November 2017

The Economic Impact of International Students in Wales

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Viewforth Consulting Ltd

Viewforth Consulting Ltd

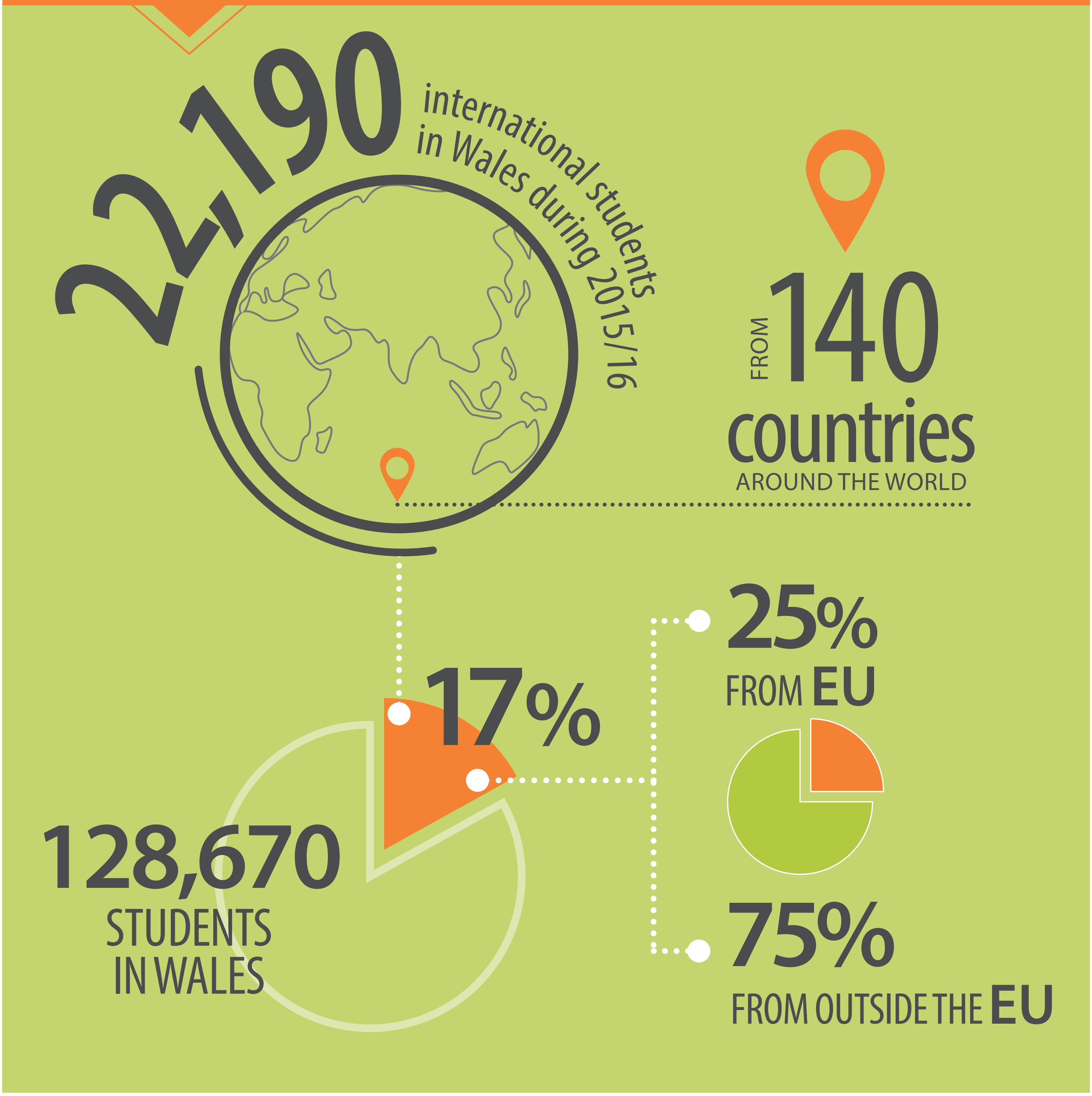
Universities Wales
Prifysgolion Cymru

EXECUTIVE SUMMARY

THE ECONOMIC IMPACT OF INTERNATIONAL STUDENTS IN WALES

> "International students studying at Welsh universities are bringing significant and positive economic and social benefits to Wales, adding value to our campuses and communities."

Professor Julie Lydon, Chair, Universities Wales



GENERATING EXPORT EARNINGS

International students and their visitors spent

£487m

equivalent to 3.7% of all 2015 Welsh exports

SUPPORTING TOURISM

56,136

international visitors

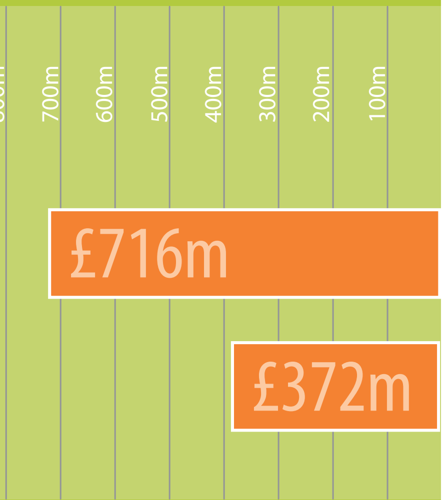
attracted to Wales by family and friends of international students

POWERING THE ECONOMY

International students and their visitors generated:

£716m **of Welsh output**

£372m **of Welsh GVA**



CREATING JOBS

The spending of international students and their visitors generated

over 6,850 full time equivalent jobs in Wales

equivalent to nearly 0.5% of Welsh employment

SUPPORTING WELSH COMMUNITIES

Impact from international students and their visitors flowed across all areas of Wales with

1,598 jobs
£82m of GVA

created in areas which do not have a university presence

The key findings of the economic impact of international students in Wales report are based on analysis of international students (including both EU and non-EU students) studying at the 8 universities in Wales during the academic and financial year 2015/16. The work examines the impact of international student spending on the economy and the additional spending of short term international visitors associated with international students.

For a copy of the full report, visit our website:
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THE ECONOMIC IMPACT OF INTERNATIONAL STUDENTS IN WALES

Report to Universities Wales

Ursula Kelly & Iain McNicoll, Viewforth Consulting Ltd

November 2017

Viewforth Consulting Ltd

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Summary

This report presents analysis of the economic impact on Wales of international students studying at the eight universities in Wales during the academic and financial year 2015/16. 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 the per-capita impact of EU and Non-EU students. It also analyses and presents the distribution of overall economic impact across Wales.

The study was undertaken during autumn 2017 for Universities Wales, at a time when there are many new challenges facing Welsh higher education on the international stage. Increased Home Office immigration restrictions are impacting on Non-EU student recruitment and the June 2016 referendum vote to leave the EU has created very uncertain conditions for EU students (and indeed EU national staff) in the universities. The current report updates an earlier 2015 study and in presenting analysis of the 2015/16 economic impact on Wales of International students, can help build an evidence base to inform policymakers and the general public of the wider benefits of hosting international students.

Headline findings

There were 22,190 international students in Wales in 2015/16 - 25% from EU, 75% from outside the EU. This comprises 17% of the total 128,670 students in Wales.

Output

The expenditure of international students and their visitors generated £716m of Welsh output across Wales.

- Every Non-EU student generated £34.9k of Welsh output.
- Every EU student generated £19.3k of Welsh output.

Export Earnings

International students and their visitors spent £487 million in 2015/16. This was equivalent to 3.7% of all 2015 Welsh exports. This is also greater than the total 2016 international tourist and visitor spend in Wales.

Jobs

The spending of international students and their visitors generated over 6850 full time equivalent jobs in Wales, equivalent to nearly 0.5% of Welsh employment. 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 6 EU students in Wales.

GVA

The spending of international students and their visitors generated £372 million of Welsh GVA – which was equivalent to 0.7% of 2015 Welsh GVA.

- Every Non-EU student generated £18.5k of Welsh GVA.
- Every EU student generated £9.3k of Welsh GVA

Distribution of impact

Most of the impact was felt in university areas, where students are based. However the analysis also showed that impact flowed across Wales including to areas that do not have a university presence.

- 1,598 jobs and £82m of GVA were created in areas which do not have a university presence

Overall the report shows the significant and positive economic benefit to Wales of hosting international students. However, the impact of international students on the Welsh economy is sufficiently substantial that a drop in student numbers has quite clear negative ramifications. Over the 2 years since the last study was undertaken (of the 2013/14 period) numbers of non-EU students have fallen by 3230 or 16.2%. Based on this report's analysis, this equates to 1098 additional Welsh jobs and £59.8m of Welsh GDP. The reasons for the fall in numbers requires further investigation but it is likely that a major factor is the increasingly strict immigration and visa regulations for overseas (non-EU) students.

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 The Welsh Government also highlighted that universities can provide an additional opportunity to strengthen and extend Wales' international presence. [1] Universities are globally connected institutions, with research links stretching across the world. They also attract students from abroad. In 2015/16 Welsh universities attracted over 22,000 students from 140 countries to come to study in Wales. This creates potential to strengthen cultural and economic links between Wales and all the originating countries. Active alumni networks help make such benefits a lasting phenomenon, attracting alumni back to Wales and building international links.

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.

1.1. Background to the study

This study was undertaken during autumn 2017 for Universities Wales, at a time when there are many new challenges facing Welsh higher education on the international stage. Increased Home Office immigration restrictions are impacting on Non-EU student recruitment and the June 2016 referendum vote to leave the EU has created very uncertain conditions for EU students (and indeed EU national staff) in universities. The current report updates an earlier 2015 study and in presenting analysis of the 2015/16 economic impact on Wales of international students can help build an evidence base to inform policymakers and the public of the wider benefits of hosting international students.

International students have an important and immediate impact on the Welsh economy. The students themselves can be regarded as 'long stay tourists', spending money in Wales. They can also attract more short stay leisure visitors from abroad (parents, relations and friends) who spend money on hotel accommodation and local amenities. All of their spending creates jobs in Wales and contributes to Welsh GDP. This is the primary focus of this study.

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

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

EU and Non-EU students. It further analyses and presents the distribution of overall economic impact across Wales.

1.2. 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.[2] 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 2016 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 other parts of the UK both at a sectoral level and of many individual universities. [3] An additional 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.

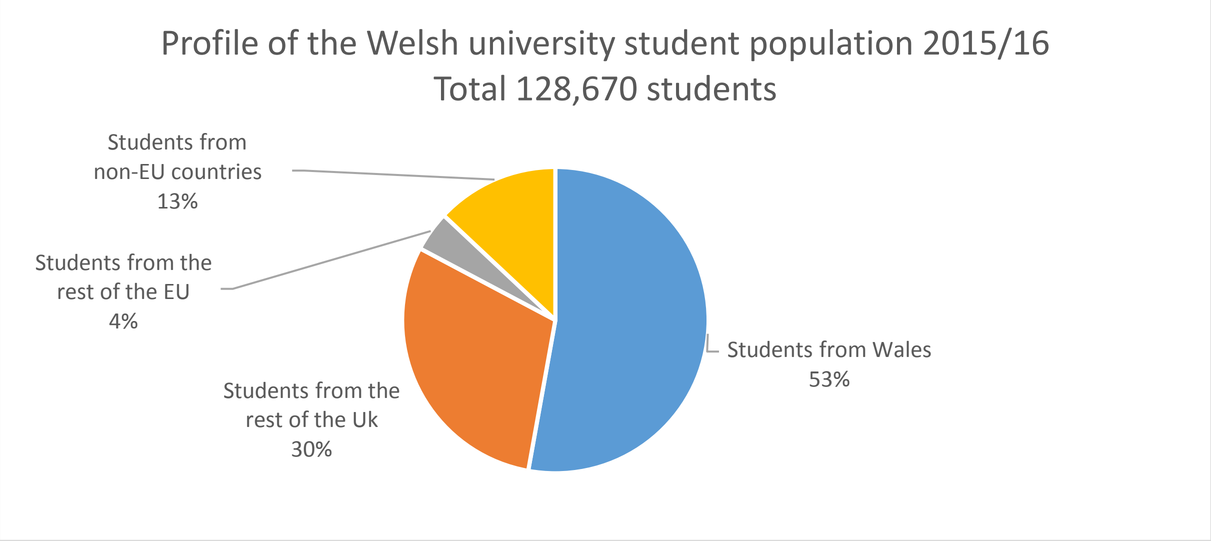
[2] HESA Students in Higher Education 2015/16 and HESA Finances of HE Providers 2015/16
[3] See for example, The impact of Universities on the UK economy UUK (2014), The impact of higher education institutions in England (2014) The economic impact of higher education on Northern Ireland (DELNI 2015) The economic impact of higher education in Wales HEW 2013 For more report examples see www.viewforthconsulting.co.uk

2. Profile and characteristics of student population

There were 22,190 international students, from both non-EU countries and the rest of the EU, at Welsh universities in the year 2015/16, originating from 140 different countries around the globe. 5460 students came from other EU countries (beyond the UK) and 16,730 came from outside the EU.

Figure 1 presents the profile of the entire Welsh university student population, showing how international students made up 17% of the total 128,670 students.

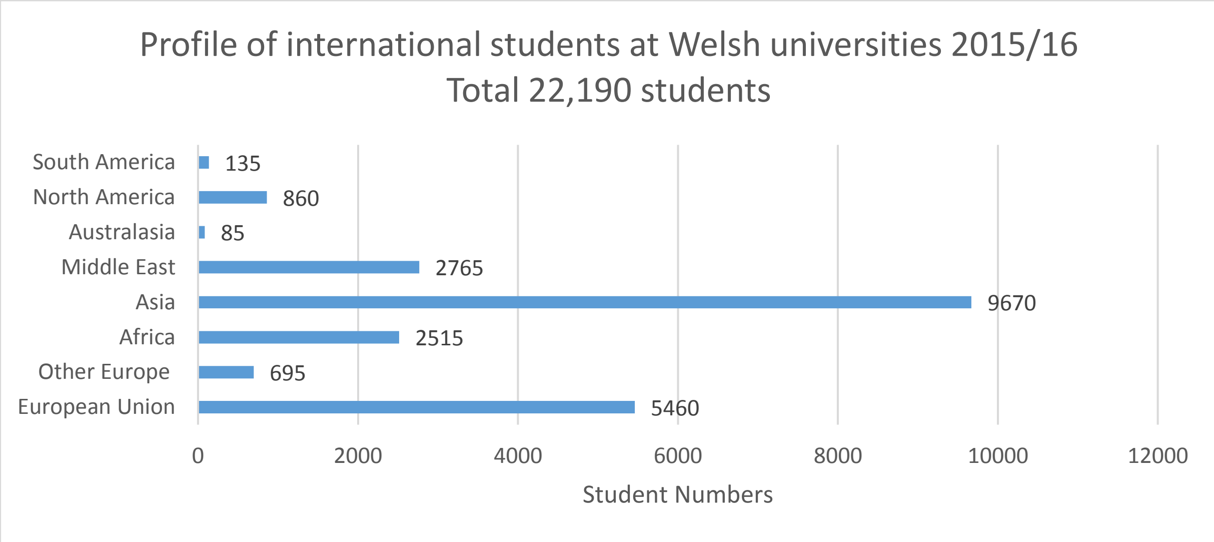
Figure 1: All Welsh university students



Source: HESA Students in Higher Education 2015/16

Looking more closely at the international student population 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 parts of the UK as well. The largest number of international students in Wales, nearly 44% of the total, come from Asia, with the next largest grouping being EU students (25%.). There are also significant numbers from Africa (11.3%) and the Middle East (12.5%.)

Figure 2: Profile of international students at Welsh universities

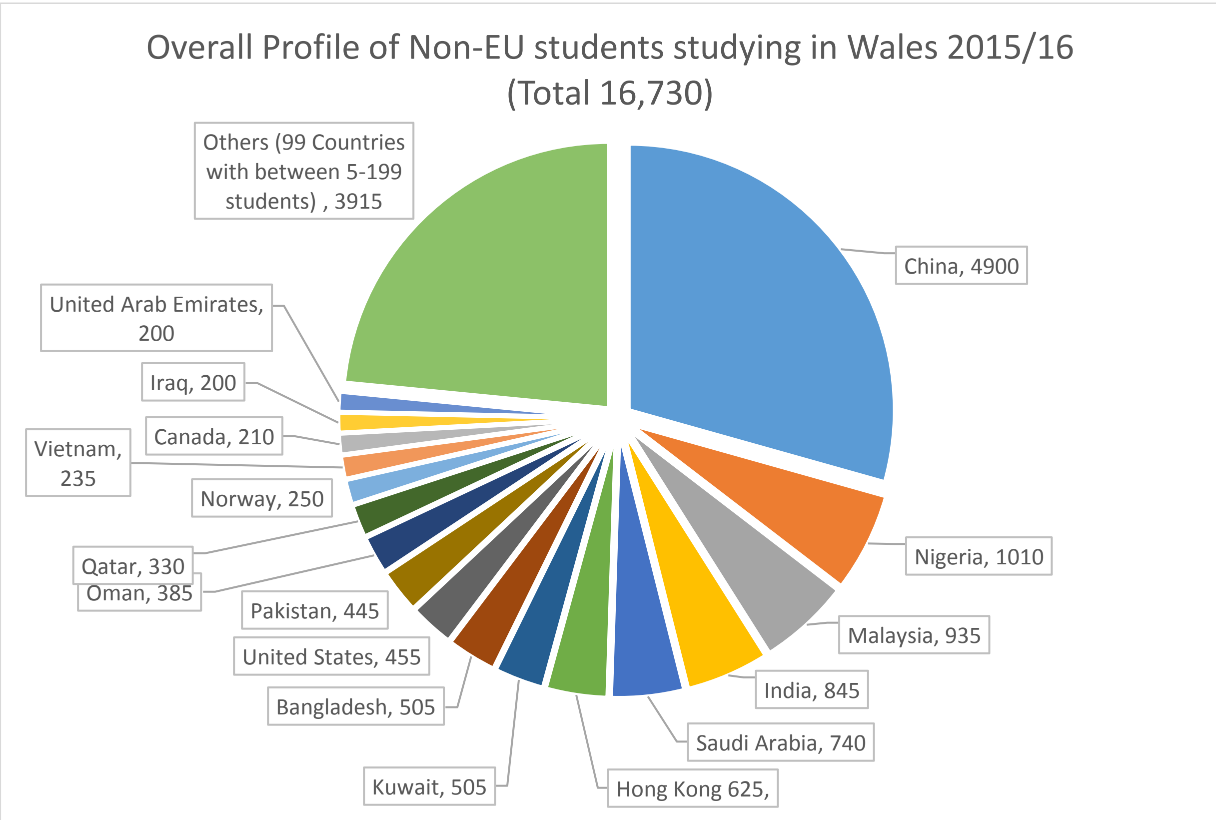


Source: HESA Students in Higher Education 2015/16

2.1 Non-EU students at Welsh universities

There are non-EU students from 116 different countries studying in Wales. Figure 3 gives the overall profile of all non-EU students. All of the countries named in the chart send at least 200 students each.

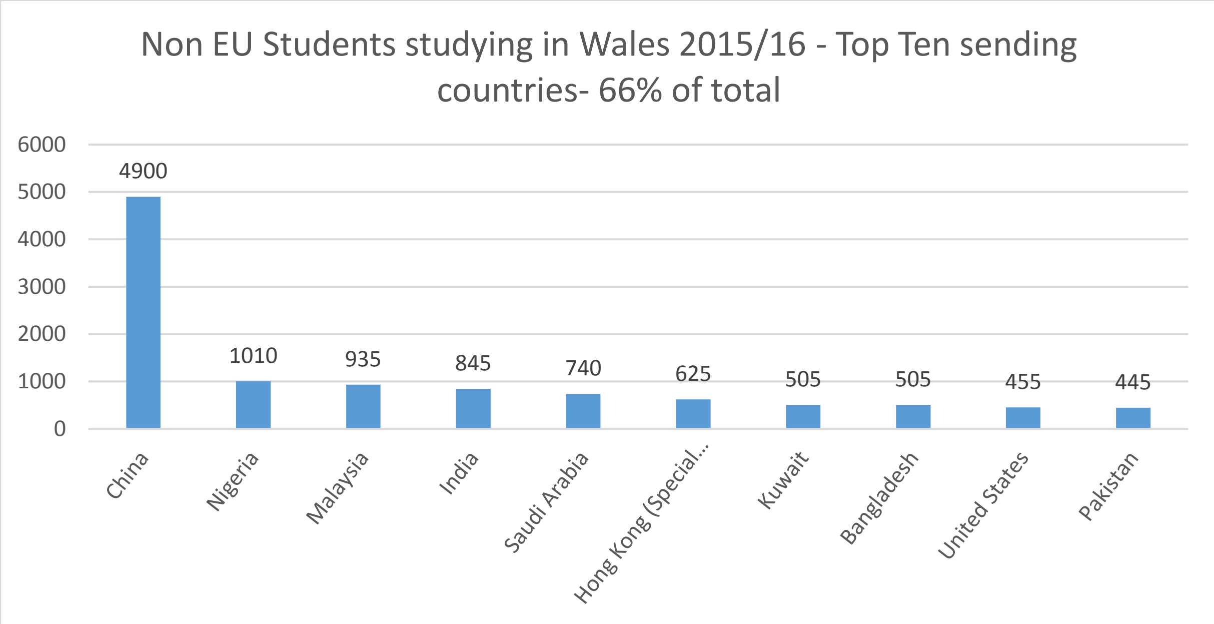
Figure 3: Profile of Non-EU students studying in Wales by domicile of origin



Source: HESA Students in Higher Education 2015/16

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 4900 students with the second largest group being from Nigeria.

Figure 4: Non-EU students studying in Wales – Top Ten Sending Countries 2015/16

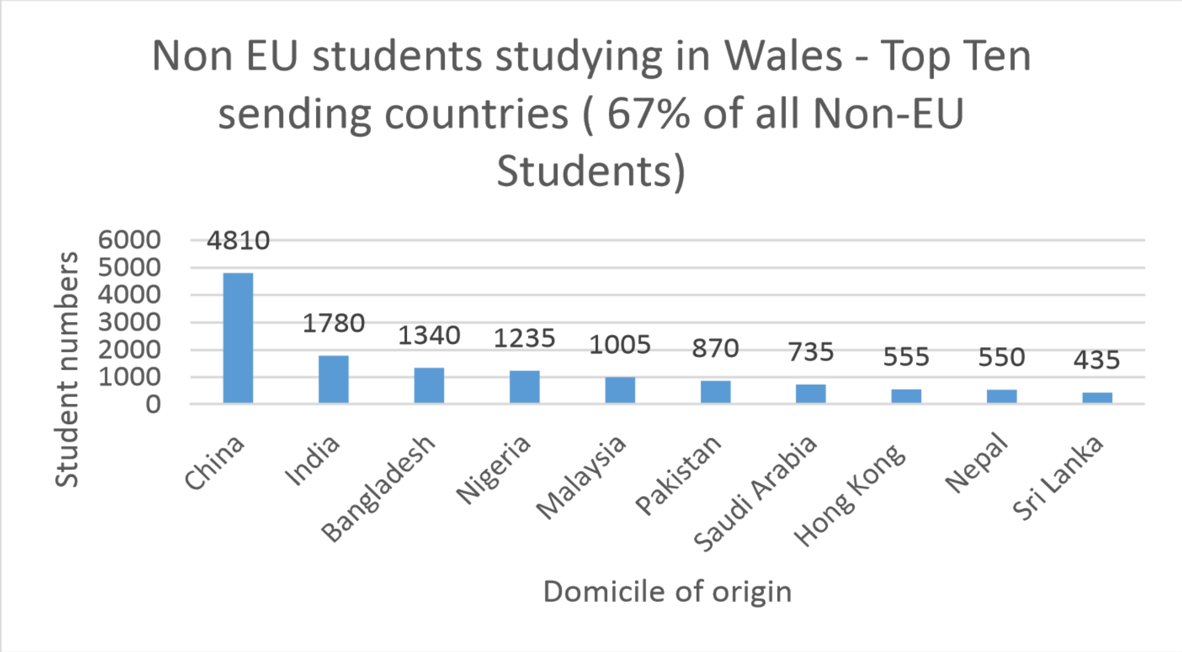


Source: HESA Students in Higher Education 2015/16

China is regarded by the Welsh Government as a key international market for Wales, with Welsh Government representation in the country, and there has been a slight increase in Chinese student numbers since the last study, with an additional 90 students from China.[4] However other comparisons with the picture from 2 years ago also highlights quite noticeable changes in the profile and position of the other top sending countries. In particular there has been a clear drop in the numbers of students from South Asia, which also has been, and continues, to be an important market for Welsh Higher Education. There were 2,915 fewer students from the South Asian countries of Bangladesh, India, Pakistan, Nepal and Sri Lanka. Figure 5 presents the previous position in 2013/14.

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

Figure 5: Non-EU Students studying in Wales – Top Ten sending Countries in 2013/14



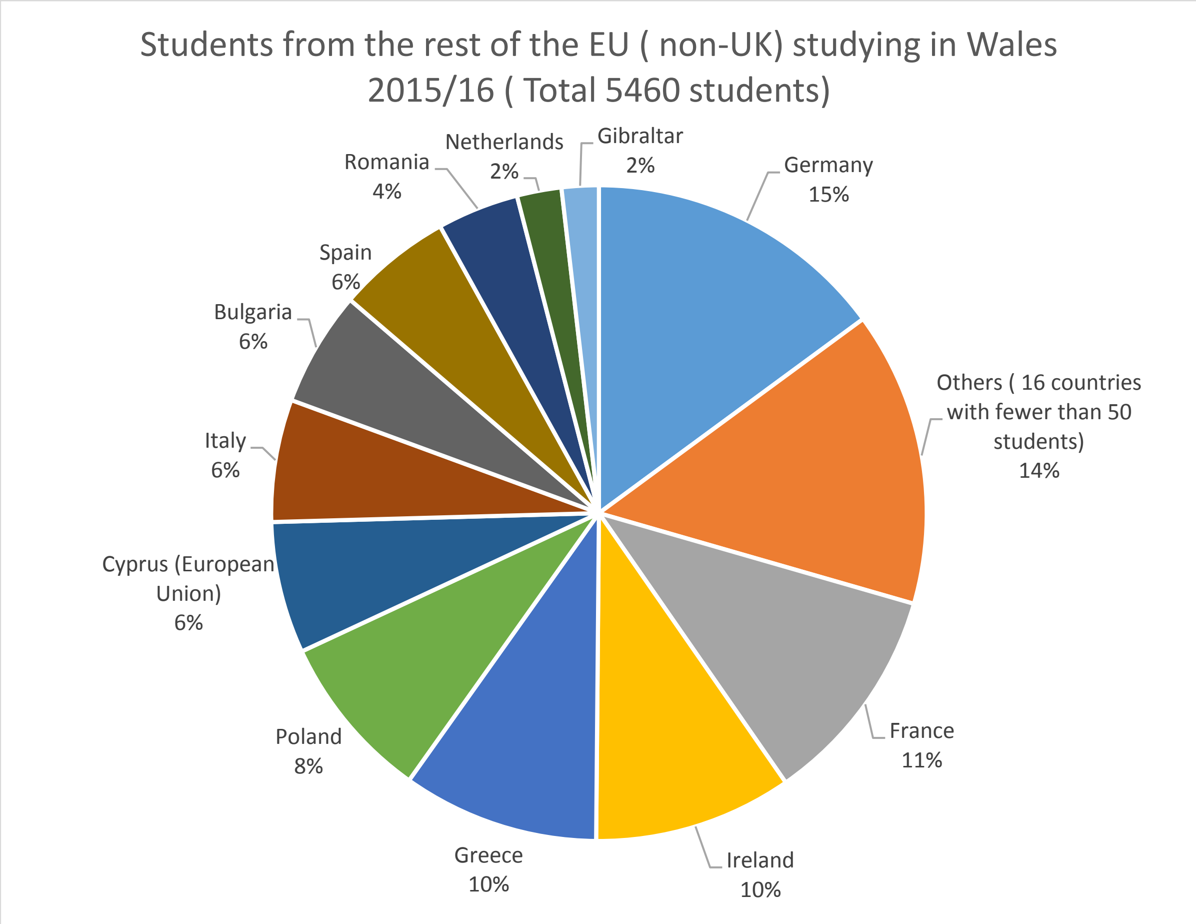
Source: HESA Students in Higher Education 2013/14

The most likely reason for these quite noticeable changes is the stricter Home Office immigration and visa regulations affecting overseas (non-EU) student admissions. Numbers of students from South Asia fell across UK Higher Education but Wales appears to have been disproportionately affected –overall UK numbers dropped by 22% in the two-year period compared to a 59% fall in Wales.

2.2 EU students studying in Wales

Numbers of EU students studying in Wales have remained much the same over the past two years. Of the 5460 EU students studying in Wales, the majority came from Germany (815 students). The EU continues to be important to Welsh higher education both in terms of attracting students and in the research collaborations that exist between Welsh universities and counterparts across the EU.

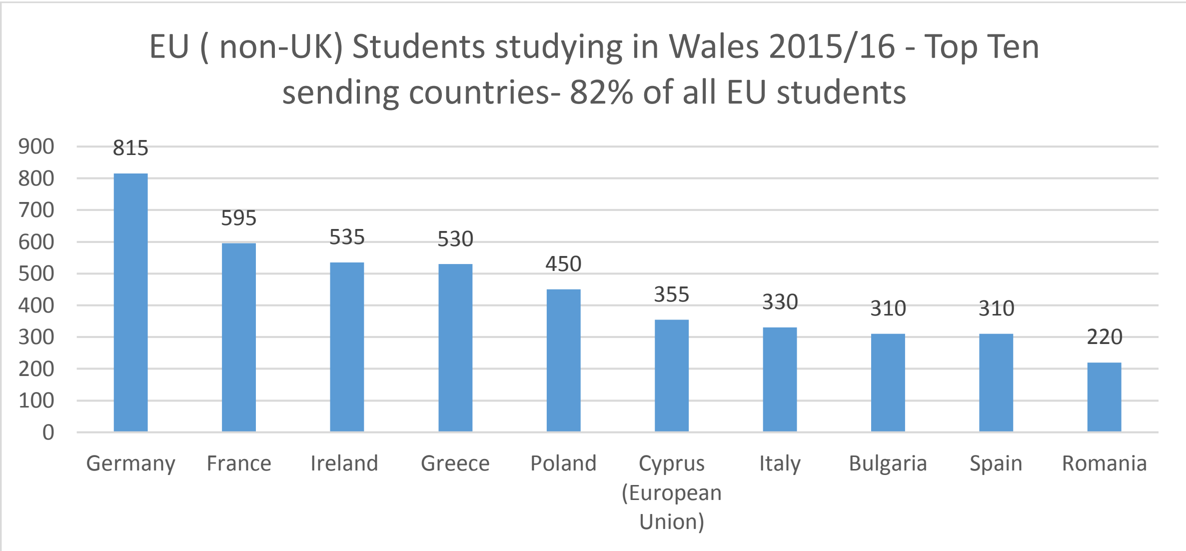
Figure 6: Profile of EU students in Wales by Domicile of Origin



Source: HESA Students in Higher Education 2015/16

Figure 7 shows the top ten EU countries with the highest number of students studying in Wales.

Figure 7: Students from the rest of the EU (non-UK) studying in Wales 2015/16 – Top Ten Sending Countries



3. International Students and the Welsh Economy

2.1 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. In the study year for this report undergraduate EU students were 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 was likely to be UK –sourced money. EU students also have more possibilities to work part-time – and UK sourced earnings are not regarded as export earnings. Therefore, the estimates of expenditure made in this analysis take account of these points as far as possible so that expenditure estimates for students (both in relation to fees and personal expenditure) are estimates of expenditure from non-UK sources only.[5]

2.2 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 just over £185 million.

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

£m	Tuition Fees (£m)	Other payments to the Universities (£m)	Total (£m)
Non-EU Students	150.52	23.20	173.72
EU Students	7.72	3.74	11.46
TOTAL	158.24	26.94	185.18

Source: Analysis of HESA Finances of HE Providers 2015/16

2.3 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

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

student expenditure carried out by the former 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 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 £280 million. Expenditure estimates were made separately for EU and non-EU students, taking account of their different profiles and types (undergraduate vs postgraduate, full-time vs part-time, etc.)

Table 2: Estimates of student off-campus expenditure

£m	Total Non-Fee Expenditure	MINUS Estimated non-fee payments to Universities	Total Off-Campus personal Expenditure
Non-EU Students	231.97	23.20	208.77
EU Students	74.82	3.74	71.08
TOTAL	306.79	26.94	279.85

Source: Analysis of former Department for Business, Innovation and Skills (BIS) estimates on international student expenditure (2013) and of HESA University residence income data

This shows that export earnings related to international students studying in Wales (taking their fee payments and personal expenditure together) came to just over £465 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 £22.4 million. Including the related visitor expenditure therefore, the overall export earnings associated with international students amounted to £487 million. This was equivalent to 3.7% of 2015 Welsh exports. [6] The personal (non-fee) expenditure alone of international students and their associated visitors (£329m in 2015/16) was equivalent to 74% of total 2016 international visitor expenditure in Wales. [7]

It is worth highlighting, although not the focus of this study, that 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 £57 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 £544 million in 2015/16.

[6] StatsWales (2017) Total 2015 Welsh Exports (Goods) were £13.3 billion.

[7] *Travel Trends 2016* (ONS 2017) Total international visitor spend in Wales in 2016 came to £444m. This included all international tourists and international business visitors.

4. Modelling the economic impact of international students

There are many different benefits to Wales of having international students studying in its universities. 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. 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 universities, as well as making a range of other payments (for those staying in university residence, for catering and related expenses.) 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 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.

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 described above - impact generated through the payments made to universities and impact generated through student personal off-campus expenditure.

Impact generated through 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 was modelled through a different path to that of students.

2.1 Impact generated through the payments made to 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 in Tables 3 and 4. Overall around 12.2% of the total university impact was attributable to fees income from international students (11.5% to Non-EU students and 0.8% to EU students.)

Table 3 shows the student share of university impact on Wales. The estimate of fees paid by EU students only includes the fees likely to be paid from international sources. In 2015/16 EU undergraduates were able to apply for the tuition fee grant on the same basis as Welsh students. However as this is UK (Welsh Government) sourced funding it could be argued that this is not be additional to the Welsh economy and hence it was excluded.

Table 3: Share of the Welsh Universities' impact in Wales attributable to international students (2015/16)

	Overall University Impact (Direct & Secondary)	Share attributable to Non-EU Students	Share Attributable to EU students (the element supported by non-UK funding sources)	Total attributable to International Students
Output generated in Wales	£3025m	£347m	£23m	£370m
Jobs generated in Wales	32330 FTE	3709 FTE	245 FTE	3954 FTE
Welsh GVA generated	£1762m	£202m	£13 m	£215m

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.

Table 4: Share of the Welsh Universities' impact in the rest of the UK attributable to international students 2015/16

	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	£508m	£58m	£4m	£62m
Jobs generated in rest of UK	4465 FTE	512FTE	34 FTE	546 FTE
GVA generated in rest of UK	£263m	£30m	£2m	£32m

Source: Viewforth Modelling System Analysis

2.2 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. Table 5 presents the impact of off-campus expenditure on Wales.

Table 5: Impact of Off-Campus Expenditure of University students in Wales 2015/16

	Output Impact on Wales (£m)	Jobs Generated in Wales (FTE)	GVA generated in Welsh Industries (£m)
Non-EU students	£238m	1991 FTE	£107m
Rest of EU Students	£83m	692 FTE	£37m
TOTAL	£321m	2683 FTE	£144m

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. This is shown in Table 6

Table 6: Impact generated in the rest of the UK by the off-campus expenditure of International students in Wales. 2015/16

	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	£80m	696 FTE	£40m
Rest of EU Students	£28m	242 FTE	£14m
TOTAL	£108m	938 FTE	£54m

Source: Viewforth Modelling System Analysis

2.3 Overall Impact on Wales of international student expenditure

Combining the impact from both types of its expenditure, that made through universities and that made off-campus by students enables the overall impact of students to be presented in Table 7. This shows that international students (both non-EU and rest of EU students together) generated £691m of output, created 6637 FTE jobs and contributed £360m to Welsh GDP.

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

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	**£347m**	£238m	£585m
EU Students	**£23m**	£83m	£106m
TOTAL	**£370m**	£331m	£691m
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	**3709 FTE**	1991 FTE	5700FTE
EU Students	**245 FTE**	692 FTE	937 FTE
TOTAL	**3954 FTE**	2683 FTE	6637 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	**£202m**	£107m	£309m
EU Students	**£13m**	£37m	£50m
TOTAL	**£215m**	£144m	£360m

Source: Viewforth Modelling System Analysis

2.4 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 is of particular policy relevance when the implications for the economy of expanding or contracting international student numbers are considered. We analysed the per capita impact of EU and non-EU students separately because of the different policy, immigration and regulatory environment pertaining to the two different groups of students.

The per capita impact focuses on the impact directly related to student expenditure, both through payments to 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.

Table 8: Estimated average per capita student expenditure from non-UK sourced funds

	Non-EU Students	EU Students
Total estimated average per capita expenditure in the study year	£22,862	£15,117
Of which paid to the University from non-UK sourced funds (for fees and accommodation etc.)	£10,384	£2,099
Of which spent off campus	£12,479	£13,018

Source: Viewforth Modelling System Analysis

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 in 2015/16 generated £34.9k of Welsh output, £18.5k of Welsh GVA and creates 0.34 FTE jobs in Wales.
- Every EU student studying in Wales on average generates £19.3k of Welsh output, £9.3k of Welsh GVA and 0.17 FTE jobs.

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

Table 9: Per Capita impact of Non- EU students on Wales and the rest of the UK 2015/16

OUTPUT	**Per Capita Impact (Wales)**	Per Capita impact (rest of UK)	Per Capita (Total)
Non-EU Students			
Generated through payments to the Universities	£20,737	£3,480	£24,217
Generated through off-campus spending	£14,204	£4,780	£18,984
Total	£34,941	£8,260	£43,201
EMPLOYMENT	**Per Capita Impact (Wales)**	Per Capita impact (rest of UK)	Per Capita (Total)
Non-EU Students			
Generated through payments to the Universities	0.22 FTE	0.03 FTE	0.25 FTE
Generated through off-campus spending	0.12 FTE	0.04 FTE	0.16 FTE
	0.34 FTE	0.07 FTE	0.41 FTE
GVA	**Per Capita Impact (Wales)**	Per Capita impact (rest of UK)	Per Capita (Total)
Non-EU Students			
Generated through payments to the Universities	£12,083	£1,800	£13,883
Generated through off-campus spending	£6,414	£2,384	£8,798
Total	£18,497	£4,184	£22,681

Source: Viewforth Modelling System Analysis

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

OUTPUT 2015/16	**Per Capita Impact (Wales)**	Per Capita impact (rest of UK)	Per Capita (Total)
EU Students			
Generated through payments to the Universities	£4,191	£703	£4895
Generated through off-campus spending	£15,117	£5,088	£20205
Total	**£19,309**	£5,791	£25,100
EMPLOYMENT	**Per Capita Impact (Wales)**	Per Capita impact (rest of UK)	Per Capita (Total)
EU Students	0.09 FTE	0.01 FTE	0.1 FTE
Generated through payments to the Universities	0.04 FTE	0.01 FTE	0.05 FTE
Generated through off-campus spending	**0.13 FTE**	0.04 FTE	0.17 FTE
	0.17 FTE	0.05 FTE	0.22 FTE
GVA	**Per Capita Impact (Wales)**	Per Capita impact (rest of UK)	Per Capita (Total)
EU Students			
Generated through payments to the Universities	£2,442	£364	£2,806
Generated through off-campus spending	£6,828	£2,537	£9,364
Total	**£9,270**	**£2,900**	**£12,171**

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 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. 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 2016 reported through the IPS and Travel Trends (2017), who indicated that the primary purpose of visit was to see family and friends. The Annual Population Survey (2015) also provided 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 8% 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 21% of North American 'friends and family' visits were considered to be to students, with 35% 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 56,136 international visits in 2015/16 attracted as a result of a friend or family member studying in Wales, with an average spend per visit of £398. The impact of this expenditure was modelled, and the results are presented in Table 11.

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

	Generated in Wales	Generated in rest of UK	Total generated in UK
Output	**£26.41m**	£8.89m	£35.30m
Jobs	**221 FTE**	77 FTE	298 FTE
GVA	**£11.93m**	£4.43m	£16.36m

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.

5.1 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 was substantial. Total spend in Wales of international students and visitors (including fees and personal spending) came to £487m. This was larger than the entire estimated international tourist and visitor spend in Wales in 2016 (Travel Trends 2006.) Overall impact results are presented in Table 12. This shows that in total international students and visitors generated £716m of output in Wales in 2015/16. They also created 6857 FTE jobs and contributed £372m to Welsh GDP.

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

Total Output Impact £m 2015/16			
	Impact on Wales	Impact on Rest of the UK	Total UK Impact
Non-EU Students	**£585m**	£138m	£723m
EU Students	**£105m**	£31m	£137m
Visitors to Students	**£26m**	£9m	£35m
TOTAL	**£716m**	£178m	£895m
Employment Impact FTE jobs			
	Impact on Wales	Impact on Rest of the UK	Total UK Impact
Non-Eu Students	**5700 FTE**	1208 FTE	6908 FTE
EU Students	**936 FTE**	276 FTE	1212 FTE
Visitors to Students	**221 FTE**	77FTE	298 FTE
TOTAL	**6857 FTE**	1561 FTE	8418 FTE
Total GVA Generated £m			
	Impact on Wales	Impact on Rest of the UK	Total UK Impact
Non-EU Students	**£309m**	£70m	£379m
EU Students	**£51m**	£16m	£67m
Visitors to students	**£12m**	£4m	£16m
TOTAL	**£372m**	£90m	£462m

Source: Viewforth Consulting Analysis. Note: Sums may not total due to rounding

6. Distribution of economic impact across Wales

This study was extended to include 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:

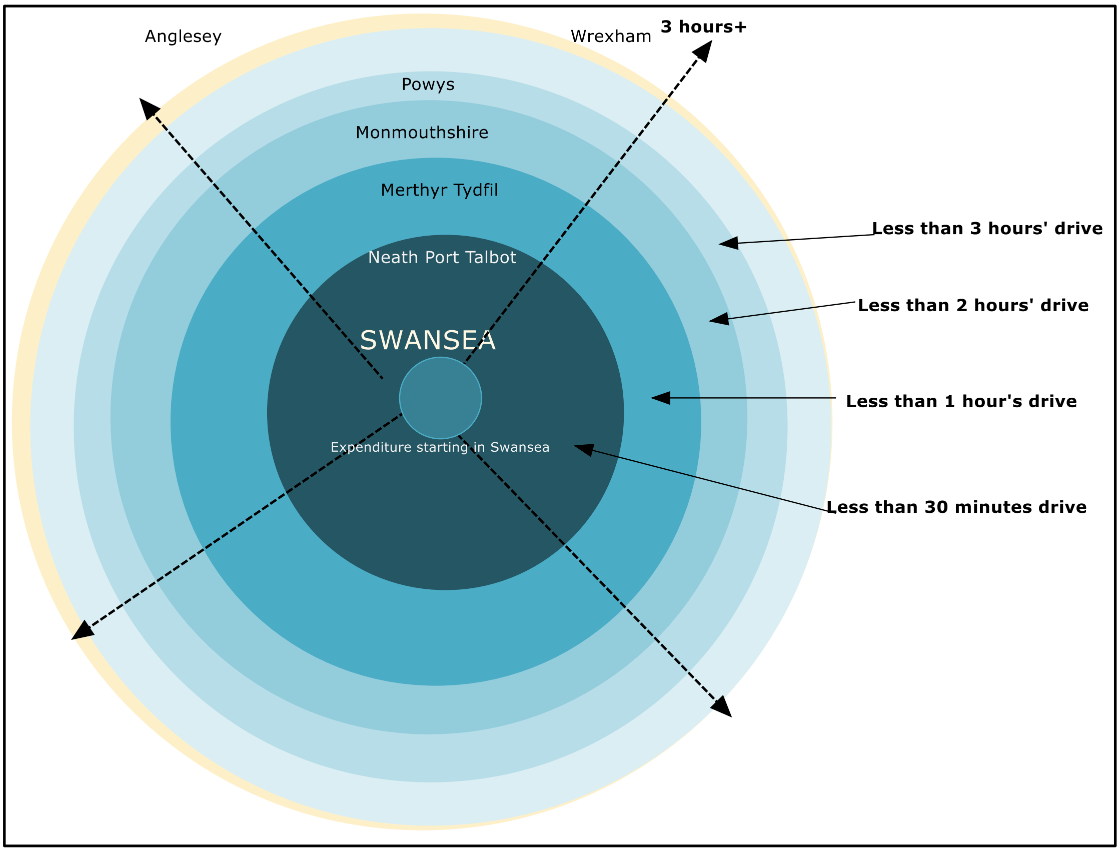
- Students pay fees to universities, who then re-spend that money, generating economic activity in industries across Wales.
- Students and their visitors spend money in Wales on food, accommodation, clothes, entertainment, travel and other personal expenses. This creates demand in consumer related industries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

6.1 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.[8]

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.

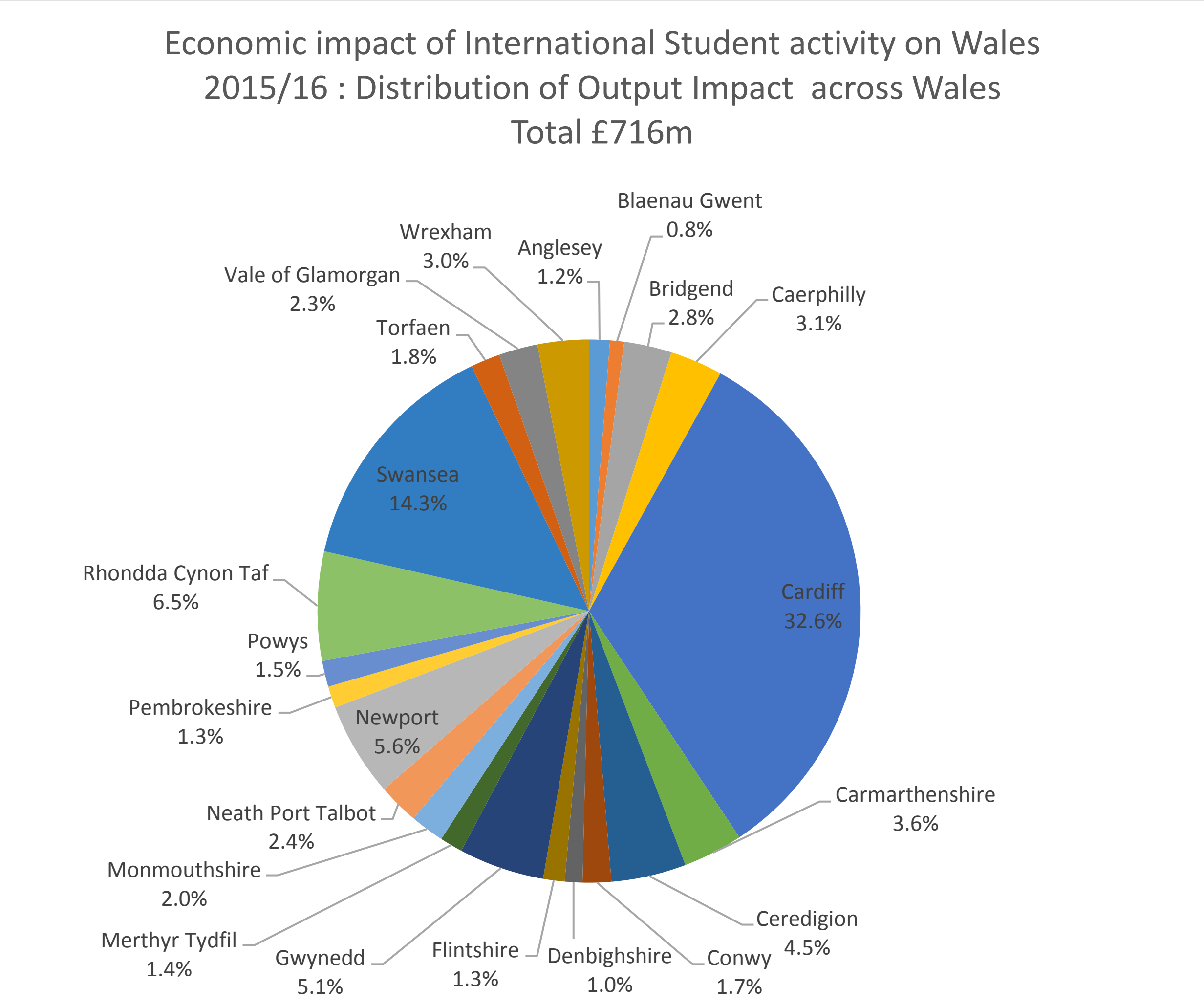
The impact observed in Gwynedd, for example, includes not only the impact generated through student payments to Bangor University and expenditure of Bangor University's international students but also includes economic ripple effects from the impact of international students in other parts of Wales including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

[8] 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.

6.2 Results of local impact analysis

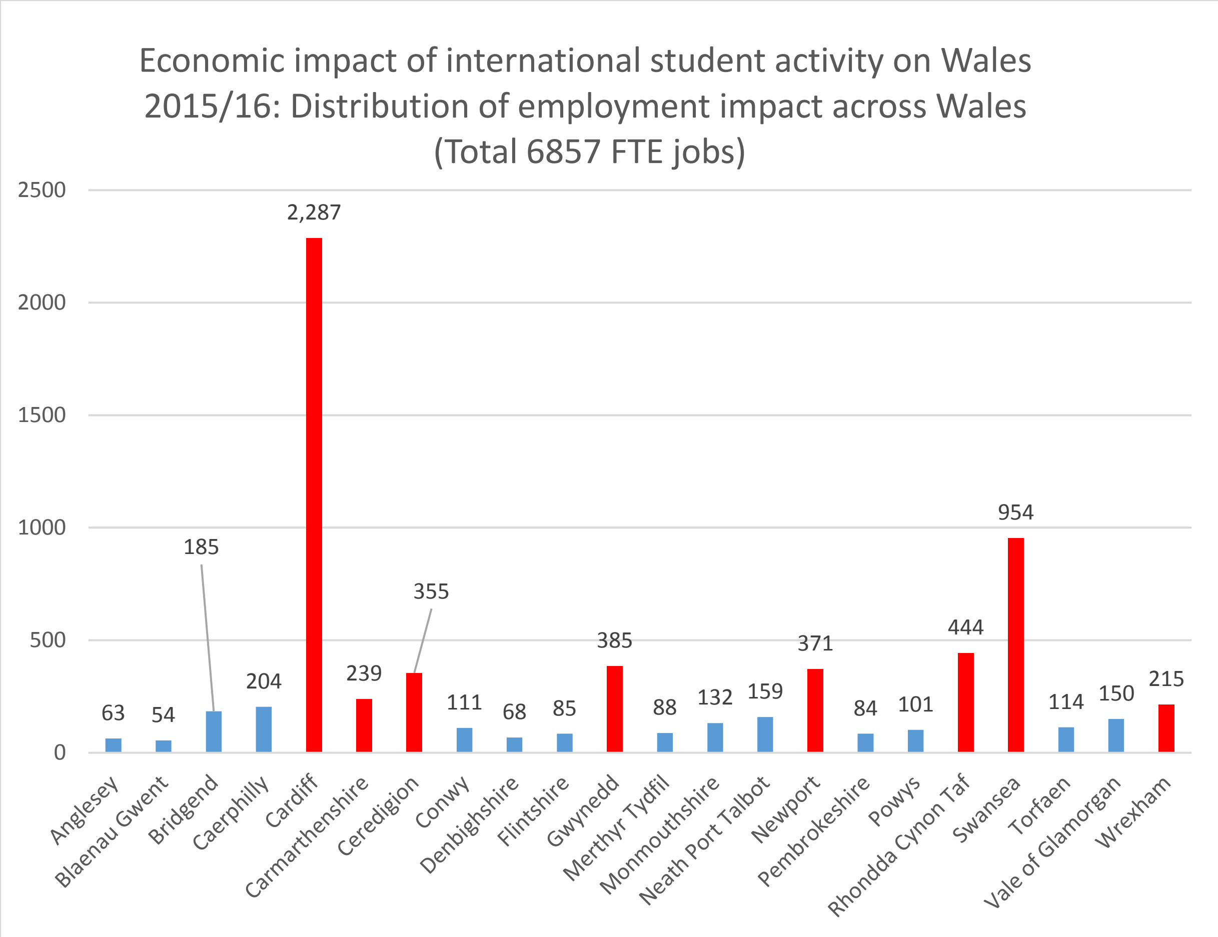
The results for detailed analysis of impact across the 22 Local Authority areas of Wales are presented below. Figure 9 shows how the impact of student and visitor expenditure flows out across and affects all areas of Wales. The impact on employment can be seen quite clearly in Figure 9.

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 universities and outside 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 universities in those areas by the fees paid to universities as well as the greater concentrations of spending by students in those areas.

Table 6 gives an insight into the relative significance of the employment generated by Welsh universities by showing the jobs generated in the context of total workplace employment in each area. Overall the activities of Welsh university international students generated 0.49% of Welsh employment.

Table 13: Relative local importance of Jobs generated by International Students in Wales

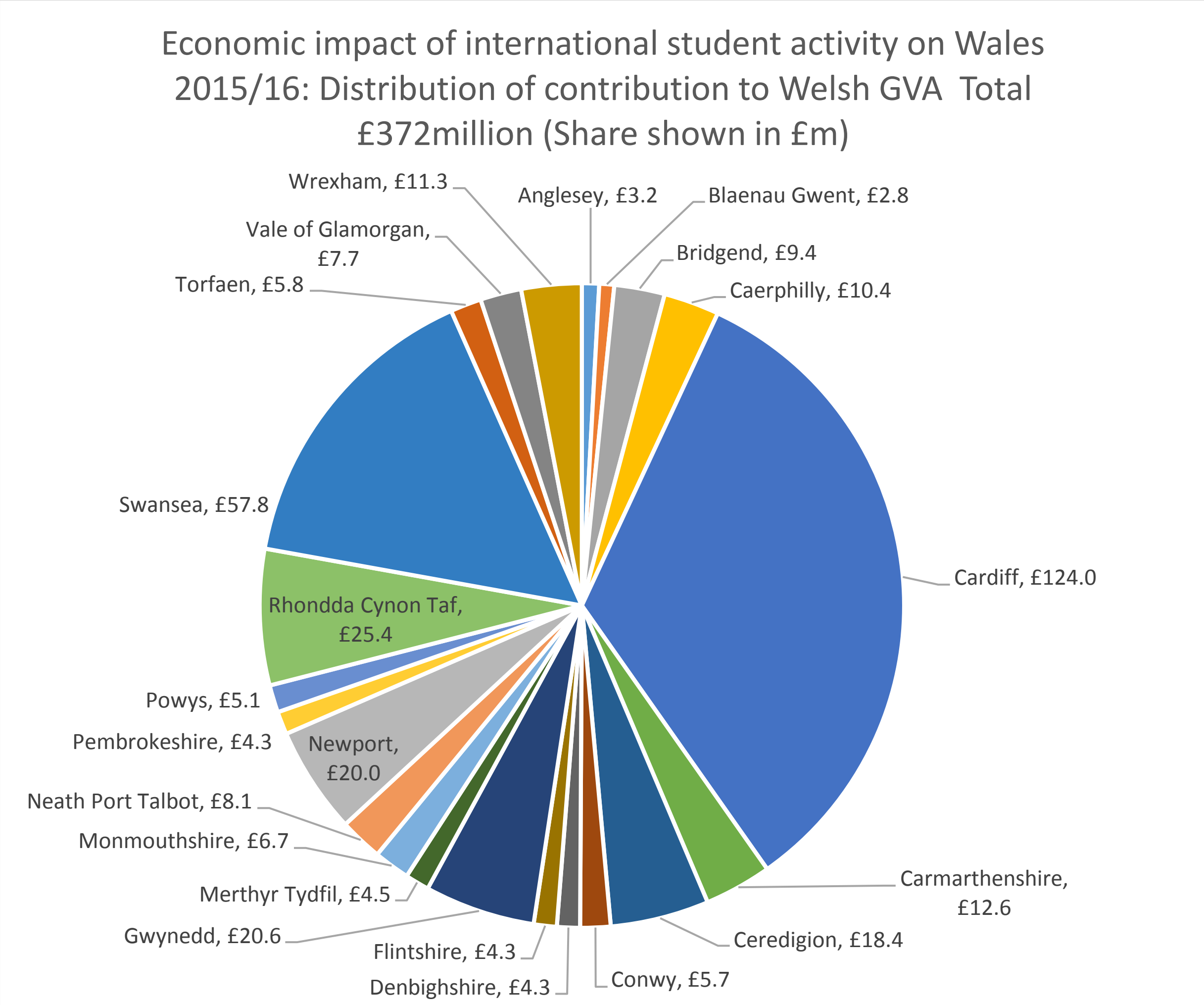
Local Authority	FTE Jobs dependent on International Students at Welsh universities (2015/16)	Equivalent percentage of local employment[9]
Anglesey	63	0.25
Blaenau Gwent	54	0.26
Bridgend	185	0.29
Caerphilly	204	0.35
Cardiff	2296	1.02
Carmarthenshire	239	0.29
Ceredigion	355	0.94
Conwy	111	0.24
Denbighshire	68	0.16
Flintshire	85	0.14
Gwynedd	385	0.60
Merthyr Tydfil	88	0.35
Monmouthshire	132	0.29
Neath Port Talbot	159	0.31
Newport	371	0.49
Pembrokeshire	84	0.15
Powys	101	0.16
Rhondda Cynon Taf	444	0.53
Swansea	954	0.80
Torfaen	114	0.30
Vale of Glamorgan	150	0.34
Wrexham	215	0.29
ALL WALES	6857	0.49

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.

[9] 2015 Workplace employment by Local Authorities (StatsWales 2016)

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.

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



Source: Viewforth Gravity Modelling System Analysis

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 2015/16. 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 6 EU students.

Non-EU students have a greater impact per capita than EU students, largely due to the higher fees they tend to pay.

The overall impact of international students and their visitors generated £372m GVA in Wales, equivalent to nearly 0.7% of all 2015 Welsh GVA.[10] They generated over 6850 Welsh jobs, equivalent to nearly 0.5% of Welsh Workplace employment in 2015[11].

By attracting international students to come and study in Wales, 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.”[12]

The impact of international students on the Welsh economy is sufficiently substantial that a drop in student numbers has quite clear negative ramifications – and a rise in numbers would bring observable benefits. Over the 2 years since the last study was undertaken (of the 2013/14 period) numbers of non-EU students have fallen by 3230 or over 16%. Based on this report’s analysis 3230 non EU students equates to 1098 additional Welsh jobs and £59.8m of Welsh GDP.

The largest fall in numbers has been in traditionally important target markets of South Asia, with 2915 fewer students – a 59% drop since 2013/14. The fall in numbers from South Asia was not offset by an increase in students from other parts of the world. The reasons for the fall in numbers requires further investigation but it is likely that a major factor is the increasingly strict immigration and visa regulations for overseas (non-EU) students requiring Tier 4 visas.

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[10] StatsWales 2017 Welsh GVA in 2015 stood at just over £55.7 billion.

[11] StatsWales 2016. Welsh Workplace 2015employment came to 1.45 million

[12] 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)

All UK Universities have been affected by this, with an overall drop of 22% across all the UK in students from South Asia in the same two year period. As the affected countries include some of the Welsh Government’s key target export markets (for instance India), this may be a matter of broader concern to policymakers beyond the immediate negative economic effects.

Numbers of students from EU countries held up reasonably well in the two-year period – the slight drop (185 students) could be part of normal fluctuations year to year. However, looking to the future post-Brexit this market is also likely to be affected with implications for the Welsh economy and international trade relationships as well as for universities themselves.

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 2015/16. 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.

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. Additional data sources included the Producers' Prices Index, ONS Regional Accounts and Welsh specific data from the Welsh Government Statistics through StatsWales. The modelling system used was purpose-designed for UK higher education institutions and the mathematical 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 student expenditure were made drawing on the most recent (2017) Welsh Government Student Income and Expenditure survey as well as former Department for Business and Innovation (BIS) estimates of international student expenditure.

Appendix Two: References and Bibliography

Department for Business, Innovation and Skills (2013) Student Income and Expenditure Survey
2011/12 Research Paper Number 115

Higher Education Statistics Agency (HESA) (2017) publications on Finance, Staff and Students

Higher Education Funding Council for Wales publications
https://www.hefcw.ac.uk/home/home.aspx

HM Government (2013) International Education: Global Growth and Prosperity Department for Business, Innovation and Skills

Kelly, U., McNicoll, I & White, J (2014) The impact of universities on the UK economy Universities UK

Office of National Statistics Regional Accounts

Office of National Statistics Regional Summary of Labour Markets Headline Indicators

Office of National Statistics Business Register and Employment Survey (BRES)

Office of National Statistics Travel Trends 2016 (2017)

StatsWales: https://statswales.wales.gov.uk/Catalogue/Business-Economy-and-Labour-Market

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

Welsh Government Social Research Paper 30/2017 Student Income and 14/15 Welsh Domiciled Students

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

Appendix Four: List of Figures and Tables

<u>Figures</u>

<u>Tables</u>

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