impact of NI higher education institutions on Northern Ireland

There are five Northern Irish Institutions included in this part of the analysis, the four institutions for which data is collected by the Higher Education Statistics Agency (HESA) plus Belfast Metropolitan College, which has a mix of further and higher education provision. All five institutions will be described collectively as higher education institutions (HEIs) in this report. The institutions included:

- Belfast Metropolitan College
- The Queen's University of Belfast
- St Mary's University College
- Stranmillis University College
- University of Ulster

For the institutional analysis we sourced institutional income and expenditure data from HESA and combined this with the financial accounts data supplied to us directly by Belfast Metropolitan College. The most recent published data available from HESA was

[8] Munro, M., Turok, I., and Livingston, M. (2009) *Students in Cities: A Preliminary Analysis of their Patterns and Effects.* Environment and Planning A, 41 (8). pp. 1805-1825. ISSN 0308-518X (doi:10.1068/a41133)

for the academic and financial year 2011-2012 and therefore this was the 'snapshot' year that was analysed. [9]

This part of the analysis used a two-stage approach to the estimation of the economic impact of Northern Ireland Higher Education. The impact of the Northern Irish HEIs 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 Northern Ireland higher education institutional impact on the UK likely to have accrued to Northern Ireland.

The model used was a 'Type II' input-output model based on data derived from the UK Input-Output tables and related Office of National Statistics data. The model had been specifically designed to analyse higher education impact and was updated in 2013 to undertake a UK wide study of higher education for Universities UK along with studies of the nine regions of England.[10] It has also been used for a study of higher education in Wales[11] as well as studies of individual institutions. Further details are available in Appendix Two.

[9] The financial data included for Belfast Metropolitan College refers to all of their income and expenditure. It may be noted that as Belfast Metropolitan College has a mix of further and higher education provision, not all of their income or expenditure will be associated exclusively with higher education. Approximately 31% of Belfast Met fulltime students are higher education students and around 8% of part-time students are higher education students. (Annual Report 2011/12.) It was not possible within this study to identify and apportion expenditure exclusively devoted to higher education. Belfast Metropolitan income and expenditure makes up around 12% of the total for the 5 institutions. If it is assumed that around 1/3rd of their expenditure relates to higher education (reflecting the higher education student component), then on a broad basis around 8% of the institutional impact shown here could possibly be associated with the further education component of Belfast Metropolitan College rather than exclusively higher education.

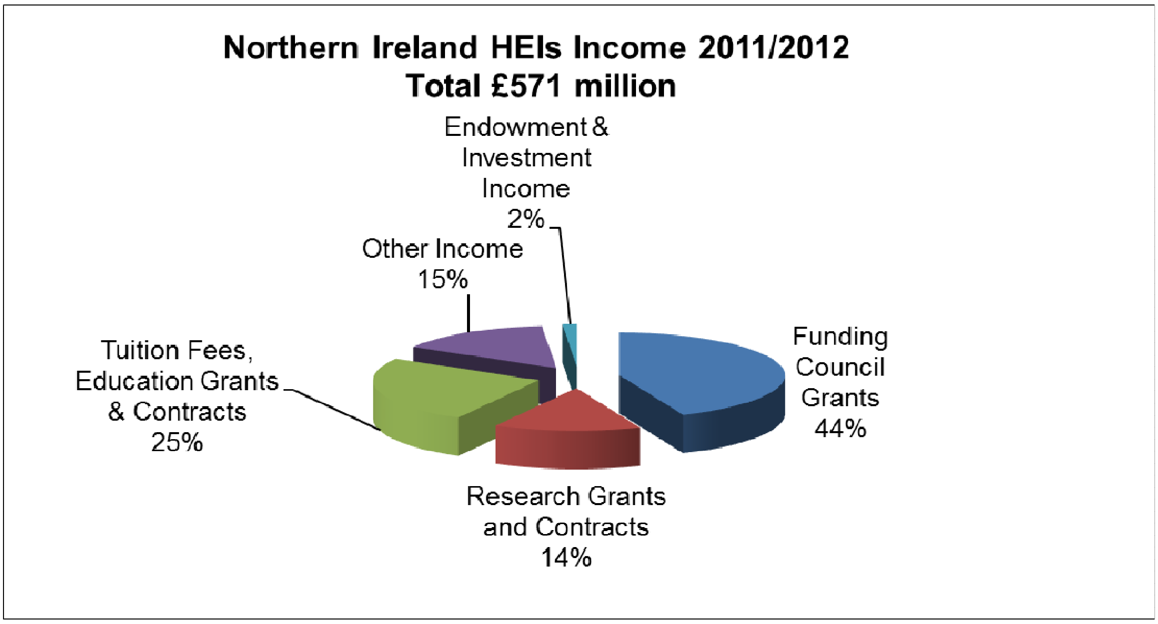
[10] The economic impact of UK higher education institutions (Fifth report) and The economic impact of higher education institutions in the English Regions , Universities UK (Both Forthcoming , April 2014) http://www.universitiesuk.ac.uk/events/Pages/economic_growth.aspx?utm_source=event&utm_medium=carousel+&utm_campaign=EconomicGrowth

[11] The economic impact of higher education in Wales (HEW, Cardiff June 2013) http://www.thinkwales.ac.uk/The%20Economic%20Impact%20of%20Higher%20Education%20in%20Wales.pdf

Key Findings

- ### Institutional Revenue

Figure 1: Northern Irish higher education institutional income 2011/12

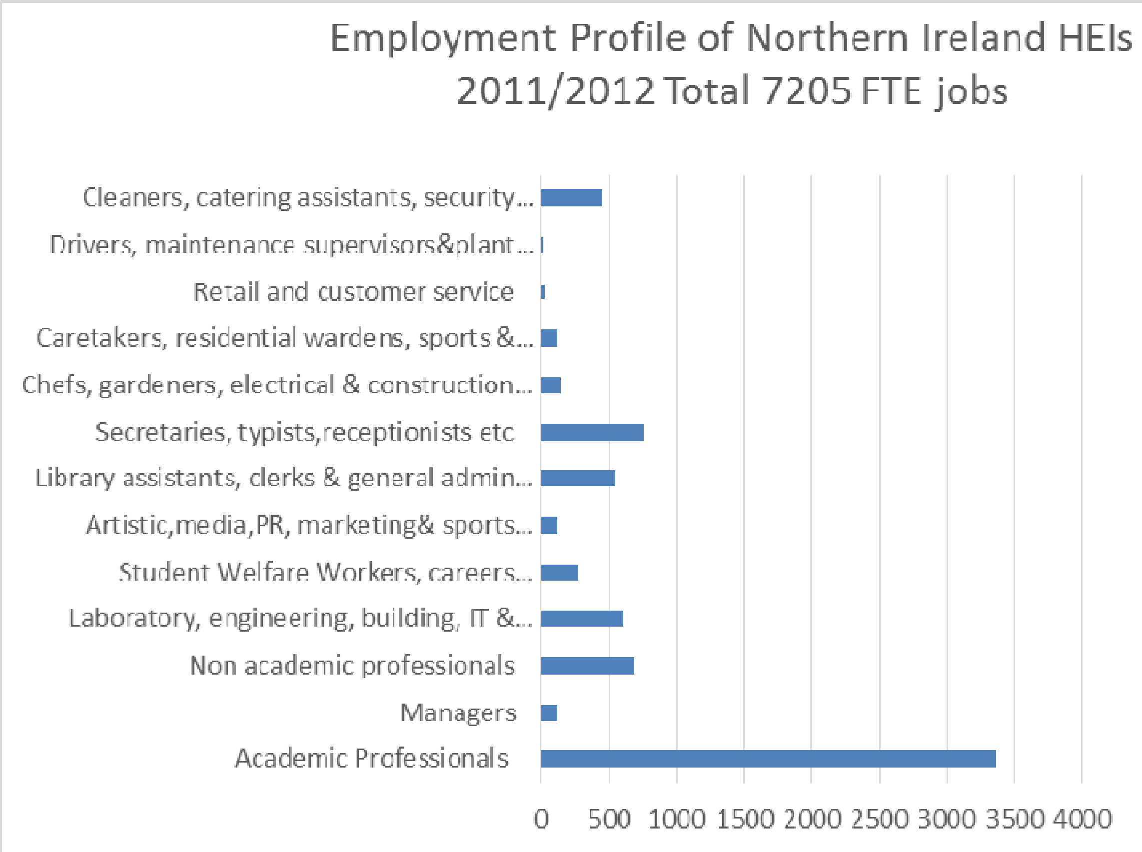


Source: HESA & Belfast Metropolitan College data for 2011/12

The majority of income received was associated with teaching and research activity (with income from Funding Council Grants (this is mainly DEL income),Tuition Fees and Research Grants and Contracts making up 83 % of the total. 15% of income was earned from the delivery of other services (e.g. consultancy or residency and catering/conference business.)

- ## Employment in the higher education institutions

Figure 2. Employment Profile



Source: HESA & Belfast Metropolitan College data for 2011/12

The NI HEIs provided 7205 full time equivalent jobs across a wide range of occupations. The occupational profile of HEI employment is shown in Figure 2. While it would be expected for the HEIs to have a high proportion of academic jobs, it is important to note that academics only make up around 47% of all HEI employment. HEIs also provide jobs across a wide range of occupation and skill levels. The HEIs have physical estates and buildings to maintain, requiring cleaners, caretakers, security wardens and gardeners. As well as libraries, laboratories and offices, the HEIs have sports and recreation facilities, catering and accommodation services. The employment profile reflects the need to support all of these different aspects of HEI activity. This makes HEIs important local employers. At 47:53, the ratio for academic: support staff in NI HEIs has a slightly greater emphasis on academic posts than the UK average, (which stood at 46:54 academic to non-academic in 2011/12) but is not significantly different.

Figure 3: Breakdown of occupational roles [12]

Staff FTE	
Academic Professionals	3364
Managers	114
Non academic professionals	691
Laboratory, engineering, building, IT & Medical technicians (inc nurses)	611
Student Welfare Workers, careers advisors, vocational training instructors etc	273
Artistic, media, PR, marketing& sports occupations	116
Library assistants, clerks & general admin assistants	541
Secretaries, typists, receptionists etc	758
Chefs, gardeners, electrical & construction etc	145
Caretakers, residential wardens, sports & leisure attendants, nursery nurses etc	109
Retail and customer service	23
Drivers, maintenance supervisors & plant operatives	7
Cleaners, catering assistants, security officers, porters etc	453
TOTAL all staff fte	7205

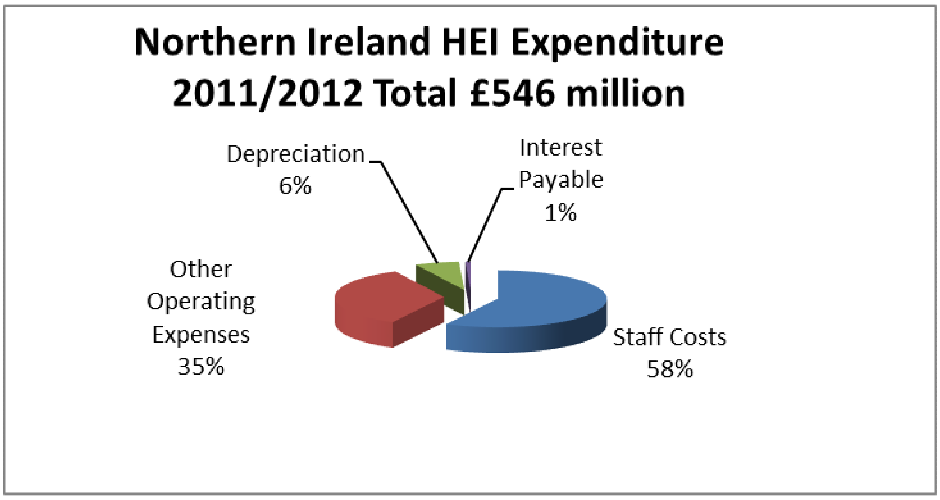
Source: HESA & Belfast Metropolitan College data for 2011/12

- ## Expenditure of higher education institutions

In 2011/12 Northern Ireland HEIs spent a total of £546 million. As a labour intensive business, the majority of expenditure related to staffing.

[12] We did not have full disaggregation of occupational employment for Belfast Metropolitan College but had total numbers for academic and support staff at the College. We assumed the pattern of employment of support staff was likely to be similar to that of the other HEIs and distributed the support staff numbers accordingly.

Figure 4 Expenditure of NI HEIs



Source: HESA & Belfast Metropolitan College data for 2011/12

The expenditure of NI higher education institutions generated economic activity in other sectors of the economy through secondary or 'knock-on' effects.

These 'knock-on' or multiplier effects are generally recognised as comprising two types of economic interaction:

- indirect effects: HEIs purchase goods and services from a range of suppliers (from books and stationery to legal services, laboratory equipment to catering supplies) in order to support their own activity, thereby stimulating activity within those industries. The suppliers also have to make purchases in order to fulfil HEI orders, and those suppliers in turn make other purchases, rippling through the economy.
- induced effects: HEIs pay wages and salaries to their employees, who in turn spend their salaries on housing, food and other consumer goods and services. This creates wage income for employees in other businesses, who also spend their income and so on, creating a ripple effect throughout the economy as a whole.

In the case of HEIs that are long established in a particular location, purchasing linkages will be highly developed within their host region (previous studies of universities in the UK have shown that universities and colleges have a relatively high propensity to spend on domestic, rather than imported, goods and services, generating greater regional economic impact than businesses that rely more heavily on imports. 13.

[13] See McNicoll, 1995 & 1997 Kelly et al 2006, 2009

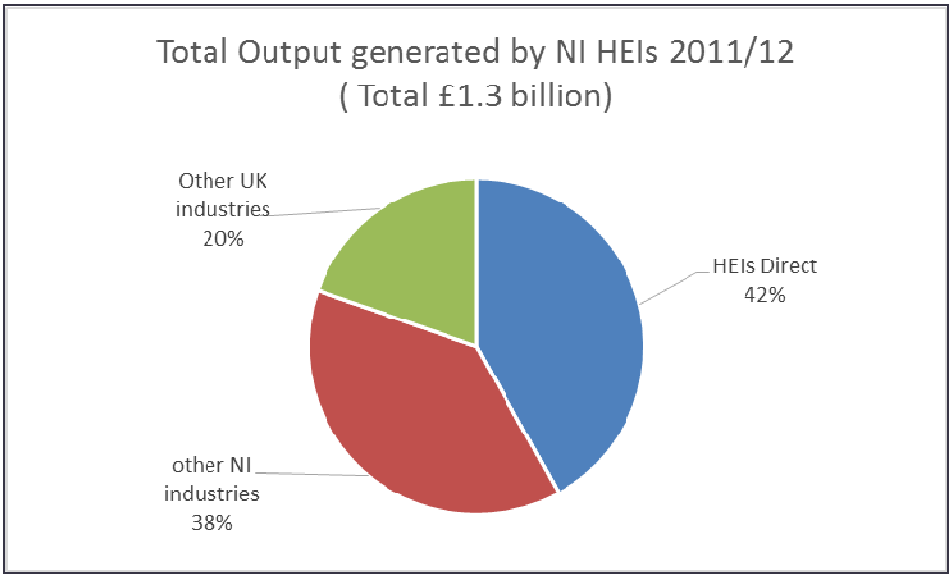
Staff expenditure tends to follow a different pattern from institutional expenditure, being more consumer oriented, but while staff expenditure will have a higher proportion of expenditure on imported consumer goods and goods from elsewhere in the UK (e.g. through online shopping), there is still an observable reliance on local goods and services – such as cafes, pubs, restaurants, fast food outlets, taxi services or personal services such as hairdressing etc. The 'snapshot' analysis of the impact of expenditure will reflect the composition of those linkages.

In this particular study, the impact of Northern Ireland HEI expenditure on the UK as a whole was modelled and then analysis made of the proportion of that impact accruing to the region. This took into account the business and industry structure of the region as well as consideration of purchases that are most likely to be more locally-based, for instance the goods and services of local pubs and coffee shops, grocery stores and personal services such as hairdressers.

• Output generated by HEI expenditure

The HEIs' own output[14] was £571 million. Through secondary or 'knock-on' effects the HEIs generated an additional £758 million in other industries across the UK, with the majority (£503 million) accruing to Northern Ireland industries.

Figure 5 Total Output generated by HEI expenditure



Source: Viewforth Consulting economic modelling system analysis

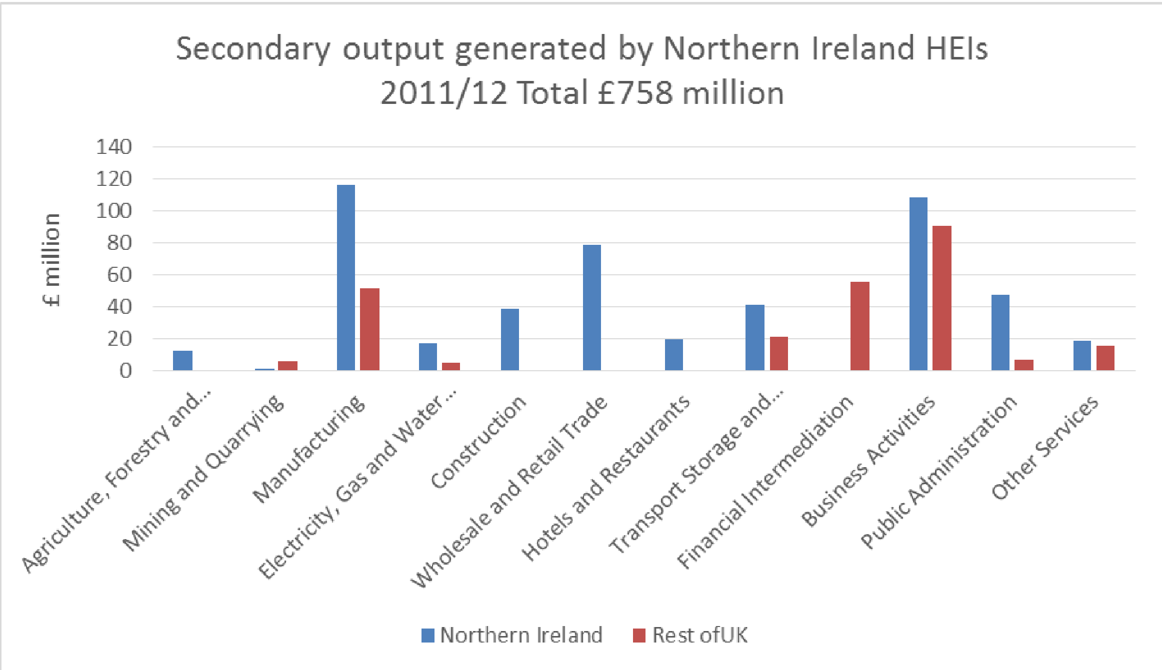
[14] The HEIs' output is equivalent to their income or 'turnover'.

-Output multipliers

This gives a regional output multiplier of 1.88 (with a UK output multiplier of 2.33.) In other words, for every £1 million of HEI expenditure, a further £1.33 million of output is generated in other UK Industries, of which £0.88 million is in industries located in Northern Ireland.

Figure 6 shows the industries in which the output was generated. There is an emphasis on manufacturing, wholesale and retail, and business activities. The spread of impact is determined by the types of goods and services bought by the universities and their staff – as well as from whom they are bought. A university may buy laboratory equipment direct from a manufacturer, for instance, or through a wholesaler. They may contract for legal services from a local firm of solicitors. University staff expenditure tends to be more oriented towards consumer goods and services, many of these from local companies and shops.

Figure 6 Secondary output generated by NI HEIs



Source: Viewforth Consulting economic modelling system analysis[15]

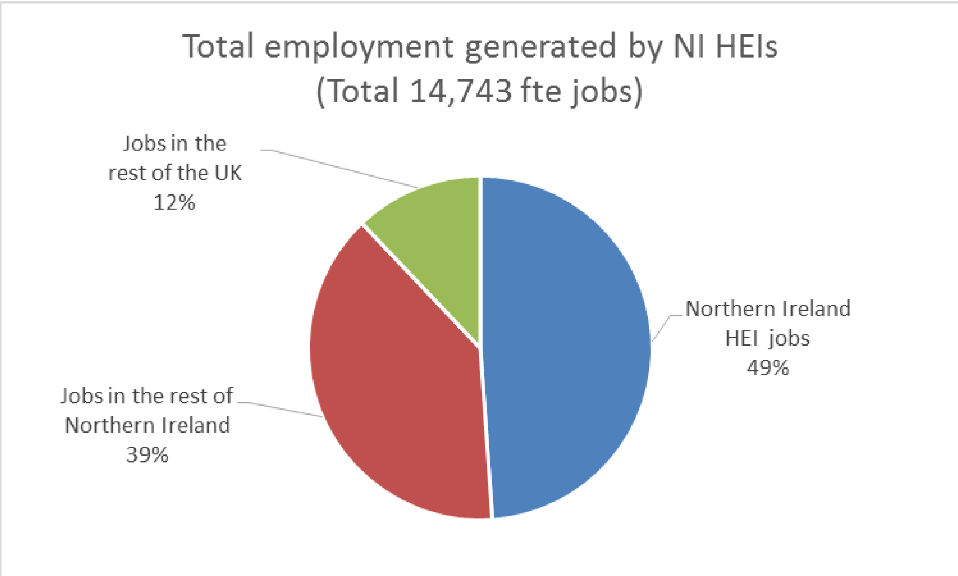
[15] The economic modelling system is currently based on SOC 2000 and SIC2003 so these were used for 1 digit presentation of results

• Employment generated

In addition to providing 7205 full time equivalent (fte) jobs directly in the higher education institutions, institutional expenditure generated additional jobs in other parts of the economy.

A further 7538 jobs were generated in other industries by the HEI expenditures, with 5756 of these located in Northern Ireland industries. Including their own employment therefore, this meant that overall 14, 743 jobs were dependent on the HEIs, 12,961 of which were in Northern Ireland.

Figure 7 Total employment generated by Northern Ireland HEIs



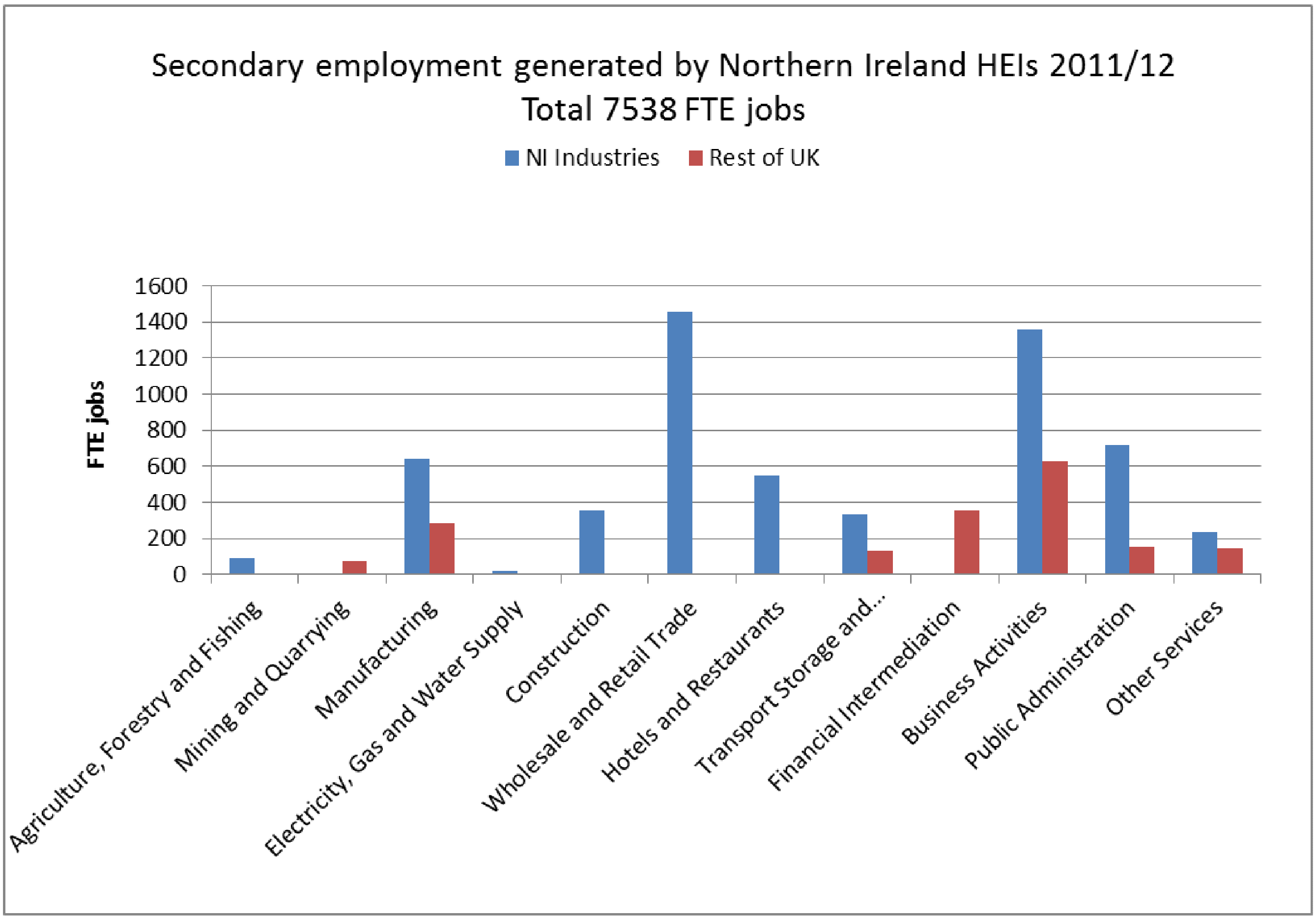
Source: Viewforth Consulting economic modelling system analysis

-Employment multipliers

The employment generated indicates an overall UK employment multiplier of 2.05 and Northern Ireland multiplier of 1.80. In other words, for every 100 jobs inside the HEIs, a further 105 jobs were created outside the HEIs in other UK industries, 80 of which were in Northern Ireland.

Employment was generated across a range of industries, this is shown in Figure 8 below. The pattern of employment impact has an emphasis on wholesale and retail, and business activities. This because of a combination of two major factors – that NI HEIs had a relatively high output impact in these areas and also that these industries tend to be relatively labour intensive.

Figure 8: Secondary employment generated by Northern Ireland HEIs

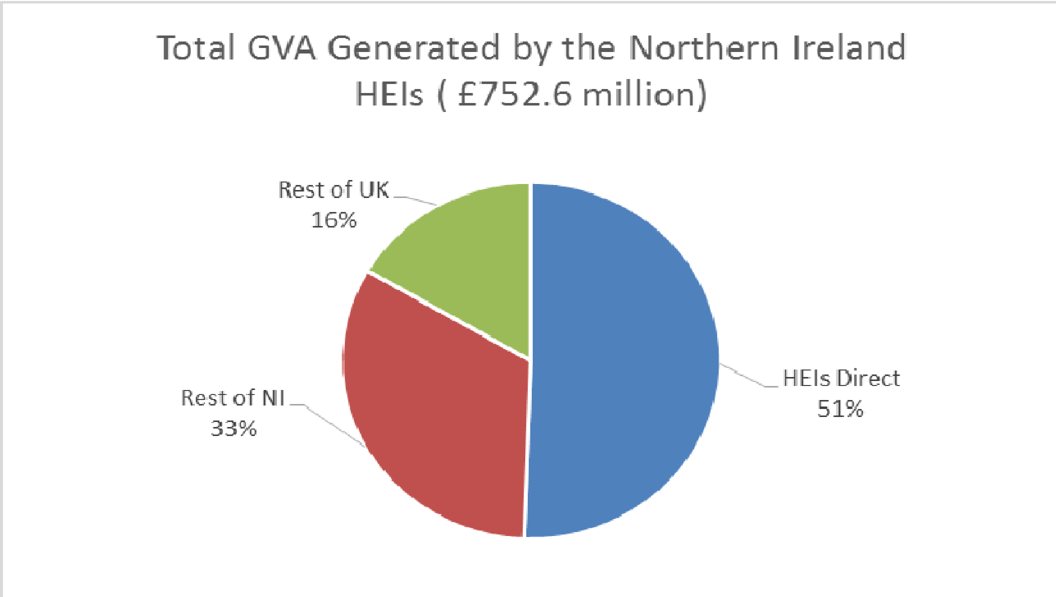


Source: Viewforth Consulting economic modelling system analysis

The importance of higher education to the Northern Ireland economy can be seen by its generation of significant levels of gross output and employment. However another key measure of the sector's contribution to the economy is the GVA generated. GVA or 'Gross Value Added' is a measure of the value created by the sector – GVA is the industry level measure of GDP (O). GDP(O) is a production measure of the net change in wealth or prosperity in the economy as a whole over the year. The sector's direct GVA amounted to £380.8 million and through secondary or 'knock-on' effects it generated a further £371.8 million of GVA in other industries across the UK, of which £247 million was in Northern Ireland.

• Total GVA generated

Figure 9 Total GVA generated by the Northern Ireland HEIs



Source: Viewforth Consulting economic modelling system analysis

Northern Ireland GVA generated by the HEIs amounted to £627.8 million (the HEIs Direct GVA of £380.8 million plus the £247 million secondary GVA in other NI industries, which was equivalent to around 2.1 % of all Northern Ireland GVA.[16]

- GVA multipliers

The GVA multipliers were calculated as a UK GVA multiplier of 1.98 and regional GVA multiplier of 1.65.

3. The additional economic impact of students from outside Northern Ireland

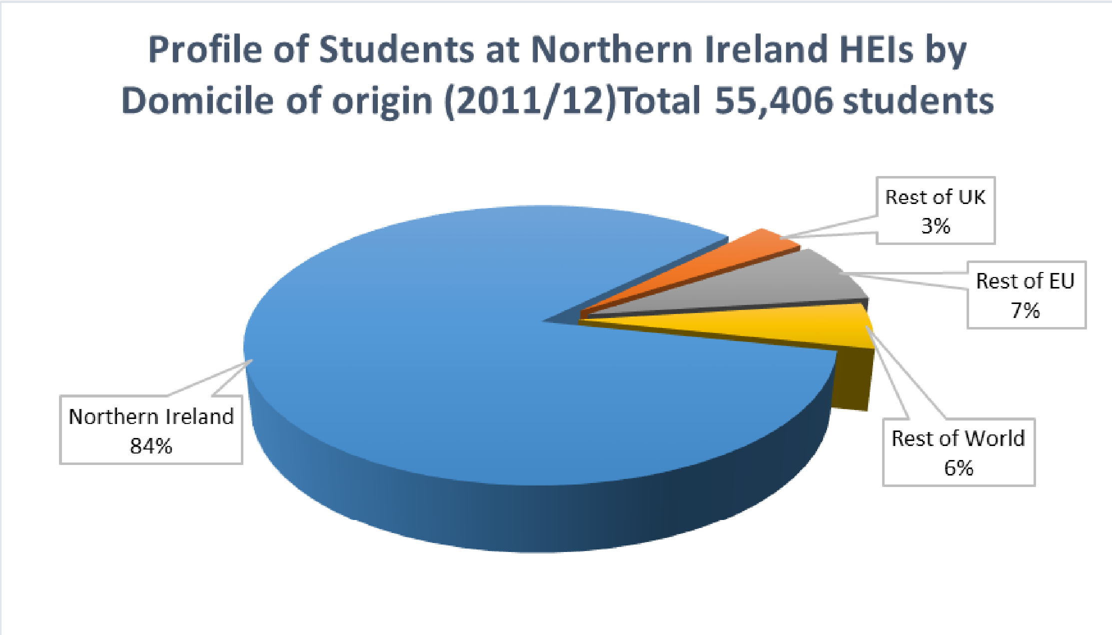
• Northern Ireland Student Profile

In 2011/12 there was a total (headcount) student HEI population in Northern Ireland of just over 55,400. [17]The vast majority of students came from Northern Ireland, with 3% from the Rest of the UK, 7% from the rest of the EU and 6% from the rest of the world.

[16] 2011 NI GVA amounted to £29.9 billion (ONS 2012)

Part of the future strategy for Northern Ireland higher education[18] is to develop its potential to attract more students from outside Northern Ireland, in particular non- EU students. At 6 % of the student population Northern Ireland has half the proportion of students from non EU countries than UK higher education as a whole - 12% of the UK student population originates from non EU countries. Just over 5 % of the UK student population as a whole is from other EU countries. In relation to 'Rest of EU' students Northern Ireland tends to attract relatively significant numbers of students from the Republic of Ireland, who make up the vast majority of the 7% of 'Rest of EU' students.

Figure 10 Profile of students at Northern Ireland HEIs



Source: HESA 2011/12 and Belfast Metropolitan College data for 2011/12

When considering the economic impact of students on Northern Ireland as a whole, this section takes into account students from outside Northern Ireland only. This is because money spent by students from outside Northern Ireland is a clear and obvious injection into the Northern Irish economy whereas the expenditure of Northern Irish students is arguably not additional to the Northern Ireland economy as a whole. (However in section (3) when we consider the economic impact of students on *Belfast*, rather than

[17] Source: HESA *Students in Higher Education 2011/12* and Belfast Metropolitan Registry figures for 2011/12

[18] *Graduating to success: a higher education strategy for Northern Ireland* DELNI 2012 http://dera.ioe.ac.uk/14162/

Northern Ireland as a whole, we will also consider the impact of Northern Ireland students from outside Belfast coming to study in Belfast.)

Student expenditure contributes to the economy in two main ways:

- Firstly students pay money to the HEIs for their fees, accommodation (where applicable) and other ancillaries (canteen/on campus catering etc.) The HEIs then respend the money, as described in section 2, and the impact of these payments by students are captured within the analysis of HEI impact.
- Secondly, students also spend money on a wide range of goods and services off-campus. The private rented sector benefits from students' need for accommodation, local supermarkets sell food and drink and local pubs and clubs frequently rely heavily on student trade. Even a casual observer will note that around any university or college (and the entire university area in Belfast is a case in point) there is a proliferation of cafes, snack bars, pubs and 'fashionable' shops that seem to draw a large proportion of their business from students. These are very tangible positive economic implications of a student presence in the city.

The on-campus expenditure is included in the HEI impact. To analyse off-campus student expenditure we drew on a number of student expenditure surveys and HEI guidance on finance and living expenses to make estimates of overall student expenditure for different types of student (Non-EU, Rest of EU, Rest of UK etc.) [19] We also took into account the (relatively sparse) supply of university-owned student accommodation in Belfast to fine-tune estimates of overall living expenditure that may have been paid to the HEIs rather than spent off-campus. We then incorporated student expenditure estimates into the model. The results for impact of off-campus student expenditure on Northern Ireland of the non-NI students is shown in Figure 11 below.

[19] For Rest of UK and Northern Ireland students we took the most recent (2004/05)Northern Ireland specific student expenditure survey to give general expenditure trends (e.g. the spending of full-time and part-time students is slightly different); we uprated the survey figures to 2011/12 using the consumer price index; we then compared the uprated results with the Department for Business, Innovation and Skills 2011/12 survey of student expenditure in England (the figures turned out to be broadly similar) and derived an average expenditure per student. For international students we referred to the Department for Business, Innovation and Skills (BIS) international-student specific expenditure estimates for 2011/12 which were made available to the study team for a forthcoming (2014) study of all UK HE. The BIS figures are the only extant estimates of international student expenditure in the UK. There is no reason to believe that international student off campus personal and living expenditure patterns would be substantially different in Northern Ireland to the UK average and we felt these were likely to be the most reliable estimates.

- ### Impact of non-NI student off-campus expenditure

Figure 11 Additional economic impact on Northern Ireland of the off-campus expenditure of students from outside Northern Ireland.[20]

	Student Numbers 2011/12	Estimated Expenditure off Campus	Output generated in NI by off-campus expenditure	Employment Generated in NI by off-campus expenditure	GVA Generated in NI by off-campus expenditure	GVA generated in NI per capita (per student) by their off-campus expenditure
Students from outside EU	2955	£36.9 million	£38.3 million	389 jobs	£18.49 million	£6257
Students from the rest of the EU	3937	£49.2 million	£51.0 million output	518 jobs	£24.63 million	£6257
Students from the rest of the UK	1823	£24.7 million	£25.7 million	261 jobs	£12.42 million	£6813
TOTALS	8715	£110.8 million	£115 million	1168 fte jobs	£55.54 million	£6373

Source: Viewforth Consulting economic modelling system analysis

[20] As this relates to the off-campus expenditure of students the total amounts and the per capita figures do not include the impact generated by their fee or other payments to the universities as that is included in the university impact. When we separately make estimates of per capita impact on Belfast (in Section 5) we analyse the complete per capita impact of different categories of student , taking into account monies paid to the universities and spent in the economy through the university. We do this in section 5 for the purpose of providing per capita estimates for inclusion in future modelling scenarios about increases in student numbers and the totality of impact generated as a result. So the per capita impact here and the per capita impacts in Section 5 are not directly comparable.

- Combined economic impact of higher education institutions and Non NI students

The combined economic impact on Northern Ireland of the HEIs (direct and secondary) and the off-campus expenditure of non-NI students studying at Northern Irish higher education institutions is shown in Figure 12.

Figure 12 Combined impact of HEI expenditure and non-NI student off campus expenditure on the Northern Ireland economy.

	Output	Employment	GVA
HEIs	£1074 million	12,961 fte jobs	£627.8 million
Non-NI students	£115 million	1,168 fte jobs	£55.5 million
Total	£1189million	14,129 fte jobs	£ 683.3 million

Source: Viewforth Consulting economic modelling system analysis

These results show that Northern Ireland higher education makes a significant impact on the economy generating a total of £1.16 billion of output in Northern Ireland, generating 14,129 fte jobs and contributing £683 million to NI GVA.

14.129 fte jobs is equivalent to nearly 2% of 2012 Northern Ireland employment[21] and £683.3 million GVA makes up 2.3 % of 2011 NI GVA.[22]

4. Economic impact of higher education on Belfast

To consider the economic impact of higher education on Belfast, in particular the impact of students and student expenditure, further analysis needs to be undertaken. This is to:

(a) Make an adjustment to reflect non-Belfast HEI activity.

(b) Adjust the previous analysis and results for the impact of higher education on Northern Ireland as a whole in order to estimate the proportion of impact that is likely to accrue to Belfast.

[21] BRES for 2012

[22] ONS 2012

(c) To include the additional impact of students from the rest of Northern Ireland outside Belfast who come to study in the city.

These adjustments are explained below.

(a) Adjustment to reflect non-Belfast HEI activity. All of the Northern Ireland institutions included in this study have a presence in Belfast. However the University of Ulster also has campuses outside Belfast, with the Coleraine and Magee Campuses. In order to reflect that a proportion of the University's activity takes place in other parts of Northern Ireland (with a proportion of impact accruing in those locations rather than in Belfast), [23] we separately modelled the impact of the University of Ulster on Northern Ireland as a whole and allocated a proportion of its impact (57%) to the analysis for Belfast on the basis of student numbers. [24]

(b) Estimates were made of the share of Northern Ireland impact that was likely to accrue to Belfast. This took into account consideration of the types of goods and services that are likely to be locally purchased together with analysis of the industry/employment structure in Belfast (where Belfast was specialised in particular types of industries, it was assumed that the demand for those industries' goods were satisfied from within the Belfast area.)

The overall results for the higher education institutional impact on Belfast are shown in Figure 13.

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[23] For practical reasons the University of Ulster Jordanstown campus is included as part of Belfast impact. It was not possible from the data and within the resources available to separate out the impact of students studying in Jordanstown from those in Belfast itself. The University of Ulster also plans to move much of its provision from Jordanstown into Belfast Centre in the near future.

[24] The geographical economic impact of the university is of course determined by more than just the student numbers involved, but also by where University staff live and spend, where the University sources its supplies etc. However it was beyond the resources available for this study to undertake extensive sub-regional modelling. Given the predominance of Belfast in the NI economy ,using student numbers as a proxy indicator will almost certainly underestimate the share of University of Ulster impact accruing to Belfast. However the included impact can then be taken as a firm minimum.

Figure 13 Impact of Higher Education Institutions on Belfast

Total HEI impact on Belfast			
	Output	**Jobs**	**GVA**
HEI direct	£485 million	6019 fte jobs	£321 million
Secondary or 'knock-on'	£368 million	4525 fte jobs	£187 million
Total	**£853 million**	**10,544 fte jobs**	**£508 million**

Source: Viewforth Consulting economic modelling system analysis

(c) Additional impact of student expenditure on the City

The off-campus expenditure impact of international students and students from the rest of the UK on Northern Ireland was also adjusted to reflect the proportion likely to be accruing to Belfast. [25] When considering the impact of student expenditure on the city, as well as the impact of international students and students from the rest of the UK, we also take account of the expenditure of students from other parts of Northern Ireland outside Belfast who come to study in the city.

In 2011/2012 there were 24,682[26] NI students from outside Belfast studying in Belfast. Just as with international students and RUK students, NI students pay money to the HEIs for fees and accommodation (where applicable) as well as spending money off campus. Estimates of student off campus expenditure were made[27] , taking into account the relatively sparse student accommodation available and the propensity for NI students to live off-campus. The modelled results from impact for Rest of NI students on Belfast can be added to the results for the impact of UK and international students on Belfast. The results are shown in Table 14 below.

[25] It was assumed that all of the students from outside Northern Ireland were based in Belfast.
[26] Based on HESA data for local authority of student domicile combined with information supplied by Belfast Metropolitan College Registry
[27] For Rest of UK and Northern Ireland students we took the most recent (2004/05)Northern Ireland specific student expenditure survey to give general expenditure trends (e.g. the spending of full-time and part-time students is slightly different); we uprated the survey figures to 2011/12 using the consumer price index; we then compared the uprated results with the Department for Business, Innovation and Skills 2011/12 survey of student expenditure in England (the figures turned out to be broadly similar) and derived an average expenditure per student.

Table 14 Impact on Belfast of the off campus expenditure of students from outside Belfast

	Student Numbers	Output	Jobs generated	GVA generated
Students from the Rest of NI	24682	£285.3 million	3125 fte jobs	£142.7 million
Students from Rest of UK	1823	£22.2 million	243 fte jobs	£11.1 million
Students from Rest of EU	3937	£44 million	482 fte jobs	£22 million
Students from Rest of World (Non-EU)	2955	£33 million	362 fte jobs	£16.52 million
TOTAL	**33397**	**£384.5 million**	**4212 fte jobs**	**£192.32 million**

Source: Viewforth Consulting economic modelling system analysis

Table 15 gives a summary of the impact of the HEIs combined with the student impact on Belfast.

Table 15 Combined economic impact of the HEIs and students on Belfast

	Output generated	Jobs generated	GVA generated
HEI direct	£485 million	6019 fte jobs	£321 million
Secondary or 'knock-on'	£368 million	4525 fte jobs	£187 million
Students from the Rest of NI	£285.3 million	3125 fte jobs	£142.7 million
Students from Rest of UK	£22.2 million	243 fte jobs	£11.1 million
Students from Rest of EU	£44 million	482 fte jobs	£22 million
Students from Rest of World (Non-EU)	£33 million	362 fte jobs	£16.52 million
Total	£1237.5 million	14,756 fte jobs	£700 .3 million

Source: Viewforth Consulting economic modelling system analysis

5. Per Capita student impact

One of the aims of this study was to develop per capita estimates of expenditure impact on Belfast for the four different groups of non-Belfast students:

- Students from Northern Ireland outside Belfast
- Students from the rest of the UK
- Students from the rest of the EU
- Students from the rest of the World

In order to do this we took account not only of student off-campus expenditure (the total impact of which is explained in the preceding section) but the share of HEI impact generated by the student payments to HEIs.

The share of university impact was estimated for each group of students taking into account the characteristics of that group, average fee paid and the likelihood of their staying in university accommodation (for instance it was assumed that most non-NI students would stay in student accommodation for the first year, with students from other parts of Northern Ireland taking up the remaining available accommodation.)

This enabled a per capita figure for impact on the Northern Ireland economy to be derived. The Northern Ireland per capita impact was then adjusted downwards, using the same approach as previously used in estimating overall impact to reflect the share of impact likely to accrue to Belfast. The results are shown in Table 16.

Table 16 Per capita impact of non-Belfast students on the Belfast economy

Average per capita [28]expenditure including fees and other payments to the Universities		Average per Capita Output generated	Average per Capita Jobs generated	Average per Capita GVA generated	
£17,804	Non-EU students	£21,081	0.22 fte jobs	£10,704	
£14,696	Rest of Eu students	£15,802	0.16 fte jobs	£7,749	
£14,894	Rest of UK students	£15,365	0.15 fte jobs	£7, 376	
£15,397	Rest of NI students	£17,573	0.18 fte jobs	£8,394	

Source: Viewforth Consulting economic modelling system analysis

The different averages for different groups of students largely reflects different levels of fee payments to the universities rather than any major difference in off campus expenditure. These averages were based on the characteristics of the student cohort in 2011/12. For instance in terms of students from the rest of the UK there was an emphasis on part-time postgraduate students who both paid less in fees and spent slightly more off campus than other groups.[29]

The overall payments made to the universities by non-EU students was relatively low compared to the average payments at UK level (for instance similar estimates made by the team for non-EU students for the UK as a whole came up with an average expenditure of £23,692 - with payments to the universities comprising around half that.)

[28] This is head count and not fte.

[29] In 2011/12 the undergraduate domestic fees were pegged at 'up to £3,375'. The year under analysis was the year preceding the increase in fees for English undergraduates to the much higher £9000. Part time postgraduate fees are more variable and frequently lower.

This means that at present the overall economic impact of non-EU students is not as large as in other parts of the UK, since fees and other payments to the universities tend to generate more economic impact per £ than student off-campus expenditure (because of the lower propensity for universities to spend on imported goods.) It was beyond the resources of the study to consider the reason for the difference in relation to non-EU students in depth. However it may be noted that the total fees paid by non-EU students and incorporated into the overall per capita estimates was based on published HESA data and was not an estimate. From information available on the two main university webpages, the published fees for non-EU students are not significantly different from other UK universities.

However it is possible that the underlying characteristics of the 2011/12 cohort of non-EU students was different from elsewhere in the UK – for instance if there was a preponderance of one semester 'junior year abroad' students, then the annual snapshot per capita for students could be affected. Nonetheless , non-EU students continue to spend more and generate more economic impact on Belfast than other groups of students.

6. Summary and Conclusions

The 'Graduating to Success: A strategy for higher education in Northern Ireland' identifies a need for the HE sector to increase its international profile attracting more international students to Northern Ireland and to increase accessibility to higher education across NI. The *Belfast: Learning City – Holyland and Wider University Area Strategic study*, and the recent consultation on the draft review of the *Belfast City Masterplan 2013-2020* both articulate the aspiration for Belfast to develop as a 'Learning City', and a destination of choice for students from across NI and beyond. The City Council and the Universities are also committed to the development of a safe and pleasant environment for all students and city residents and to better integrating the student population into the city. This study has highlighted the significant economic benefits arising for Belfast from its position of being the major centre of higher education for all Northern Ireland, including its attraction of significant numbers of students from outside the city. It has shown that higher education is an important part of the Northern Ireland economy and a vital part of the Belfast economy. The combined impact of the HEIs and students from outside the city generates nearly 15,000 jobs in Belfast, which is around 7% of city employment. To put this into context of another city where HE is regarded as a very important industry, broadly comparable activity (i.e. the University plus the spending of students from outside the Northwest) of the University of Manchester (which, with a turnover of £807 million is more than 30% bigger than NI HEI's total £570 million) generated just under 5.7% of city employment[30] – and this was seen as very important for the city.

It should be highlighted that the while the positive economic impact of students on Belfast is significant, it will be lessened by the degree to which non-Belfast students are obliged to commute to the city rather than being able to stay there, since staying outside the city will naturally lead to at least a proportion of student spending elsewhere. Increased availability of quality student accommodation with appropriate amenities is likely to attract more students to stay in the city and would maximise the economic benefits to the City.

In relation to students from outside Northern Ireland , Northern Ireland is starting from a lower base than other UK universities in seeking to attract more students from outside the region, not because of any inherent failings in the quality of educational provision but because of the legacy of the Troubles and historical perceptions of Northern Ireland. All UK universities are seeking to increase their numbers of non-EU students. The higher tuition fee requirements in English universities is also driving fierce competition among English universities in particular to attract domestic students. Hence for Northern Ireland to compete successfully in external (non-NI) markets, the creation, maintenance and promotion of Belfast as an attractive, vibrant and safe place to live and study is of vital importance. The provision of purpose-designed student accommodation has to come into that picture – for international students in particular the availability of university accommodation is an important factor in choosing where they study.[31] Indeed numerous English Universities are currently exploring new partnerships with private sector providers to expand the provision of quality student accommodation.

This report has shown that higher education is an important part of the Northern Ireland economy – and in particular, since most higher education provision is located in Belfast, it is a core part of the Belfast economy. The employment generated by the HEIs and students from outside Northern Ireland is equivalent to around 2 % of all Northern Ireland

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[30] Measuring the difference: The economic and social impact of the University of Manchester http://www.socialresponsibility.manchester.ac.uk/includes/uploads/Impact_Report_1OCT.pdf

[31] See, for example, http://monitor.icef.com/2013/09/how-much-influence-does-accommodation-have-on-student-recruitment/

employment - which is broadly in line with similar studies of the impact of higher education on English regions. Where Belfast is a little different is that it is the chief location for higher education in Northern Ireland (unlike in other UK regions where HE provision is typically spread over a number of towns and cities). Hence its impact on the city economy is relatively high compared to higher education in other cities (with the employment generated by the institutions and the spending of students from outside Belfast making up nearly 7% of Belfast employment.) Higher education is a major asset to Belfast, with the potential to provide a very strong focus and identity for the city as a 'Learning City'.

7. Appendices

Appendix One: Student Populations and Student Housing in other UK cities

Student populations and student housing in other UK cities

Students are important to city economies, creating jobs and generating output. The presence of a significant student population and 'university areas' can also attract other inward migration to the city to boost the urban economy – (Richard Florida's 'Creative Class.')[32] Some of the many benefits to having a city student population were identified in a 2006 Universities publication *'Studentification': a guide to opportunities, challenges and practice*. These are reproduced below.

Student Populations- Positive Effects			
Social	Cultural	Physical	Economic
Student volunteering makes an important contribution to many aspects of social life Student housing needs prevent serious depopulation in many inner-city areas Increases the range of goods, services and attractions available to the town/city's	Create a critical mass and demand for diverse range of cultural events Enhances reputation of city/town as vibrant, dynamic location and as an attractive destinationfor eg, night-clubbing,evening economy, ortourism Creates an international/ cosmopolitan feel/outlook	Higher/rising property prices provide a level of incentive for upgrading properties which might otherwise remain empty, languish in a neglected state or be generally unfit for habitation Many older properties receive considerable investment by private landlords which extends their life	High demand for student housing and the stimulus to private rented sector leads torising house prices Growth in buy-to-let market and private investment opportunities Students constitute a flexible part-time labour force undertaking seasonal employment Student presence can help stimulate urban regeneration Goods purchased locally by students make a significant contribution to the local economy

- [32] **Cities and the Creative Class**; Richard Florida; Routledge; 2004

population A critical mass of students can ensure transport links to the benefit of the whole community Student communities can also support nurseries and multi faithcentres		The existence of largenumbers of young people help to make city centres attractive to social and retail spaces Changes in type of retail and entertainment services available – e.g. local shops becoming cafes, bookshops, live music venues	Student presence ensures the viability of some retail businesses Repairs, renovations and extensions to student properties benefits the construction and service sector of the economy Availability of a graduate workforce

Source: From '*Studentification*'*: a guide to opportunities, challenges and practice* Universities UK 2006[33]

However the rapid expansion of student numbers over the last 2 decades has also led to a range of negative side effects or 'externalities' to the presence of a large student population, in particular in relation to pressures on housing, local amenities and other environmental impacts. This has been apparent in Belfast, where there is a large student population but relatively little purpose-designed student accommodation. Other major cities such as Nottingham, Leeds and Manchester have all faced challenges in relation to managing the impact of an expanding student population. These cities have developed or are developing policies and initiatives in order to address the issues. Case studies referencing such approaches and the Belfast context for addressing these issues have been considered in the '*Belfast: A Learning City; Holyland and Wider University Area Strategic Study Report*', Louise Browne Associates, 2012 and in the development of a *Framework for Student Housing and Purpose Built Student Accommodation* by Belfast City Council and other statutory agencies represented on the Student Housing Joint Team (DSD, DOE, NIHE, SIB).

Student Population relative to Resident Population

Using figures from the Office for National Statistics and HESA we can compare the relative proportion of students in different cities. When compared to eleven other University cities, Belfast ranked 4th with its students making up 15.4% of the city's total population.

[33] http://www.universitiesuk.ac.uk/highereducation/Documents/2006/StudentificationGuide.pdf

Students as a percentage of the resident population in other major UK cities

City	Resident Population	Student Population	Student population as a % of resident population
Nottingham	308,700*	63,560	20.6%
Newcastle	282,400	50,355	17.8%
Southampton	239,400	38,885	16.2%
Belfast	280,962	43,385**	15.4%
Manchester	510,800	75,275	14.7%
Dundee	147,800	21,515	14.6%
Leeds	474,637	64,990***	13.7%
Glasgow	595,100	79,845	13.4%
Cardiff	348,500	43,105	12.4%
Liverpool	469,700	54,805	11.7%
Edinburgh	482,600	46,760	9.7%
Sunderland	275,700	17,380	6.3%

Sources: *HESA, Office for National Statistics. Nisra*

Notes to the table:

*Nottingham greater conurbation area has a population of 790,200. The student population of this is only 8%.

**If Leeds City College were to be included then the student population would increase to 121,990 making the student population up to 25.7%.

***Belfast student numbers include only students studying in Belfast which omits University of Ulster non-Belfast students

Appendix Two: Methodology and Data Sources

The primary focus of the study was the higher education sector in Northern Ireland as an industry and the impact generated by the sector activity during the academic and financial year 2011-2012. In particular the study focussed on the expenditure of students from outside Belfast studying in Belfast and the economic impact resulting from their expenditure in order to make per capita estimates of student impact that could help inform future planning. .

The study utilised a three -stage approach to the estimation of the economic impact of the higher education sector. The impact of the higher education 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 institutional impact on the UK likely to have accrued to Northern Ireland.

Further off-model analysis was then conducted to make estimates of the share of NI impact likely to have accrued to Belfast. This analysis drew on a range of NI statistics including the 2011 census together with data from quarterly employment surveys combined with using expert judgement on purchases likely to be more 'local' in nature.

The model used was a 'Type II' input-output model based on actual UK data derived from the UK Input-Output Tables (Office of National Statistics) together with Labour Force Survey and Annual Business Inquiry data and the 2008 UK Bluebook. The modelling system has been updated in 2013 to reflect productivity increases and related economic changes. Additional data sources include the Producers' Prices Index, ONS Regional Accounts and Local Area Data from the ONS including the Business Register and Employment Survey and other regional labour market data from nomisweb.co.uk. The core modelling system is based on SOC 2000 and SIC 2003 classifications and this has been used for the 1 digit aggregate presentation of results. The modelling system used was purpose-designed for UK higher education institutions and is the most recent version of the Universities UK modelling system. The technical specification for the model is included in *The impact of universities on the UK economy* Kelly, McLellan and McNicoll Universities UK 2009.

Other data sources and issues arising

The main source of higher education data used was the Higher Education Statistics Agency (HESA) publications on HE Finance, staffing and students. This was supplemented with data provided directly by Belfast Metropolitan College on their finances, student numbers and staffing. Additional data was also provided on Belfast and Jordanstown students and campuses by the University of Ulster. In this study the impact of Jordanstown campus and students was treated as part of Belfast impact for pragmatic and data availability reasons. Within the resources available for the study trying to separate Jordanstown from Belfast would have been disproportionate - and not have added very much, if anything , to the main study purpose, which was to provide estimates of student per capita impact. Likewise the split of the impact of the University of Ulster between Belfast and its other campuses outside Belfast was allocated based on the proportion of students reported as studying in Belfast. A more detailed analysis of the split and local impacts elsewhere would require extensive data on sources of university purchases, and staff residence and travel to work patterns, which was beyond the scope or purpose of this study which was mainly focussed on students. Given the predominance of Belfast in the NI economy (tending to attract retail and leisure expenditure as well as being a probable location of many major university suppliers) allocation by student numbers alone is likely to be an underestimate of the impact of the University of Ulster on Belfast. However this means that the impact stated can be regarded as a firm minimum.

In relation to student expenditure estimates, for Rest of UK and Northern Ireland students we took the most recent (2004/05)Northern Ireland specific student expenditure survey to give general expenditure trends (e.g. the spending of full-time and part-time students is slightly different); we uprated the survey figures to 2011/12 using the consumer price index; we then compared the uprated results with the Department for Business, Innovation and Skills 2011/12 survey of student expenditure in England . The figures turned out to be remarkably similar, with the minor differences in the uprated NI expenditure figures and the recent England expenditure figures being within the same order of magnitude as the difference between the 2004/05 NI expenditure survey and the 2004/05 England expenditure survey. The final total expenditure figures for students were derived separately for each of the four groups of students of interest, reflecting the characteristics of the 2011/12 cohort of students. For instance there were a relatively high number of part-time postgraduates among the group from the rest of the UK. The per capita figure is an average across all students in each group, therefore obviously some students will spend more than others. For international students we referred to Department for Business, Innovation and Skills (BIS) international-student specific academic year expenditure estimates for 2011/12 which previously made available to the study team for a forthcoming (2014) study of all UK HE (originally prepared by BIS for the 2013 *International Education: Global Growth and Prosperity.)* . The BIS figures are the only extant estimates of international (rather than domestic) student expenditure in the UK. Hence we have assumed that international students studying in Northern Ireland will have similar expenditure patterns to international students in other parts of the UK.

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