THE ECONOMIC IMPACT of INTERNATIONAL STUDENTS in WALES

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Summary

This report presents analysis of the economic impact on Wales of International students studying at the 8 universities in Wales during the academic and financial year 2013/14. The study examines the impact of international student spending on the economy and its generation of jobs, output and Welsh GVA. The study also considers the additional spending of short term international visitors associated with international students – i.e. visiting family and friends of students. The analysis presents the impact of both EU and Non-EU students on the Welsh economy. Results are presented of the overall impact on the economy and also the per-capita impact of EU and Non-EU students. It also analyses and presents the distribution of overall economic impact across Wales.

Key findings

Overall the report shows the significant and positive economic benefit to Wales of hosting international students.

Export Earnings

- International students and their visitors spent £530 million in 2013/14. This was equivalent to 4% of all 2014 Welsh exports.

Jobs

- The spending of international students and their visitors generated over 7,600 full time equivalent jobs in Wales. While a large part of the impact was felt in the areas immediately surrounding the universities, jobs were generated right across Wales.
- One Welsh job was generated for every 3 Non-EU students in Wales.
- One Welsh job was generated by every 5 EU students in Wales.

Output

Industry output is, broadly speaking, equivalent to an Industry’s turnover or income.

- The expenditure of international students and their visitors generated £773 m of output in industries across Wales.
- Every Non-EU student generated £33k of output in Welsh industries
- Every EU student generated £19.7k of output in Welsh industries.

GVA

GVA or Gross Value Added, is a measure of the net wealth generated in the country.

- The spending of international students and their visitors generated nearly £400 million of Welsh GVA – which was equivalent to 0.8% of 2013 Welsh GVA.
- Every Non-EU student generated £17.1k of GVA in Welsh industries.
- Every EU student generated £9.8k of GVA in Welsh industries.

Regions of Wales

- The analysis showed that impact flowed across Wales including to areas that do not have a university presence.

1. Introduction

The role that Welsh Universities play in the economy is now well recognised, both in terms of their immediate economic impact creating jobs and contributing to GDP but also in the longer term contribution that teaching and research makes to strengthening the skills base and supporting innovation in Wales. When setting out its international agenda for Wales in 2015[1] The Welsh Government has also highlighted that universities can provide an additional opportunity to strengthen and extend Wales' international presence. The Universities are globally connected institutions, with research links stretching across the world. They also attract students from abroad. In 2013 the Welsh Universities attracted over 25,000 students from 145 countries to come to study in Wales. This creates potential to strengthen cultural and economic links between Wales and all of the originating countries. Active alumni networks help make such benefits a lasting phenomenon, attracting alumni back to Wales and building international links. Encouraging domestic students to develop an international outlook is also important, with Universities encouraging domestic Welsh students and staff to participate in international exchange and research collaborations.

The policy attention paid to international students is part of a broader agenda of internationalisation, which focusses not only on student mobility but also on ensuring that international perspectives become part of the normal learning processes in higher education. This has been driven by awareness on the part of universities of the need for students to learn to compete in a global economy as well as to develop broader cultural understanding. The presence of international students can be an important element in building international perspectives among domestic students as well as being mutually beneficial to both domestic and international students in building longer term cultural awareness. At a broader level, in terms of national interest, it is also increasingly acknowledged that international education, student mobility and research links are an important element in supporting the development of 'soft power' – broader and longer term international influence[2].

However while the development of longer term global links and presence is a major benefit of attracting international students, there is also a more immediate impact on the economy, which reaches right across the country.

International students have an important and immediate impact on the Welsh economy. As well as paying tuition and other fees to the universities, students spend money off-campus, for example on housing, food, travel and entertainment. They can also attract additional short stay leisure visitors from abroad (parents, relations, and friends) who spend money on

[1] *Wales in the World: The Welsh Government's International Agenda* (2015)
[2] See , for example, '*As Others see us' Culture, Attraction and Soft* Power British Council 2012 http://www.britishcouncil.org/sites/default/files/as-others-see-us-report-v3.pdf

hotel accommodation and local amenities. All of their spending creates jobs in Wales and contributes to Welsh GDP. The off-campus personal expenditure of students and visitors is equivalent to over 7% of the spending of all visitors to Wales[3]. This is the primary focus of this study. A similar study of the impact of international students in Wales was previously undertaken in 2011[4]. This study seeks to provide and up-to-date and extended analysis of the impact of international students.

Background to the study

This study was undertaken during summer 2015 for Universities Wales. It presents analysis of the economic impact on Wales of International students studying at the 8 universities in Wales in 2013/14. The study examines the impact of international student spending on the economy and its generation of jobs, output and Welsh GVA. The study also considers the additional spending of short term international visitors associated with international students – i.e. visiting family and friends of students. The analysis presents the impact of both EU and Non-EU students on the Welsh economy. Results are presented of the overall impact on the economy and also the per-capita impact of EU and Non-EU students. It also analyses and presents the distribution of overall economic impact across Wales.

Methodology and data sources

Data on numbers of international students studying at Welsh universities is taken from Higher Education Statistics Agency (HESA) publications. Data on fees and estimates of other payments made to the universities also draws on HESA[5]. Estimates of student personal off-campus expenditure drew on the most recent student expenditure surveys for both Wales and the UK. Estimates of numbers and expenditure of short-term friends and family visitors associated with international students drew on the International Passenger Survey and Travel Trends 2014 together with the Annual Population Survey (APS).

Student and visitor expenditure and its impact on the Welsh economy was modelled using a purpose designed input-out based modelling system, designed for analysis of higher education institutional and student impact. The same system has been used to model the overall impact of higher education in Wales as well as for modelling of higher education in

[3] The Welsh Government *Strategy for Tourism 2013-2020* (2013). The Welsh Tourism Satellite Account estimated visitor spending (all visitors) in Wales to be £4.5 billion in 2011.
[4] *The economic impact of International and Eu Students in Wales* Oxford Economics (2011)
[5] HESA Students in Higher Education 2013/14 and HESA Finance Plus 2013/14

other parts of the UK both at a sectoral level and of many individual universities[6]. An additional and new dimension of analysis, involving local gravity-modelling, was included in the system to enable study of the distribution of impact across Wales. A Welsh higher education 'gravity-model' was developed and used to examine how impact flows out across Wales from centres of higher education student concentration. This combined a range of mass and distance variables to allow analysis of expenditure flow. More information on the methodology and data sources is included in Appendix One. Overall this report presents an up-to-date examination of the expenditure of international students in Wales and the positive economic impact on Wales of hosting international students.

[6] See for example, The impact of Universities on the UK economy UUK (2014) , The impact of higher education institutions in England (2014) The economic impact of higher education on Northern Ireland (DELNI 2015) The economic impact of higher education in Wales HEW 2013 For more report examples see www.viewforthconsulting.co.uk

2. International students in Wales

Profile and characteristics of student population

There were 25,605 international students at Welsh universities in the year 2013/14, from 145 different countries from around the globe. 5645 students came from other EU countries (beyond the UK) and 19,660 came from outside the EU.[7]

Figure 1 presents the profile of the entire Welsh university student population, showing how international students made up 19% of the total 137,145 students.

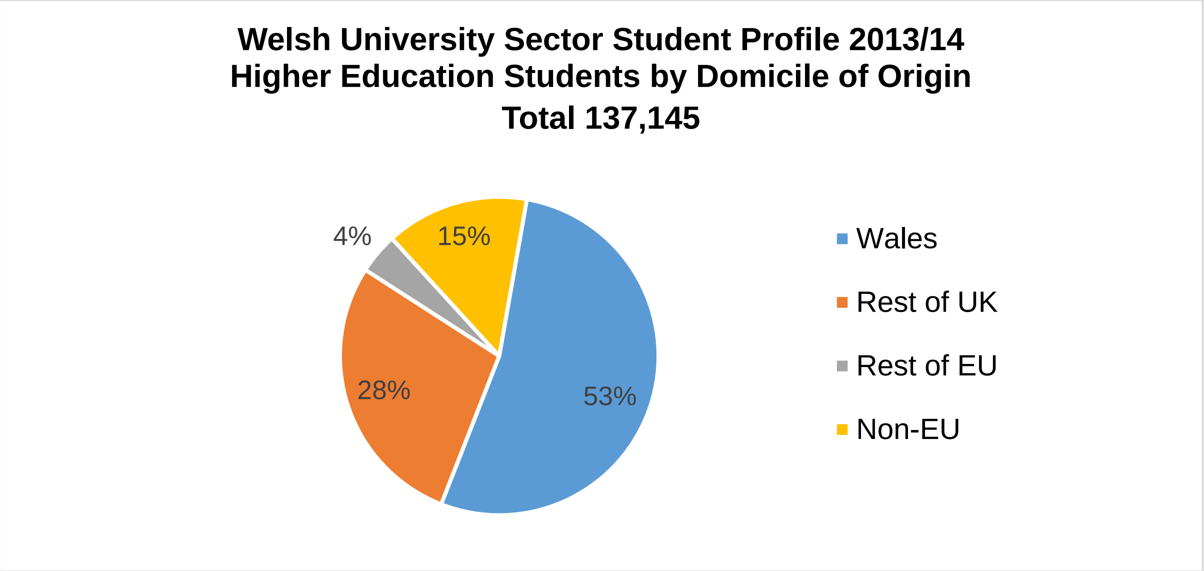

Figure 1: All Welsh university Students

Source: HESA Students in Higher Education 2013/14

The overall proportion of international students studying in Wales is similar to that in universities in other parts of the UK, with 19% of the total UK student population being international students. However there is an underlying variation with Wales doing slightly better proportionately than the UK as a whole in terms of attracting non-EU students. In the UK as whole 5% of international students are from EU countries and 14% from non-EU countries compared to the figures of 4% EU and 15% non-EU for Wales.

Figure 2 illustrates this point by comparing the composition of the international student population across the four UK nations and for the UK as a whole.

[7] The international student data only includes students registered at the 8 Universities in Wales. Any non-UK domiciled student studying at the Open University in Wales is not included, as all non-UK domiciled OU students are allocated to the main OU site in Milton Keynes. To the extent that any of the students are studying in Wales, they would also have an additional impact on Wales. The numbers involved however are small (only 300 across the UK in total) and would not significantly affect the analysis.

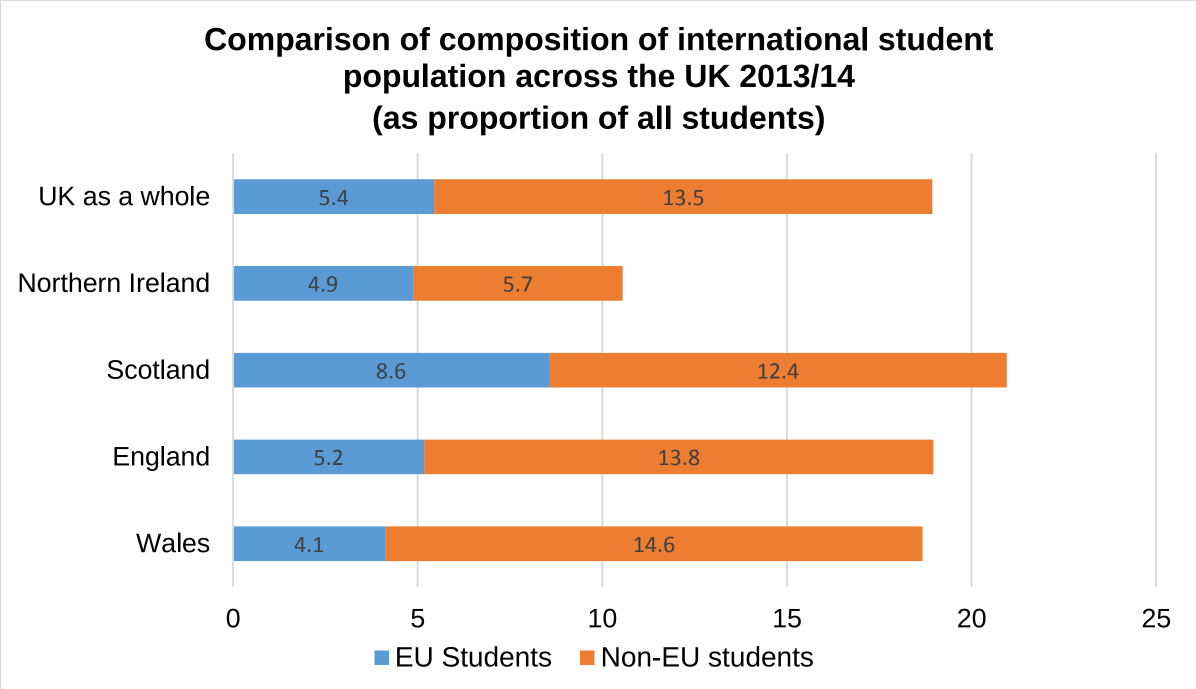

Figure 2: Comparison of composition of international student population across the UK
Source: HESA Students in Higher Education 2013/14

Figure 2 shows that while Scotland, for example, had the highest overall proportion of international students at 21%, a much larger proportion of these are EU students compared to Wales. Wales has the highest proportion of non-EU students making up its international student population compared to anywhere else in the UK.

Looking more closely at the profile of international students in Wales, it can be seen that there are particularly strong concentrations of students from specific parts of the world. This tends to reflect the current state of demand in the global student market rather than specific characteristics of Wales as a student destination in that these are also significant student markets for other UK institutions. The largest number of international students in Wales (nearly 50% of the total) come from Asia, with the next largest grouping being EU students. There are also significant numbers form Africa and the Middle East, followed by North America.

However while the main student markets are similar across the UK there are some variations in the proportions of students from different parts of the world. Figure 4 compares the overall profile of the international student population in Wales with that of the UK as a whole. It shows that Wales has a greater proportion of its international students coming from the Middle East, Asia and Africa than the rest of the UK. It has a relatively smaller proportion coming from Europe and North America.

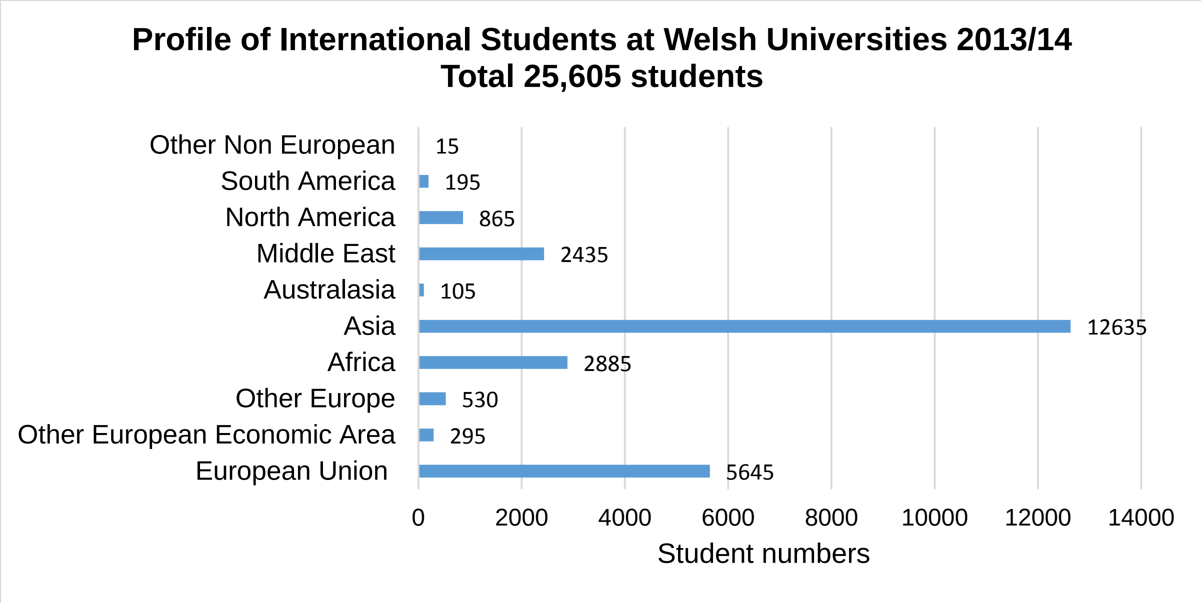

Figure 3: Profile of International Students at Welsh Universities

Source: HESA Students in Higher Education 2013/14

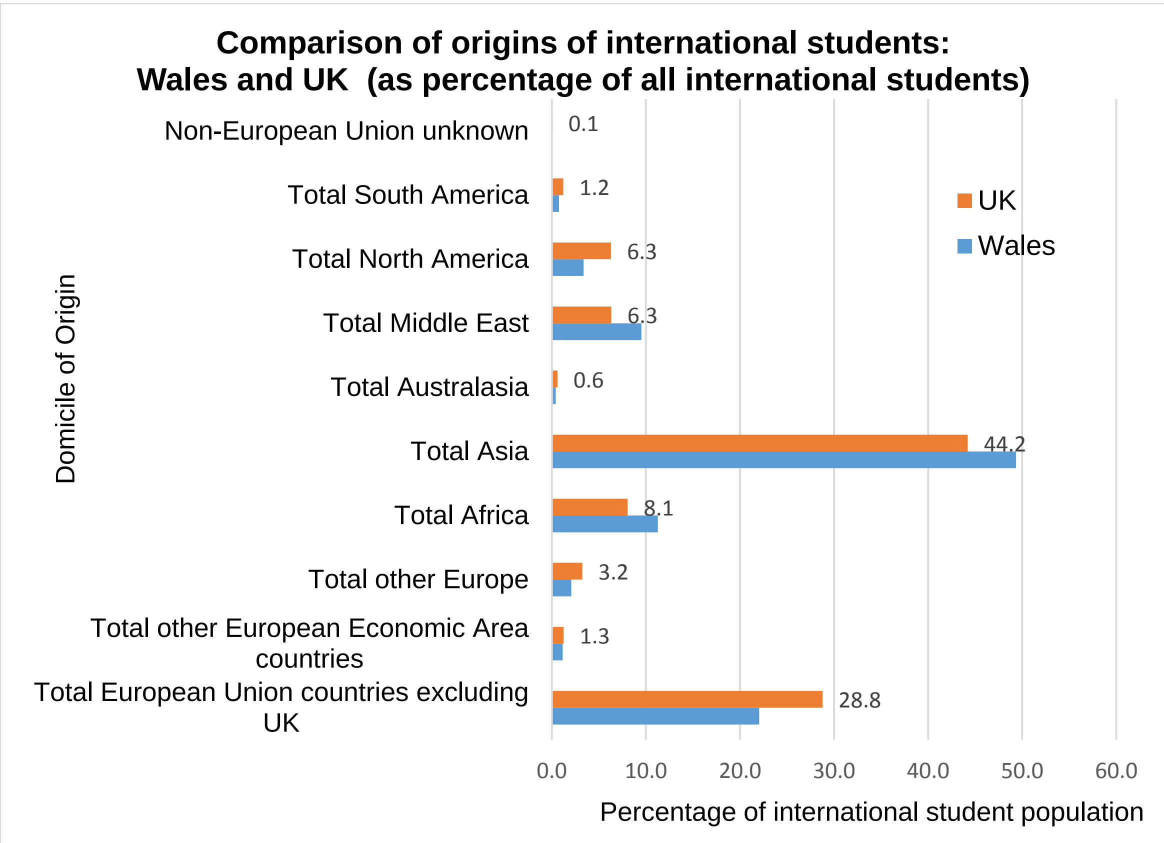

Figure 4: Comparison of the origins of international students: Wales and UK

Non EU students at Welsh Universities

There are non- EU students studying in Wales from 116 different countries. However 67% of all non EU students studying in Wales come from ten specific countries. The top ten countries from which Wales attracts non-EU students are shown in Figure 4. Students from China make up the largest national group of nearly 5000 students with the second largest group being from India (1780). These two countries are regarded by the Welsh Government as key international markets for Wales and there is Welsh Government representation in both of them.[8]

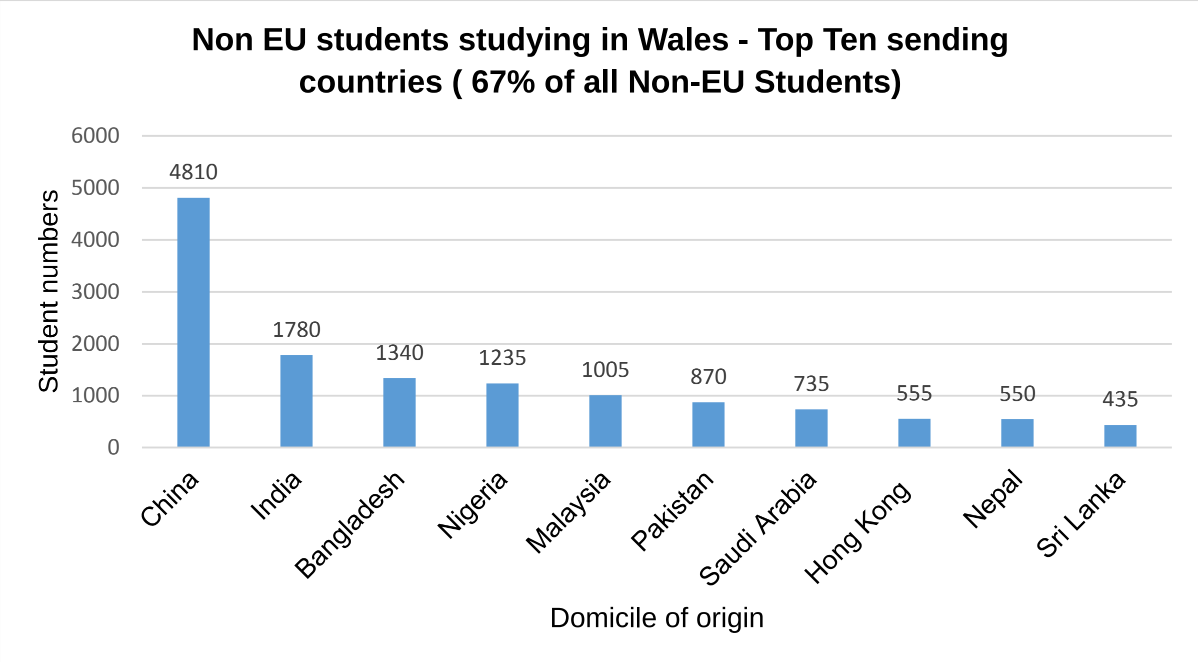

Figure 5: Non-EU students studying in Wales – Top Ten Sending Countries

Source: HESA Students in Higher Education 2013/14

[8] See: *Wales in the World : The Welsh Government's International Agenda* (2015)

Figure 6 gives the overall profile of the origins of all Non-EU students studying in Wales. The United States comes in as the 11th largest sending country. All of the countries named in the chart send at least 200 students each.

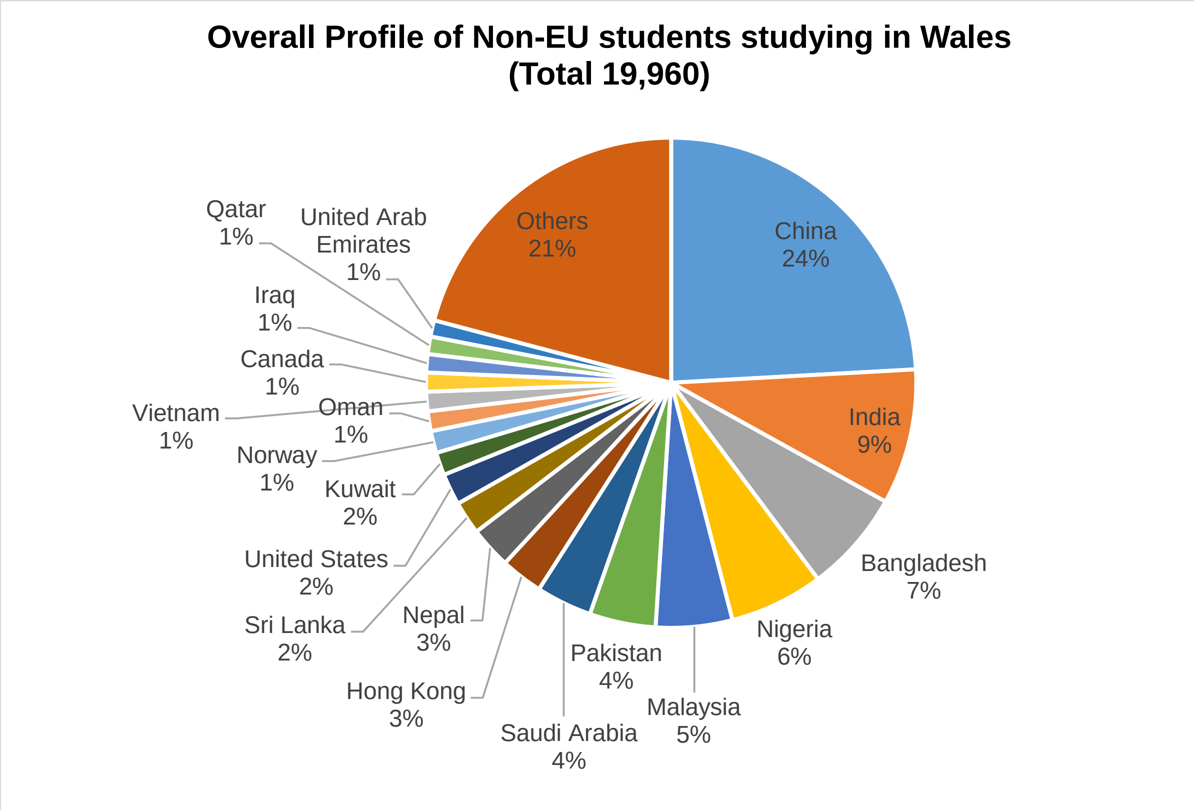

Figure 6: Profile of Non-EU students studying in Wales by domicile of origin

Source: HESA Students in Higher Education 2013/14

EU students studying in Wales

Of the 5645 EU students studying in Wales, the majority came from Germany (1050 students), and the rest from the other countries named in the figure 7. The EU is important to Welsh Higher Education both in terms of attracting students and also in the research collaborations that exist between Welsh Universities and counterparts across the EU. The Universities collaborate to ensure that Welsh Higher Education brand is promoted in Europe with a dedicated team in Brussels based in the Welsh Government Office there[9].

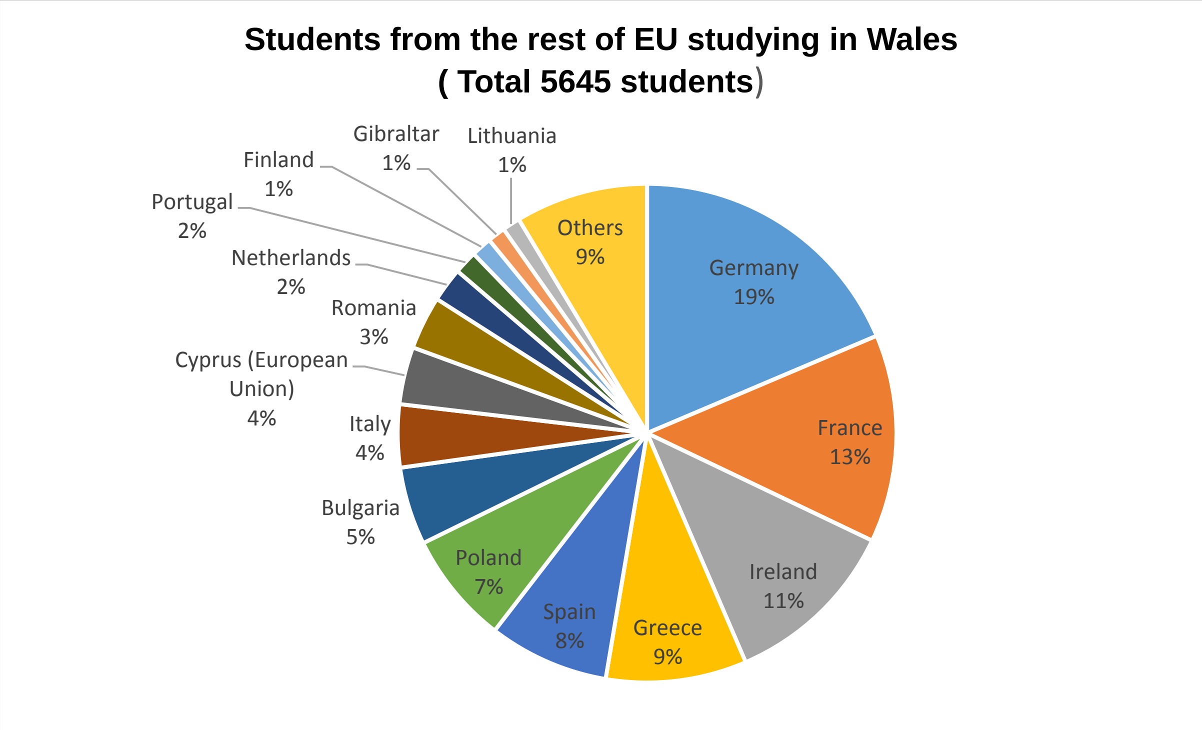

Figure 7: Profile of EU students in Wales by Domicile of Origin

Source: HESA Students in Higher Education 2013/14

[9] See the *Welsh Higher Education Brussels* site for more information http://www.wheb.ac.uk/en/

3. International Students and the Welsh Economy

International Export Earnings

All money attracted into Wales from international sources represents international export earnings for Wales. In this respect it does not matter whether the expenditure is that of EU or non EU students – Euros attracted into Wales are just as important as dollars, ringgit or Chinese Yuan. However there are different fee and living support arrangements and regulations relating to students from EU countries compared to those from non-EU countries. Students from non-EU countries tend to pay higher fees and there are restrictions surrounding their ability to undertake paid work while they are studying. EU students tend to pay lower fees, on a par with UK students. Undergraduate EU students are also eligible on the same terms as domestic Welsh students to apply for the Welsh Government Tuition Fee grant, which means that at least part of their fee payments will be UK–sourced (public) money. EU students also have more possibilities to work part-time – and UK sourced earnings cannot be regarded as export earnings. The estimates of expenditure made in this analysis take account of these points as far as possible so expenditure estimates for students (both in relation to fees and personal expenditure) are estimates of expenditure from non-UK sources only[10].

Estimates of money paid to the universities by international students

This included fee payments and estimated additional amounts e.g. for university residence. Overall payments made to the universities by international students were estimated as amounting to £203 million.

£m	Tuition Fees (£m)	Other payments to the Universities (£m)	Total (£m)
Non EU Students	143.4	35.8	179.2
EU Students	14.7	9.4	24.1
TOTAL	158.1	45.2	203.3

Table 1: Estimates of money paid to the Universities by international students

Source: Analysis of HESA Finance Plus 2013/14

Estimates of off-campus personal expenditure

Estimates were also made of student off-campus personal expenditure. International student off-campus expenditure was estimated by drawing on the detailed analysis of international student expenditure carried out by the Department of Business, Innovation and Skills (BIS) for the HM Government *International Education Strategy Paper International Education: Global Growth and Prosperity* (July 2013) and uprated by the Consumer Price Index (CPI). The BIS analysis took account of 'UK-sourced' personal income for both EU and Non-EU

[10] It is possible that a small element of non-UK student fee payments may ultimately be linked to a UK source (eg a British Council scholarship). However it was not possible to separate this out and it would be a relatively insignificant element of the total.

students (e.g. for part-time work) and excluded UK-sourced income so that the expenditure can be regarded as export earnings.

Total international student off-campus expenditure came to £303 million. Expenditure estimates were made separately for EU and non EU students, taking account of their different profiles and types (undergraduate vs postgraduate, fulltime vs part-time, etc.)

£m	Total Non-Fee Expenditure	MINUS Estimated non-fee payments to Universities	Total Off-Campus personal Expenditure
Non EU Students	275.6	35.8	239.8
EU Students	72.6	9.4	63.2
TOTAL	348.2	45.2	303.0

Table 2: Estimates of student off-campus expenditure

Source: Analysis of Department for Business, Innovation and Skills (BIS) estimates on international student expenditure (2013)

This shows that export earnings related to international students studying in Wales (taking their fee payments and personal expenditure together) came to £506 million. We also made estimates of spend by international short-term visitors associated with international students (i.e. family and friends) and their estimated expenditure came to £24 million. Including the related visitor expenditure therefore, the overall export earnings associated with international students amounted to £530 million. This was equivalent to 4% of 2014 Welsh exports[11]. The off-campus personal expenditure alone of students and visitors (£327m in total) alone was equivalent to over 7% of all (UK and international) visitor spend in Wales[12].

It is worth highlighting, although not the focus of this study , that the universities also generated other export earnings though the attraction of other international revenue such as that for research and consultancy. We have estimated the universities' other (non-student related) international revenue as amounting to a further £70 million so the overall contribution of the Welsh universities to export earnings, including student and non-student related income, student and visitor personal expenditure was in the region of £600 million in 2013/14.

[11] *Wales in the World: The Welsh Government's International Agenda* (2015). Total 2014 Welsh Exports were £13.1 billion.

[12] The Welsh Tourism Satellite Account estimated £4.5 billion visitor spend in 2011 (see the *Welsh Government Strategy for Tourism 2013 – 202*).

4. Modelling the economic impact of international students

There are many different benefits to Wales of having international students studying in its universities. As the Welsh Government *Policy Statement on Higher Education* (2013) highlighted, the international dimension of Welsh higher education is of considerable value to Wales, in terms of making international connections and acting as a bridge between Wales and the global economy. It increases the country's presence on the world stage with the additional economic and cultural benefits that could bring. The current strength of Welsh higher education institutions in attracting students from further afield to study in Wales also means they are attracting additional money into Wales and boosting export earnings**.** By attracting students from abroad, the higher education sector is contributing, both immediately and in the longer term, to the goal of raising the country's profile and attracting investment.

This study is focussed on capturing and analysing the very immediate and positive effect on the economy of international student spending.

This happens in two main ways:

- International students pay fees to the universities, as well as making a range of other payments (for those staying in university residence, for catering and related expenses). The universities then re-spend this money, both in buying goods and services for institutional purposes (from books to legal services, lab equipment to catering supplies) and also in hiring staff and paying wages to university staff who then re-spend their wages on housing, food, and other consumer goods and services.

- As well as making payments to the universities, international students also spend money 'off-campus', away from the university. This can include spending on rent in private accommodation, groceries, clothes, personal items, travel and entertainment. This generates additional demand in consumer-related industries.

Modelling International Student Expenditure

In order to model the impact of international student expenditure, this study included separate modelled analysis of the impact of both kinds of international student expenditure - impact generated through the payments made to the universities and impact generated through student personal off-campus expenditure.

Impact generated through the universities follows a different pattern from that generated through student personal expenditure. This is because of the nature of many institutional needs and institutional buying patterns (lab equipment through a wholesaler for example) being different from that of individuals. Student personal expenditure tends to be consumer-oriented, with a greater reliance on imported goods and services.

The modelling system used for this study takes account of this, so that University impact is modelled through a different path to that of students.

Impact generated through the payments made to the Universities by international students

The overall impact of the Welsh university sector was modelled and the share of its impact of its attributable to payments from international students was identified. This is shown below. Overall around 14.7% of the total university impact was attributable to income from international students (13% to Non EU students and 1.7% to EU students). Table 3 shows the student share of University impact on Wales.

	Overall University Impact (Direct & Secondary)	Share attributable to Non-EU Students	Share Attributable to EU students	Total attributable to International Students
Output generated in Wales	£2786m	£362m	£47m	£409m
Jobs generated in Wales	31196 FTE	4055 FTE	530 FTE	4585 FTE
Welsh GVA generated	£1581m	£206m	£26 m	£232m

Table 3: Share of the Welsh Universities' impact in Wales attributable to international students

Source: Viewforth Modelling System Analysis

As well as generating impact on Wales, additional impact was generated beyond Wales, on the rest of the UK. This is shown in Table 4.

	Overall University Impact in rest of UK	Share attributable to Non-EU Students	Share Attributable to EU students	Total attributable to International Students
Output generated in rest of UK	£475m	£62m	£8m	£70m
Jobs generated in rest of UK	4144 FTE	539 FTE	70 FTE	609 FTE
GVA generated in rest of UK	£245m	£32m	£4m	£36m

Table 4: Share of the Welsh Universities' impact in the rest of the UK attributable to international students

Source: Viewforth Modelling System Analysis

Impact generated through the off-campus expenditure of international students

The off-campus expenditure of international students was separately modelled and the results are presented in Tables 5 and 6.

	Output Impact On Wales (£m)	**Jobs Generated in Wales (FTE)**	**GVA generated in Welsh Industries (£m)**
Non-EU students	**269.4**	**2257**	**121.6**
Rest of EU Students	**70.9**	**594**	**32.0**
TOTAL	**340.3**	**2851**	**153.6**

Table 5: Impact of Off-Campus Expenditure of University students in Wales 2013/14

Source Viewforth Modelling System Analysis

As well as generating impact on Wales, the off-campus expenditure of international students generated additional impact beyond Wales, on the rest of the UK.

	Output Impact On Rest of UK(£m)	**Jobs Generated in Rest of Uk(FTE)**	**GVA generated in Industries in rest of UK (£m)**
Non-EU students	**90.6**	**789**	**45.3**
Rest of EU Students	**23.9**	**208**	**11.6**
TOTAL	**114.5**	**997**	**56.9**

Table 6: Impact generated in the rest of the UK by the off-campus expenditure of International students in Wales.

Source: Viewforth Modelling System Analysis

Overall Impact on Wales of international student expenditure

Combining the impact from both types of its expenditure, that made through the Universities and that made off-campus by students enables the overall impact of students to be presented.

Output Impact on Wales £m			
	Generated through payments to the University	Generated through impact of Off-campus expenditure	Total Impact on Wales
Non EU Students	**£362.2m**	£269.4m	£631.6m
EU Students	**£47.4m**	£70.9m	£118.3m
TOTAL	**£409.6m**	£340.3m	£749.8m
Employment Impact on Wales FTE jobs			
EU Students	**Generated through payments to the University**	Generated through impact of Off-campus expenditure	Total Impact on Wales
Non Eu Students	**4055 FTE**	2257 FTE	6313 FTE
EU Students	**530 FTE**	594 FTE	1124 FTE
TOTAL	**4585 FTE**	2851 FTE	7437 FTE
GVA Generated in Wales £m			
	Generated through payments to the University	Generated through impact of Off-campus expenditure	Total Impact on Wales
Non EU Students	**£205.5m**	£121.6m	£327.1m
EU Students	**£26.9m**	£32.0m	£58.9m
TOTAL	**£232.4m**	£153.6m	£386.0m

Table 7: The Overall Impact on Wales of international student expenditure

Source: Viewforth Modelling System Analysis

Per Capita Student Impact

As well as considering the overall impact of international students on Wales, it is possible to analyse the per capita impact. This may be of particular policy relevance when the implications for the economy of expanding or contracting international student numbers is under discussion. We analysed the per capita impact of EU and Non-EU students separately because of the very different policy, immigration and regulatory environment pertaining to the two different groups of students[13].

The per capita impact focuses on the impact directly related to student expenditure, both through payments to the universities and through personal expenditure. It does not include any impact that could arise from the expenditure of visiting friends and family.

Table 8 presents the estimated average per capita student expenditure, including payments made to the universities and off-campus.

	NON EU Students	EU Students
Total estimated average per capita expenditure in the study year	£21,898	£14,561
Of which paid to the University (for fees and accommodation etc.)	£9367	£4019
Of which spent off-campus	£12,532	£10,542

Table 8: Estimated average per Capita student Expenditure

Table 9 and Table 10 present the impact of this expenditure on Wales and on the rest of the UK on a per capita basis, for Non EU and for EU students respectively. It shows that on a per capita basis:

- Every Non-EU student studying in Wales generates £33k of Welsh output, £17.1k of Welsh GVA and creates 0.33 FTE jobs in Wales.
- Every EU student studying in Wales on average generates £19.7k of Welsh output, £9.8k of Welsh GVA and 0.19 FTE jobs.

Additional impact is also generated in the rest of the UK.

[13] For the purposes of analysis 'EU' students also include students from the European Economic area and Switzerland as they are treated in a similar way to EU students

OUTPUT	**Per Capita Impact (Wales)**	Per Capita impact (rest of UK)	Per Capita (Total)
Non EU Students			
Generated through payments to the Universities	18.9	3.2	22.1
Generated through off-campus spending	14.1	4.7	18.8
Total	**33.0**	7.9	40.9
EMPLOYMENT	**Per Capita Impact (wales)**	Per Capita impact (rest of UK)	Per Capita (Total)
Non EU Students			
Generated through payments to the Universities	0.21	0.03	0.24
Generated through off-campus spending	0.12	0.04	0.16
	0.33	0.07	0.40
GVA	**Per Capita Impact (wales)**	Per Capita impact (rest of UK)	Per Capita (Total)
Non EU Students			
Generated through payments to the Universities	10.7	1.7	12.4
Generated through off-campus spending	6.4	2.3	8.7
Total	**17.1**	4.0	21.1

Table 9: Per Capita impact of Non- EU students on Wales and the rest of the UK

Source: Viewforth Modelling System Analysis

OUTPUT	**Per Capita Impact (Wales)**	Per Capita impact (rest of UK)	Per Capita (Total)
EU Students			
Generated through payments to the Universities	7.9	1.3	9.2
Generated through off-campus spending	11.8	4.0	15.8
Total	**19.7**	5.3	25.1
EMPLOYMENT	**Per Capita Impact (Wales)**	Per Capita impact (rest of UK)	Per Capita (Total)
EU Students	0.09	0.01	0.10
Generated through payments to the Universities	0.10	0.03	0.13
Generated through off-campus spending	**0.19**	0.05	0.23
GVA	**Per Capita Impact (Wales)**	Per Capita impact (rest of UK)	Per Capita (Total)
EU Students			
Generated through payments to the Universities	4.5	0.7	5.2
Generated through off-campus spending	5.3	2.0	7.3
Total	**9.8**	2.7	12.5

Table 10: Per Capita impact of EU students on Wales and on the rest of the UK

Source: Viewforth Modelling System Analysis

5. Additional impact of visitors to international students

In terms of the immediate economic benefits they bring to Wales through their spending, international students themselves can be regarded as similar to long stay tourists. Students may stay three or four years to complete their course. During that time they also attract a further stream of short-term international leisure visitors coming to Wales as tourists.

These are the family and friends of current and graduating international students, who come to Wales as tourists to visit students, attend graduation ceremonies and other university events. The universities do not formally collect data on such visitors. However estimates can be made through analysis of the International Passenger Survey data, combined with data from the Annual Population Survey and HESA data on international student numbers.

To estimate the numbers of leisure visitors we drew on numbers of international visitors to Wales in 2014 reported through the IPS and Travel Trends (2015), who indicated that their primary purpose of visit was to see family and friends. The Annual Population Survey (2015) also provides estimates of the resident population of different nationalities in Wales. It was assumed that visitors to friends and family were visiting people of the same nationality as themselves.

Combining data on the resident international population with the numbers of current students of the same nationalities enabled a further estimate of the proportion of visits to friends and family that were likely to have been associated with the international student population rather than to other international residents in Wales.

For instance only 10% of the ‘friends and family’ visits to Wales from other European Countries were estimated to have been associated with European students studying in Wales, but around 37% of North American ‘friends and family’ visits were considered to be to students, with 40% of ‘friends and family’ visits from other countries considered to have been made to students. The estimated expenditure of visitors was also made drawing on the IPS and *Travel Trends* data. Overall this resulted in an estimate of 50,180 international visits in 2013/14 attracted as a result of a friend or family member studying in Wales, with an average spend per visit of £479.

The impact of this expenditure was modelled and the results were as follows:

	Generated in Wales	Generated in rest of UK	Total generated
Output	**£23.5m**	£7.9m	£31.4m
Jobs	**197 FTE**	69 FTE	266 FTE
GVA	**£10.6m**	£4m	£14.6m

Table 11: Additional impact of expenditure of short-term international visitors associated with international students in Wales

Source: Viewforth Modelling System Analysis

As there is no difference from an economic perspective as to whether the expenditure of tourists from outside the UK come from EU or non-EU countries, with all of their expenditure being regarded as Export Earnings, the analysis did not disaggregate visitors to EU or non-EU students.

Total Overall Impact of international students and visitors

The overall impact on the economy of the expenditure of International students studying in Wales, together with the impact of the expenditure of their visiting family and friends is presented in Table 12.

Total Output Impact £m			
	Impact on Wales	**Impact on Rest of the UK**	**Total UK Impact**
Non EU Students	**£631.6m**	152.4m	£784.0m
EU Students	**£118.3m**	£32.0m	£150.3m
Visitors to Students	**£23.5m**	£7.9m	£31.4m
TOTAL	**£773.4m**	£192.3m	£965.7m
Employment Impact FTE jobs			
	Impact on Wales	**Impact on Rest of the UK**	**Total UK Impact**
Non EU Students	**6313 FTE**	1328 FTE	7641 FTE
EU Students	**1124 FTE**	279 FTE	1403 FTE
Visitors to Students	**197 FTE**	69 FTE	266 FTE
TOTAL	**7634 FTE**	1676 FTE	9310 FTE
Total GVA Generated £m			
	Impact on Wales	**Impact on Rest of the UK**	**Total UK Impact**
Non EU Students	**£327.1m**	**£77.2m**	**£404.3m**
EU Students	**£58.9m**	**£14.8m**	**£73.7m**
Visitors to students	**£10.6m**	**£4.0m**	**£14.6m**
TOTAL	**£396.6m**	**£96.0m**	**£492.6m**

Table 12: Overall impact generated by international students and their visitors

6. Distribution of economic impact across Wales

This study was extended to include, for the very first time, analysis of the distribution of international student-related economic impact across Wales. This involved the construction of a Wales-specific ‘gravity model’ which combined official data on the industry and labour market structure of Wales together with information on the travel distance from the major centres of university activity, where international students are based.

Observing how higher education economic impact flows across Wales shows how all parts of Wales share in the economic benefits of Wales hosting international students.

While the areas immediately surrounding centres of university activity benefit most directly, economic impact flows further afield even to areas that do not have a university or international students living directly in their vicinity.

This is for the reasons highlighted earlier:
- Students pay fees to the universities, who then re-spend that money, generating economic activity in industries across Wales.
- Students and their visitors spend money in Wales on food, accommodation, clothes, entertainment, travel and other personal expenses. This creates demand in consumer-related industries across Wales.

Larger centres of employment and population tend to attract concentrations of expenditure impact. This is moderated by distance - the further the distance travelled from the original source of impact, the weaker the ripples of impact become. The resultant analysis reflects the demographics, industry and employment characteristics of Wales as well as geographical location factors.

The concept is illustrated below, using the example of university activity in Swansea as the initial source of impact.

The 'ripple effect'

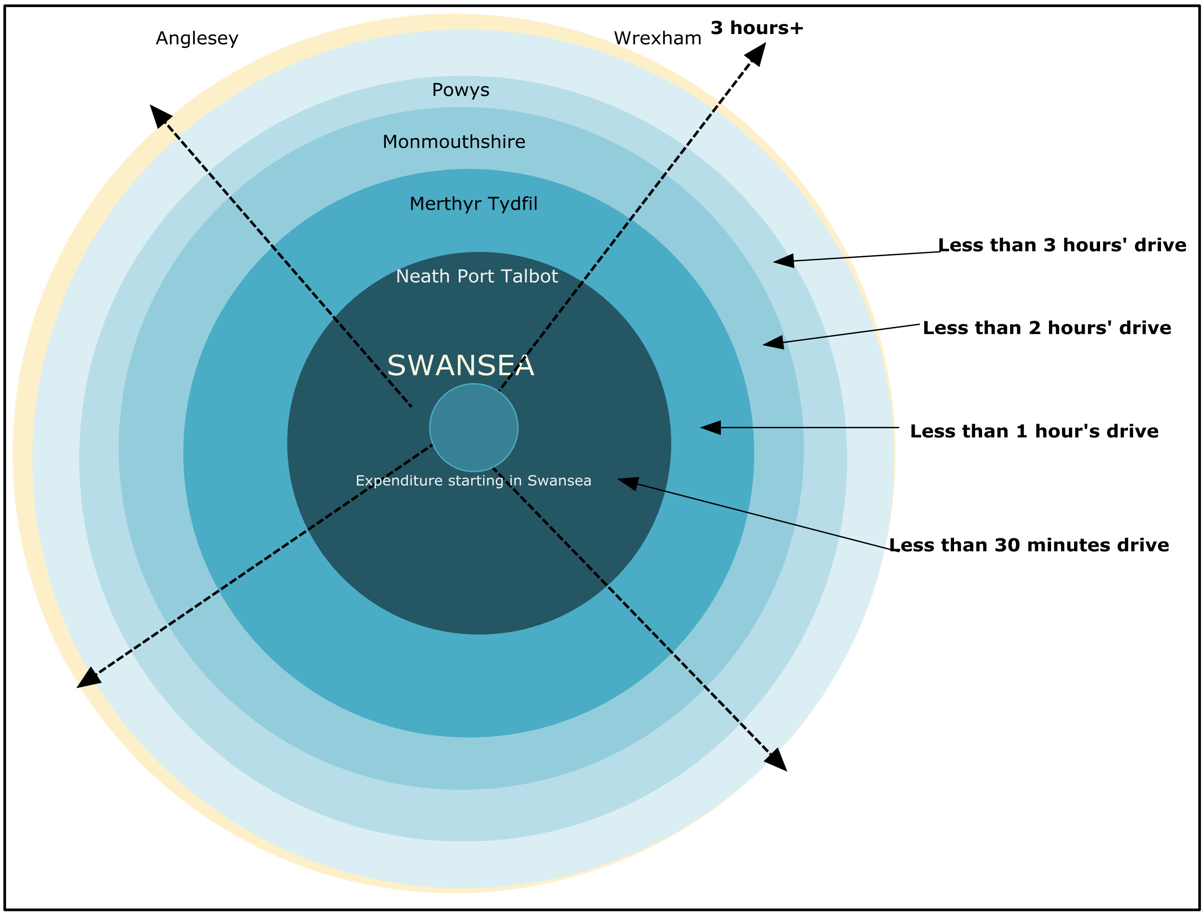

Figure 8: Ripple effect of impact across Wales (using impact originating in Swansea as an example)

This effect is replicated for all of areas where higher education activity originated. In this analysis, 9 centres of university activity were identified and used as the originating point of impact, which then spread across Wales in a ripple effect[14].

The analysis undertaken reflects the total impact of international student and visitor expenditure on Wales and includes 'spillovers' across regions. For instance the overall economic impact observed to be in Swansea is not only and wholly attributable to the higher education activity and international students resident directly in Swansea but also includes ripples from the expenditure of students made through other universities and in other locations.

The impact observed in Gwynedd, for example, includes not only the impact generated through student payments to Bangor University and expenditure of University of Bangor international students but also includes economic ripple effects from the impact of international students in other parts of Wales including e.g. impact originating from Aberystwyth students, University of South Wales students, Cardiff University students and so on.

[14] The initial 'impact point' included the main geographical areas where there was observable Welsh university activity. In 2014 these were: Aberystwyth, Bangor, Cardiff, Carmarthen, Lampeter, Newport, Pontypridd, Swansea, Wrexham.

Results of local impact analysis

The results for detailed analysis of impact across the 22 Local Authority areas of Wales are presented below. Figure 9 shows how the impact of student and visitor expenditure flows out across and affects all areas of Wales. The impact on employment can be seen quite clearly in Figure 10.

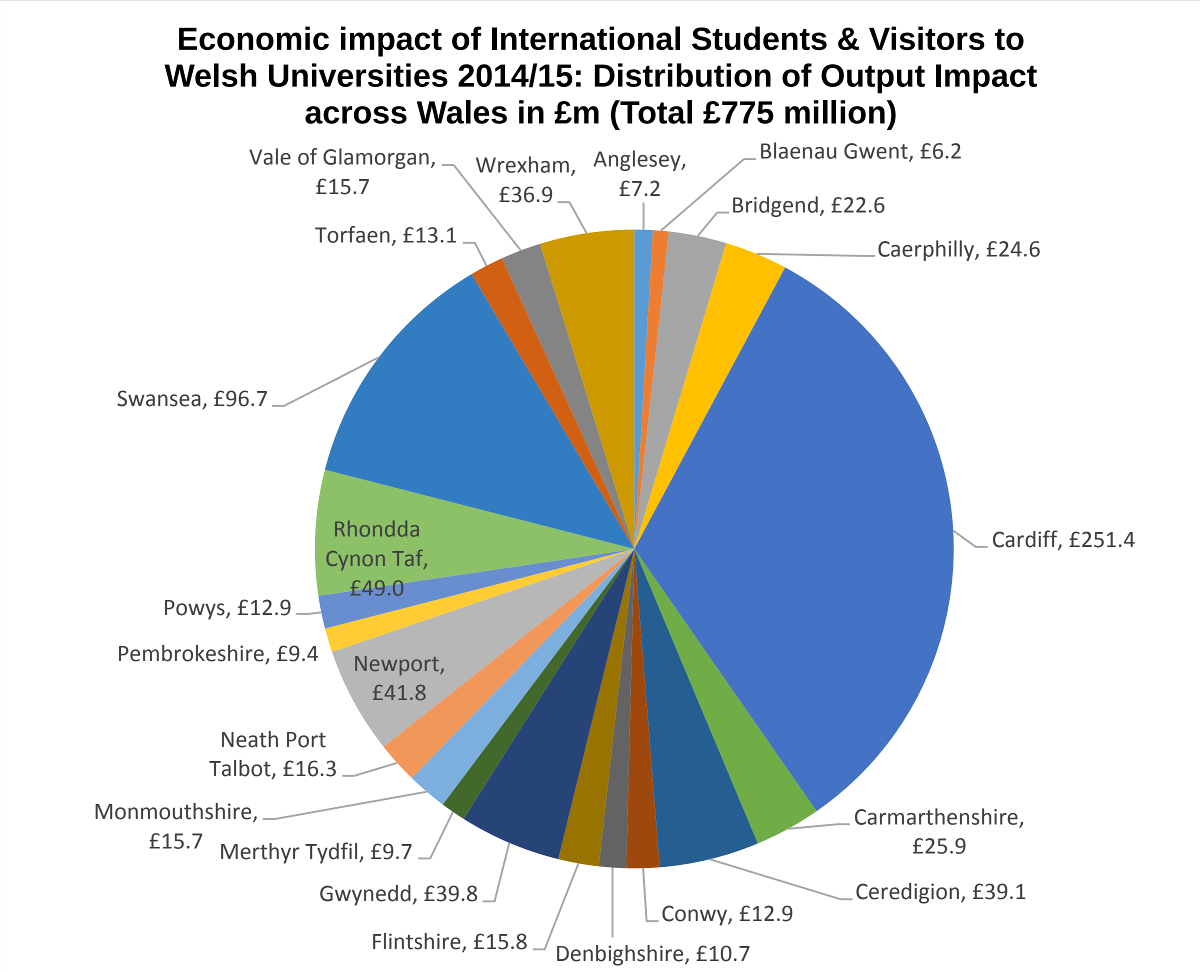

Figure 9: Distribution of Output Impact - Local effects across Wales

Source: Viewforth Gravity Modelling System Analysis

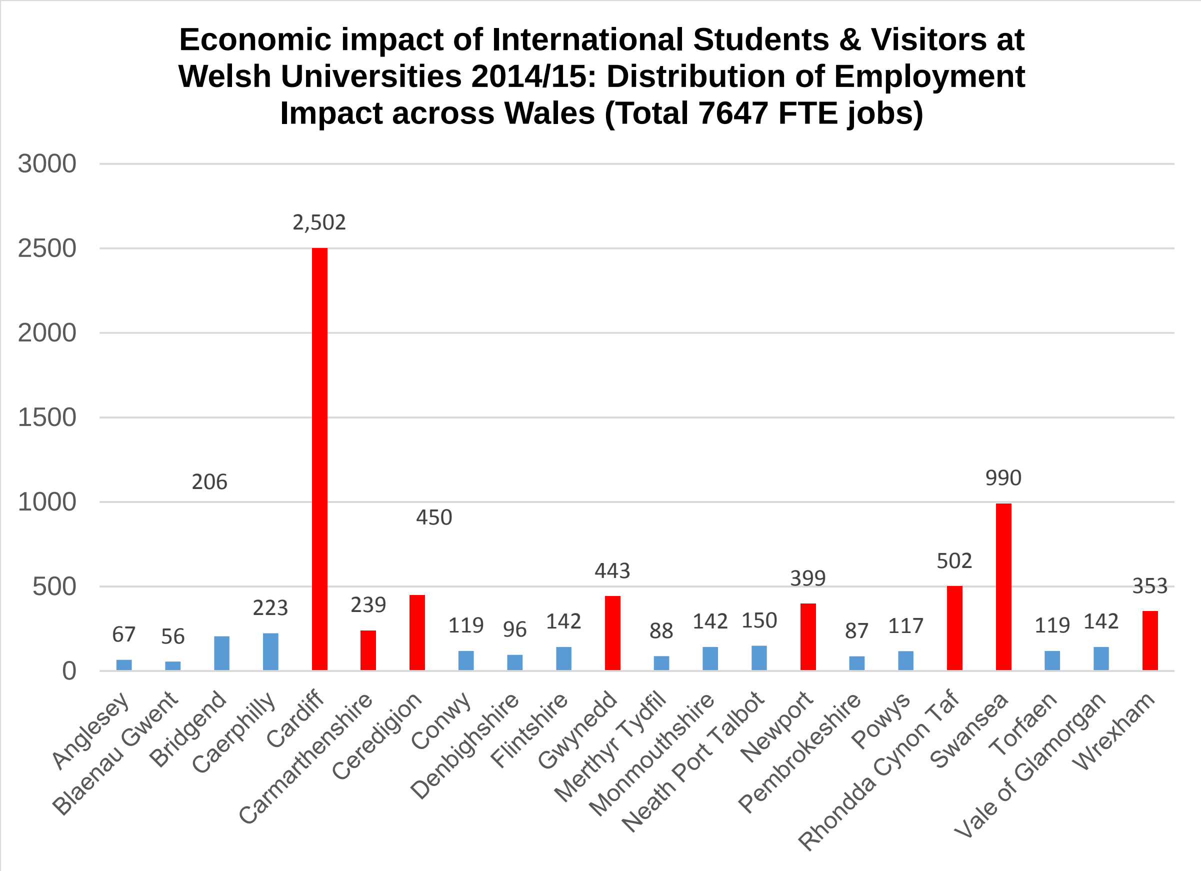

Figure 10: Distribution of Employment Impact – Local effects across Wales

Source: Viewforth Gravity Modelling System Analysis

In Figure 10, the total employment generated includes both jobs inside the universities and outside the universities, generated by the fees and personal expenditure of university students and their visitors. The areas highlighted in red are those where there is an actual university presence or university activity in that area. It can be seen that the impact on employment is greater in those areas than in others - which is both as a result of the jobs directly created in the universities in those areas by the fees paid to the universities as well as the greater concentrations of spending by students in those areas. However 1756 jobs – nearly 23% of the total – were generated in areas that did not have a university presence.

Table 13 shows the relative importance of the jobs generated by international students & visitors in all of the local authority areas across Wales. The areas highlighted in yellow are those areas where there is an active university presence and which is the initial focus for expenditure for the students and visitors. The table ranks the areas in terms of the relative importance to the area of the jobs generated by international students. This shows the jobs generated by students as a percentage of all jobs in that area. The top 7 are all areas with a University presence. However jobs generated by international students are also relatively important in other area as well notably in Merthyr Tydfil, Caerphilly and the Vale of Glamorgan. The relative importance of jobs generated reflects both the volume of jobs but also how these sit within the overall employment profile of the area.

Numbered by relative importance to employment in that area	Area of Wales	FTE Jobs generated by students & visitors	% of employment in the area [15]
1	Ceredigion	450.0275391	1.24
2	Cardiff	2501.647241	1.10
3	Swansea	990.4209961	0.85
4	Gwynedd	442.9518424	0.73
5	Rhondda Cynon Taf	501.7201655	0.67
6	Newport	398.7624629	0.56
7	Wrexham	353.1846679	0.53
8	Merthyr Tydfil	88.0147694	0.38
9	Caerphilly	223.3245341	0.37
10	Vale of Glamorgan	142.2485151	0.36
11	Carmarthenshire	239.3873514	0.32
12	Torfaen	118.9071381	0.32
13	Neath Port Talbot	149.9491402	0.32
14	Monmouthshire	142.0403811	0.31
15	Bridgend	206.0260643	0.31
16	Anglesey	67.05086044	0.28
17	Blaenau Gwent	55.85011651	0.28
18	Conwy	118.9532163	0.27
19	Flintshire	142.3344347	0.24
20	Denbighshire	96.13636086	0.22
21	Powys	117.4732709	0.19
22	Pembrokeshire	87.31940763	0.16
	ALL WALES	7633.730476	0.57

Table 13: Relative importance of jobs generated

Figure 11 presents the distribution of GVA generated through the impact of the student and visitor expenditure. This is a very similar – but not identical – pattern to the distribution of output and jobs. The slightly different distribution of GVA is related to the jobs generated inside the universities by international student expenditure.

Universities tend to have an overall higher skill profile and higher GVA than the average for the economy. Hence areas where there is a university present will have a slightly higher GVA proportion than output. However the overall effects are similar in that GVA is generated across Wales and not only in the areas with a university presence.

[15] Derived from 2013 Data on Workforce employment by Local Authority (StatsWales)

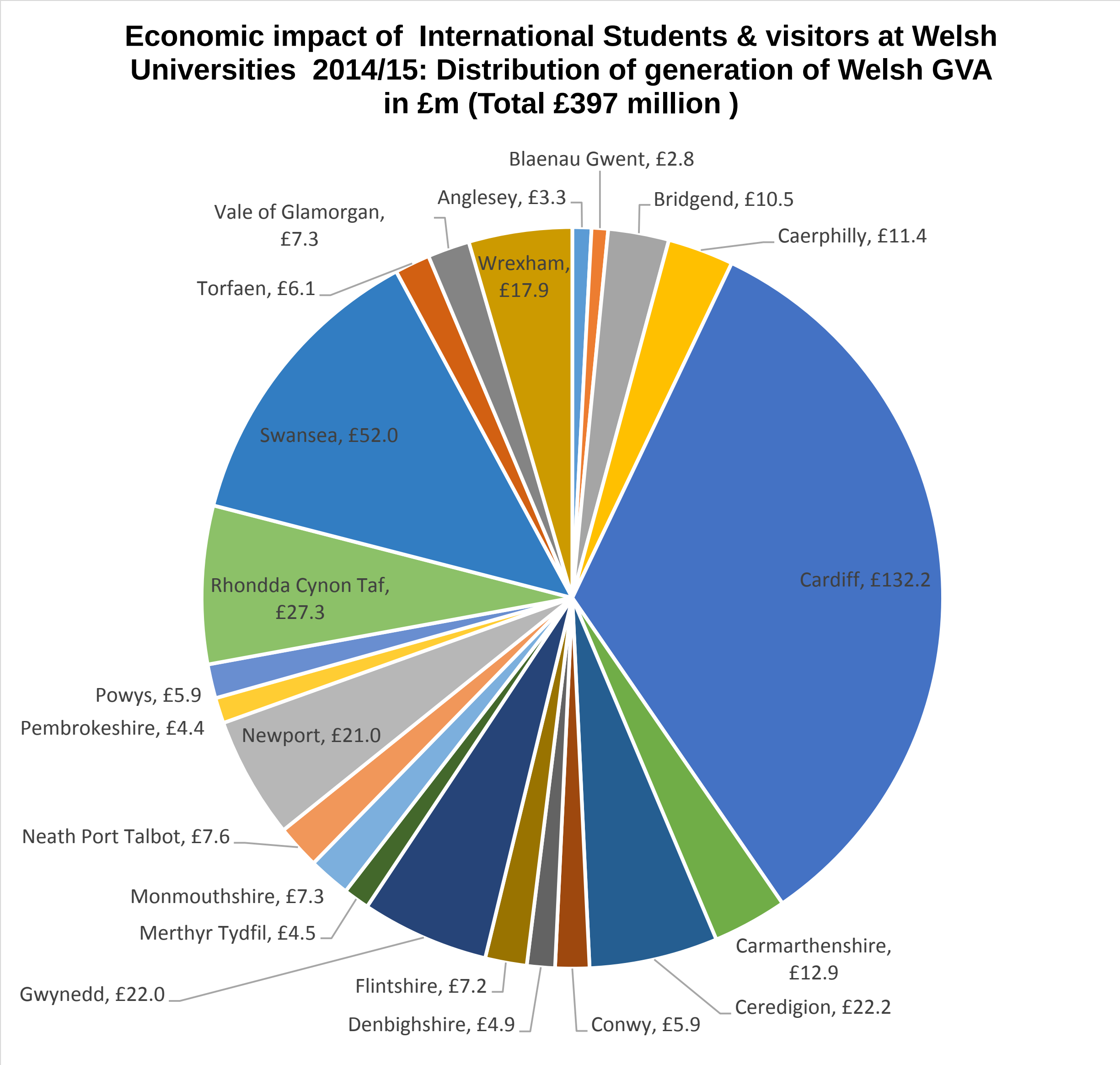

Figure 11: Distribution of GVA Impact – Local effects across Wales

Source: Viewforth Gravity Modelling System Analysis

It can also be noted that while areas with a university presence attract most of the GVA generated through international student and visitor expenditure, nearly 22% (£89m of GVA generated was in industries in areas without a university presence.

7. Conclusions and reflections

This study has presented an up-to-date analysis of the impact of international students studying at universities in Wales during the academic and financial year 2013/14. It has modelled the impact generated through their fees and related payments made to universities and also the impact of their personal off-campus expenditure. This study also modelled the impact of the estimated additional number of short-term international visitors associated with international students in Wales (their family and friends).

The analysis has shown that the attraction and hosting of international students in Wales has a significant positive impact on the economy. Both Non-EU and EU students can be seen to have a significant per capita impact with nearly one full time equivalent Welsh job being generated by every 3 Non EU students and another one generated by every 5 EU students.

Non-EU students have a greater impact per capita than EU students, largely due to the higher fees they tend to pay and they are also more likely to be fulltime students.

The overall impact of international students and their visitors generated £397m GVA in Wales, equivalent to nearly 0.8% of all 2013 Welsh GVA[16]. They generated over 7,600 Welsh jobs, equivalent to nearly 0.6% of Welsh Workplace employment in 2013[17].

By attracting international students to come and study in Wales, the universities are helping to build long term connections between Wales and the countries to which the students return, supporting the ambition for Wales to have a "strong footprint around the world."[18]

The Welsh universities are already actively working with Welsh Government Agencies in promoting Wales abroad. Global Wales - a new partnership between the Welsh Government, British Council Wales, HEFCW and Universities Wales - promotes Wales' universities in a small number of target markets overseas. *Welsh Higher Education Brussels,* an office established to promote the interests of Welsh universities within the EU, is also a good example of collaboration.

[16] StatsWales 2014 Welsh GVA in 2013 stood at just over £52 billion.
[17] StatsWales 2014. Welsh Workplace employment came to 1.35 billion
[18] The need for Wales to " have a strong footprint" was highlighted by the First Minister for Wales the Rt Hon Carwyn Jones AM in *Wales in the World: The Welsh Government's International Agenda* (2015)

Appendix One: Methodology and data sources

The primary focus of the study was the international students (both Non EU and EU students studying at Welsh Universities during the academic and financial year 2013/14. The study examined the impact of international student expenditure – including through the fee payments made to the Universities and through their off-campus personal expenditure. Analysis also included the impact of international visitors (friends and family) to international students in Wales. It further analysed the additional injection into the Welsh economy of the expenditure of short term international visitors associated with international students – i.e. the estimated number of visiting family and friends

There were a number of stages involved in the approach to assessing of the economic impact of the students. The impact of the Welsh universities themselves 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 the region. Then the share of university impact that was attributable to the fees and related monies paid to the universities by international students was identified.

The student share of university impact was then combined with the modelled impact of student off-campus expenditure to obtain the overall impact on the economy due to both fees paid to the universities and personal living expenditure. This gave the overall impact of international students on Wales and the rest of the UK and also allowed the per capita impact of students to be presented.

In presentation of overall Welsh impact and to better take into account the distribution of student impact across Wales, a Wales-specific ‘gravity-model’ was developed. The ‘gravity modelling’ approach developed for this study involved firstly identifying positive ‘mass’ or ‘attraction’ variables (in this case population and employment) in all 22 of Welsh Local Authority areas (LAU1) included in StatsWales. These were combined with negative ‘distance’ variables reflecting the estimated travel time (by road) between the main ‘centres of higher education activity’ and the main Administrative centre of each of the regions. Travel time was based on estimates given by the web-based ‘Distancefrom’ route mapping site (http://www.distancesfrom.com/) which gives both distance and average road travel time between any two UK points.

A modelled combination of these variables was applied to derive estimates of the pattern of impact distribution. A large proportion of the impact of students will inevitably accrue to the immediate area surrounding the University where they are based. However the gravity-modelling approach enables analysis of how far impact may also be felt through ‘knock-on effects’ in industries across Wales. This particular approach to gravity-modelling allowed ‘spillover’ effects from regions to be incorporated. That is to say the final results for impact on a particular area e.g. Gwynnedd will not only include impact of the University student activity in that area (such as students at the University of Bangor) but also include ripple effect impact from the other Universities across Wales.

The UK input-output 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 was updated in 2013 to reflect productivity increases and related economic changes. Additional data sources included the Producers’ Prices Index, ONS Regional Accounts and Welsh specific data from the Welsh Government Statistics through StatsWales. The core modelling system is based on 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*, McNicoll and White) Universities UK 2014.

Other data sources and issues arising

The main source of university data was data published by the Higher Education Statistics Agency (HESA) relating to on HE Finance, staffing and students. Estimates of Welsh Government Tuition Fee Grant were made based on HEFCW published allocations. Estimates of student expenditure were made drawing on the most recent (2014) Welsh Government Student Income and Expenditure survey as well as Department for Business and Innovation (BIS) estimates of international student expenditure.

Appendix Two: References and Bibliography

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Vickers & Bekhradnia The Economic Costs and Benefits of International Students (HEPI 2007)

Welsh Government *Policy Statement on Higher Education* (June 2013)

Welsh Government *Wales in the World : The Welsh Government's International Agenda* (2015)

Welsh Government Social Research Paper 37/2014 *Student Income and Expenditure 2011/12 Welsh Domiciled Students*

Welsh Government *Strategy for Tourism 2013 – 202*0 (2013)

Appendix Three: Students included in the study

International students at the following universities were included in the analysis:

Aberystwyth University

Bangor University

Cardiff University

Cardiff Metropolitan University

Glyndŵr University

Swansea University

University of Wales Trinity St David

University of South Wales

Students from the OU were not included as all non-UK Domiciled students studying with the OU are allocated to the OU's main Administrative site in Milton Keynes. However the numbers involved are small (300 students in total) .

Appendix Four: List of Figures and Tables

<u>Figures</u>

<u>Tables</u>

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