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Universities Wales represents the interests of universities in Wales and is a National Council of Universities UK (UUK). Universities Wales' Governing Council includes the Vice-Chancellors of all Welsh universities and the Director of the Open University in Wales.

Welsh Higher Education Brussels (WHEB) is funded by all Welsh universities and the Higher Education Funding Council for Wales (HEFCW) to represent Welsh universities in Brussels and is based in Wales House in Brussels as part of the wider Welsh representation.

Introduction

Welsh universities have been strengthened and enhanced by their participation in European programmes, through their access to European funding and through their extensive engagement with universities, businesses and other organisations across Europe. Welsh universities have been partners, collaborators and innovators in many areas across the sciences, technology, health, social sciences and humanities with transformational benefits for Wales, the rest of the UK and for Europe. Wales has benefited from the significant flows of talented people and funding into Wales due to the UK's membership of the European Union. To limit or inhibit the flows of people, ideas and innovation that currently flow naturally across borders will damage Welsh higher education's ability to deliver its activities, which will have an impact on all areas of Welsh life, due to the significant contribution made by universities' activities to the Welsh economy and society.

It is vital that there is a full understanding of the significant impact of Brexit on Welsh higher education and the impact on Wales as a consequence. Post-Brexit Welsh universities must be able to access appropriate financial support, in an appropriate regulatory context and in a supportive policy environment to maintain and advance their activities. Welsh universities hope that the new UK-EU relationship will have as one of its key dimensions the higher education and research relationship that has been so important over the last four decades. This relationship, encompassing research and innovation collaboration and mobility, is a critical element in the continued prosperity and development of Wales, the UK and the EU.

Executive summary

The implications of a UK withdrawal from the EU are likely to impact upon all aspects of Welsh higher education activity. Concerns for Welsh universities posed by the UK exiting the European Union include:

Wales' higher education sector's reputation as a collaborator of choice in vital research is weakened, and access to key funding and collaboration mechanisms to support research excellence are lost, having knock-on implications for economic

growth and communities across Wales,

- Wales will lose existing academic talent from the EU, impacting upon the excellence of Wales' research base and the quality and diversity of teaching provision,
- Students in Wales will lose valuable opportunities to study abroad as part of their degree and Welsh universities will experience sudden, steep declines in EU student enrolments, which will have an economic and social impact on universities and communities,
- Welsh universities' activity to drive local and national growth, generate jobs and further prosperity will be hampered, especially if European Structural Funds are not replaced or replicated
- Opportunities to strengthen international trade and diplomatic relationships across Europe and the wider world through the international activities of universities will be significantly reduced or lost.

Such negative impacts on universities will have knock-on effects on all areas of Welsh life as Welsh universities are of such importance to Wales. The recent Universities Wales report on economic impact highlighted the critical role of universities in Wales and stated:

*'When compared to the rest of the UK, Welsh higher education is of greater relative importance to Wales, forming an even larger part of its economic base, than the UK higher education sector is to the UK overall.'*¹

Our universities in Wales are internationally competitive and a major economic asset, that bring widespread benefits to individuals, communities, the nation as a whole and government in Wales. The total combined impact of Welsh universities and their students on Wales' GVA came to nearly £2.4 billion - equivalent to 4.6% of all Wales GVA in 2013. Welsh universities bring in a total of £413 million of export earnings⁴ and income to Wales through knowledge exchange between universities and the public, private and third sectors was £201 million in 2013/14⁵.

Post-Brexit, Universities can play a central role in driving inclusive economic growth locally, regionally and nationally; improving productivity as part of a new industrial strategy; and strengthening our international trade and diplomatic relationships across Europe and the wider world.

Welsh universities are transformational organisations both for their students and graduates but also for their local economies and communities. These benefits are also national and international as Welsh universities work with partners across the UK, across Europe and around the world.

This transformational impact however is dependent on Welsh Government securing the best deal for universities Post-Brexit, in order to support them to continue delivering for Wales.

¹ The Economic Impact of Higher Education in Wales, Universities Wales, January 2018

Learner Outcomes and Employability

Leaving the EU will have direct and indirect consequences for students and staff, both inside and outside the classroom. Issues around learner success and employability could include difficulties around the mutual recognition of qualifications and the comparability of qualifications. The UK system has benefited from extensive engagement and participation in a wide range of system reforms across Europe around quality assurance, mutual recognition of degrees and qualifications frameworks to improve the learner experience and employability. While much of this activity is undertaken at a broader European level the EU has played and will continue to play an important role in system development that could marginalise the UK.

The Professional Qualifications Directive provides a comprehensive EU system for the recognition of professional experience, enables labour market flexibility and promotes the automatic recognition of professional qualifications in EU and EEA countries. Leaving the Single Market could mean that the UK is no longer covered by the Directive which could reduce the value of UK degrees as EU students may be unsure about the transferability of their qualifications. In addition, UK residents' may face difficulties if they wish to work in the EU or if they study in the EU and wish to use their qualifications in the UK. It will be important to ensure that the areas around mutual recognition, standards and comparability in qualifications are included within the arrangements for the future UK-EU relationship.

Students and staff from EU member states are likely to face additional administrative and financial requirements to study and work in the UK. These requirements and the wider perceptions around the UK are likely to deter a number from coming to the UK. EU staff play a critical role in supporting the excellence of Wales' research activities as well as the quality and diversity of teaching provision. EU staff form over 10% of the academic workforce at Welsh universities.² The excellence and global competitiveness of Wales' research base relies on attracting and retaining the most talented researchers to pursue ground-breaking projects at Welsh universities, regardless of where they come from. Inability to recruit and retain the best researchers has serious risk of damaging our internationally excellent research reputation and losing the beneficial impact Wales' research has on Wales. The outstanding results of Welsh universities in the Research Excellence Framework (REF 2014) were reliant on high performing research teams, many of which are strengthened, if not dependent on, international mobility

European students make a significant contribution to Wales – academically, culturally and economically. In 2014/15 there were 5,424 EU students studying at Welsh universities who generated £150.3m for the Welsh economy and supported over 1,400 FTE jobs across Wales.³

² Higher Education Statistics Agency hesa.ac.uk

³ The Economic Impact of Higher Education in Wales, Universities Wales, January 2018

Changes to visa regulations and uncertainty as to long-term EU citizen's rights would lead to EU citizens wishing to come to the UK being unclear on visa requirements and eligibility, and facing an increase in bureaucracy and cost, particularly with regards to tuition fee costs. This would likely lead to a fall in EU students applying to study in Wales. A drop in student recruitment from the EU will have a significant financial impact on all Welsh universities. Such a drop would have a knock-on financial impact on the wider economy. A reduction in EU student numbers would also adversely affect the diversity of the student body, which broadens perceptions and prepares our graduates for an increasingly global world of work.

UK students and staff are also likely to face new requirements when considering mobility opportunities or drawing together research project consortia. Brexit potentially will limit opportunities for UK nationals to travel, study and work in the EU which could challenge learner success and employability. There could be additional requirements placed on UK nationals seeking opportunities in the EU as they will be third country nationals. These could relate to visa requirements, health insurance requirements and residence restrictions.

Students at Welsh universities have benefited from the opportunities to study and work elsewhere in Europe provided by the ERASMUS+ programme. Figures on student mobility from Welsh universities indicate that ERASMUS+ forms a major component of mobility for students at Welsh universities. ERASMUS+ provides over 40% of mobility opportunities for students based in Wales who undertake mobility within the EU⁴. In 2015/16 over 700 students at Welsh universities took part in the ERASMUS+ programme providing them with academic, career and life-enhancing opportunities. In the period 2007-14 over 4,500 students at Welsh universities participated in Erasmus+ mobility programmes and during the same period over 700 academics and teachers benefited from a mobility period.⁵

Key aspects of ERASMUS+ are the scope, as mobility opportunities are possible across Europe into academic programmes and also work placements, and there is also funding to support mobility. Modern languages departments rely heavily on ERASMUS+ funding to support the mobility of their students for whom experience of studying and/or working in another language is a critical component of their studies. The loss of this funding would undermine the viability of these departments and create financial difficulties for universities, apart from the educational and cultural losses arising from diminished modern languages departments.

Without the range of mobility and funding opportunities offered through ERASMUS+ it may be more difficult to promote mobility, particularly for disadvantaged groups who are already less likely to be mobile during their studies. Continued participation in the ERASMUS+ programme would be a pragmatic and cost-effective move for the UK given the expense and bureaucracy involved in

⁴ HEFCW data

⁵ British Council data

setting up an alternative replacement scheme at a national level at this scale. ERASMUS+ also has a high level of 'brand recognition' that could not be easily or quickly replicated.

Bilateral mobility programmes are already run by a number of Welsh universities with partners across Europe and beyond. These programmes could perhaps be enlarged and additional programmes could be developed to replace ERASMUS+. However, this would require considerable additional investment and management resource by universities. In a recent welcome development it appears that the EU has is willing to allow 'third country' participation in the next ERASMUS programme starting in 2021 which may enable UK participation subject to an appropriate financial contribution and administrative arrangements⁶.

Financial Sustainability and Investment Opportunities

Loss of direct and indirect funding and investment as a result of leaving the EU will likely impact upon not only the financial position of Welsh universities, but local and national economies and jobs and growth as a result.

Welsh universities have received significant funding from direct European funding such as the research and innovation programmes, Structural Funds and other programmes such as the territorial co-operation INTERREG programme. It is to be hoped that it may be possible for UK universities to have continued access to the research and innovation programmes after Brexit but the loss of the regionally-distributed Structural Funds will have significant and specific financial implications for Welsh universities. There are also major potential financial issues arising from the re- categorisation of EU students as international fee-paying students

As indicated in paragraph 17 there are significant numbers of EU students at Welsh universities. After the UK leaves the EU and transitional fee arrangements for EU students at UK universities phase out then EU students will become international student fee payers. Although the difference between UK/EU fees and international student fees in many subject areas is not as significant as it was the jump to international student fee levels will likely have an impact on enrolments by EU students. Any additional income associated with the move from EU to international fee status may be undermined by a drop in EU student numbers. Although the UK university sector, and the Welsh sector in particular, has a number of attractive features these may be outweighed by financial considerations together with concerns about additional administrative requirements. There may also be concerns about the future value of UK qualifications and perhaps more negative views of the UK that could also have an impact on EU student enrolments.

In addition to direct income to universities there is also a considerable impact 'off campus' by EU students. Figures from the Universities Wales Report on the impact

⁶ http://ec.europa.eu/programmes/erasmus-plus/news/commission-adopts-proposal-next-erasmus-programme-2021-2027_en

of international students indicated that every EU student generated £19.3k of Welsh output, one Welsh job was generated for every six EU students in Wales and every EU student generated £9.3k of Welsh GVA⁷. This impact was not limited to those areas with universities but had an impact across Wales. In addition to this financial contribution, the immense academic, social and cultural benefits brought to Wales by EU students should be recognised.

The Welsh higher education sector has been strengthened and enhanced through participation in Horizon 2020 and the previous Framework Programmes. Welsh universities have been successful in winning funding from this highly competitive EU research and innovation funding programme. Universities have accounted for nearly two-thirds of Welsh participations in Horizon 2020 so far and have received over 60% of funding received by Welsh organisations.⁸

Projects have been funded across a range of areas including excellent science, industrial leadership and societal challenges. Examples include PATROLS, INMARE, SIRCIW and GRACE that are led by Welsh universities or involve Welsh universities⁹. Cardiff University is the lead co-ordinator for a 1m euro Horizon 2020 Innovative Training Network project 'InnoDC' involving partners from Spain, Portugal, Denmark and Belgium that draws together early career researchers to work in the field of developing new approaches to electricity transmission from offshore wind.'

Funding has enabled extensive work with a wide range of partners leading to transformational benefits for many areas of the Welsh economy and society as well as benefits for the rest of the UK, Europe and beyond. If Welsh researchers cannot access European research and innovation programmes there is no source of alternative funding on the necessary scale to maintain and develop international networks and collaborations.

Structural Funds have been a very important, and distinct, funding stream for Welsh universities providing significant investment in infrastructure that has enabled research and innovation capacity to be enhanced that has supported competitive funding bids to Framework Programmes. It has been particularly important due to the historic research funding gap between Wales and the rest of the UK.

Wales has received over £4.5 bn in Structural Funds since 2000¹⁰ with universities receiving over £570m¹¹. Universities have utilised Structural Funds wisely to support capacity-building and to position Welsh universities as strong partners in collaborative European research projects. Welsh universities have used Structural Funds and Horizon 2020 funds to support researcher development through programmes such as the Knowledge Economy Skills Scholarship, Marie Skłodowska-Curie Cofund and Ser Cymru II fellowships.

⁷ The Economic Impact of Higher Education in Wales, Universities Wales, January 2018

⁸ <http://www.gov.wales/funding/eu-funds/horizon2020/?lang=en>

⁹ <https://gov.wales/docs/wefo/publications/180327-horizon-higher-education-case-studies.pdf>

¹⁰ Welsh European Funding Office

¹¹ Welsh European Funding Office

Structural Funds have supported a number of projects led by Welsh universities. One example is ASTUTE 2020, a £22.6m all-Wales scheme led by Swansea University in partnership with Aberystwyth University, Cardiff University, the University of South Wales and the University of Wales Trinity St David¹². This project works with the manufacturing sector across Wales to support their growth by facilitating and de-risking the development and adoption of advanced technologies, increasing competitiveness and enabling greater levels of business innovation.

Structural Funds supported the design and building of Swansea University's £450m Bay Campus that opened in 2016. It redeveloped 65 acres of brownfield land providing accommodation for students and academic and research space for industrial partners. The campus will host the new £31m Computational Foundry that will support computational science and research with capacity for 1150 undergraduate students and 150 researchers.

Structural Funds have provided the capital for the investment in a number of buildings and facilities at Bangor University – including MSparc, SEACAMS, Pontio and the Management Centre. European funding has also provided revenue funding for Bangor to work with business on collaborative research and development in projects such as Winning in Tendering, SEACAMS1 and LeAD/ION.

Aberystwyth University has benefited from over £46m of Structural Funds during the 2014-2020 programme (with a further £8m in planning). This funding has supported the highly successful BEACON and BEACON+ operations which work with industry to utilise sophisticated bio-refining processes to turn non-food crop plants into fuel, novel materials and high value chemicals to reduce dependency on fossil fuels. The INTERREG Ireland-Wales programme has been particularly valuable for Aberystwyth with four projects working to counter the effects of climate change and five more under development.

The European Investment Bank (EIB) has also provided an important source of funding through loans for investment in development. The development of Swansea University's Bay Campus has been supported by £60m of EIB funds.

The impact on Wales of the loss of Structural Funds is perhaps insufficiently understood by the UK Government. It will be important for Wales and Welsh organisations to articulate the need for significant, strategic investment in infrastructure and capacity-building. There have been some discussions at UK level about funding to replace Structural Funds, the 'Shared Prosperity Fund', but it is unclear how this is progressing and it is also unclear as to the extent to which Wales would 'control' this funding. Universities UK has highlighted the need for university involvement in the development of such a fund due to universities'

¹² <https://www.astutewales.com/en/>

expertise and experience and the need for replacement funding at the devolved administrations level not just at UK level¹³.

Welsh universities are committed to working with the Welsh Government to look at future proposals for this area of funding. It will be important to avoid a multiplication of small funds but instead to consider how strategic, large-scale investment can support Welsh development through utilising the role of Welsh universities as economic and social anchors in many parts of Wales. Even if replacement national funds are made available there may be a gap between the end of Structural Funds and new funding programmes.

Higher education is a growth-enhancing sector and Welsh universities are some of the best-placed organisations to support the Welsh economy and society to develop and meet the needs of its citizens. Welsh universities are embedded in their local economies and communities but able to operate nationally and internationally to drive innovation. Welsh universities with their expertise in many areas of relevance to the Welsh economy including financial and business services, healthcare and biosciences, digital and creative industries can support the Welsh economy post- Brexit but will need appropriate and innovative regional level funding to foster excellence in place of Structural Funds. Cardiff Met's new Cardiff School of Technologies is designed to support innovation in the digital economy through a global industry-education partnership to develop future technologies, encourage economic growth and widen engagement in the digital sector.

Research and Innovation Funding and Collaboration

Wales has benefited from the funding, mobility and networks that EU research and innovation programmes have offered to participants. Leaving the EU will have a significant impact on universities research and innovation activities. EU programmes have provided opportunities for Welsh universities to develop and innovate across a wide range of research areas with partners in Wales and with partners across Europe. Welsh universities have also benefited from significant investment through European Structural Funds that have developed improved facilities and new infrastructure across Wales as well as offering education and skills development. This investment has enhanced the capacity of Welsh universities in research and innovation. Even if replacement national funds emerge, and there are many questions around the level and allocation mechanisms for such funds, there may be a gap between the end of Structural Funds and new funding programmes.

Research funding from EU sources is significant for Welsh universities with successful applications for research and innovation funding resulting in projects across a range of academic areas. Horizon 2020 is the current major EU research and innovation programme with a budget of around 70 billion euros for the period 2014-2020. The Welsh higher education sector has been successful in

¹³ Universities UK briefing paper, March 2018 – Policy priorities to support universities to thrive post-EU exit

winning funds from this highly competitive programme and universities have accounted for nearly two-thirds of Welsh participations in Horizon 2020 so far and have received over sixty per cent of funding received by Welsh organisations. In 2014/15 the total EU research grants and contract income for Wales was approximately £46 million. This represented around 21% of total research grants and contracts income in Wales for that year. However, financial statements will only provide a historic view of the income that universities have received from EU sources. Of much more significance is the income that they are forecast to receive from projects currently funded, or in the process of being funded by the EU.

In 2015/16 EU research grants and contracts income received by Welsh universities was over £48 million¹⁴. This represented over 20% of the total research grants and contracts income received by Welsh universities for that year. There is no source of alternative funding to the EU research and innovation programmes on the necessary scale to maintain and develop international networks and collaborations. Any replacement national UK funding or even Welsh funding would not be available on the same scale and with the same inbuilt and invaluable collaborative opportunities that European funding provides.

Welsh universities have historically received less UK-level research funding than the rest of the UK with underinvestment in research infrastructure and a lower level of STEM activity in Wales, although Welsh universities have been effective in using more limited research income to support high impact research¹⁵. A recent Royal Society report on research infrastructures in Great Britain indicated that Wales has the lowest percentage of research infrastructures in Great Britain¹⁶. European engagement and funding has helped to close this gap through capacity building and collaborative opportunities but without this investment Wales may continue to fall further behind.

Apart from the financial benefits there are perhaps even more important benefits associated with participation in European research and innovation funding. European programmes enable and facilitate collaborative working between researchers across Europe that transcends national boundaries. Schemes such as the Marie Skłodowska-Curie Actions enable academic career development and COST supports researcher networking. Welsh higher education has been immeasurably enhanced by the collaborations between Welsh universities and European partners in higher education, research organisations and industry. Limited and constrained access to future European research and innovation programmes will diminish Welsh universities.

Within Horizon 2020 the European Research Council (ERC) approach has been very important in raising the aspirations of academic research in Wales and has formed an increasing proportion of Horizon 2020 funding received by Welsh

¹⁴ Higher Education Statistics Agency HE-BCI 2015/16 Part B Tables 1 and 3

¹⁵ International Comparative Performance of the Welsh Research Base 2013, Elsevier for HEW, HEFCW and the Welsh Government

¹⁶ A snapshot of UK research infrastructures, The Royal Society, January 2018

universities. The ERC's work is driven from the 'bottom up' by researchers and funding is awarded on the basis of excellence.

In the area of research and innovation funding there have been some positive signals from the UK and the EU on future UK access to EU research and innovation programmes. It would be extremely helpful if the UK could secure full 'associate' status for the next European research and innovation programme as an early element of the future UK-EU relationship agreement due to be finalised in autumn 2018. As the new programme, 'Horizon Europe', will start on 1 January 2021 there is limited time for the arrangements for participation and alignment with required regulatory processes to be finalised. Delays in securing participation could result in UK researchers being unable to access the programme in its first years and/or require significant management resource at short notice to meet new requirements. There remain issues around the nature of 'associate' status for the UK. There is a difficult balance to be struck between the significant financial contribution and research strengths that the UK can offer to the EU programme and the extent of the influence that the UK can hope to have in the discussions around the formulation, organisation and implementation of the next programme.

As Wales does not receive the same level of funding for research as the rest of the UK the importance of EU funding in bridging the gap has been significant. The loss of EU funding, if it is not replaced, will hit Welsh universities particularly hard. Given the importance of Welsh universities to Wales this loss would have a cumulative impact across Wales.

As the UK leaves the EU a key area of work for Welsh universities and associated bodies will be to maintain and sustain current partnerships and collaborations across Europe. While we wish to see Welsh Government push for continued partnerships and engagement with the formal networks and frameworks of the EU, we recognise the value of and opportunities for further engagement through additional and/or informal channels. As the UK will no longer be part of the formal EU structures it will be vital for Wales and Welsh organisations to be active and influential in relevant platforms and networks that contribute to the informal decision-making and engagement processes. This will serve to strengthen Wales' relationship with the EU post-Brexit, and compliment any continued engagement with existing networks/frameworks. The UK's new role as a likely 'Associate Country' for EU research and innovation programmes will mean informal influencing will be very important.

The Welsh Government should prioritise developing new collaborative funding arrangements and providing enhanced support for collaboration with both European partners and key partners outside Europe, with a focus on delivering excellent research. The Welsh Government should seek to build on or develop informal networks, and relationships with regions and countries of strategic importance for Welsh higher education. These may offer opportunities for further

research and academic collaboration and partnerships outside of the formal EU frameworks, for example with regional inter-Governmental bodies and country level organisations. The Welsh Government should consult universities on any proposed new relationships or agreements with regional bodies and/or governments, to ensure they align with priority areas or areas of strength for Wales.

A number of Welsh universities are already engaged in significant bilateral research collaborations with European universities and this will be increasingly important. Swansea has links with Universite Grenoble Alpes and Cardiff's has links with KU Leuven. Cardiff Met has a number of research groups, centres and emerging Global Academies that enhance jobs and growth within Wales but also have global reach and engagement such as the Centre for Applied Research in Inclusive Art and Design, the Food Safety Research Group and the International Centre for Product Design and Research. There are also geographically vital collaborations such as the Ireland-Wales programme that must be sustained despite Brexit¹⁷.

As the UK and EU are keen for research and innovation collaboration to continue, although the details remain to be finalised, it would be helpful if UK level strategic funding opportunities could be aligned with the strategic priorities and potentially the 'missions' within the new Horizon Europe programme. This approach would support large-scale R&D programmes on a UK and EU basis with the critical mass to enable breakthroughs in key areas.

Looking forward

Universities in Wales are committed to working with Welsh Government and othersto navigate the best course for Wales and the rest of country as Britain exits the EU. Whilst the process of exiting the EU will bring challenges, universities welcome the opportunity to continue contributing to shaping solutions, and we are committed to maximising the opportunities it will present for Wales.

¹⁷ <http://irelandwales.eu/>