

Investing for the Upturn



A briefing for the National Assembly for Wales
from Higher Education Wales
January 2011

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PREFACE: Securing the future of our economy and society

Wales's future economic prosperity depends on our ability to be a full participant in the global knowledge economy. At the same time the promotion of social justice depends fundamentally on the creation of economic prosperity and expansion of high level educational opportunities for people across Wales. The twin objectives of social justice and economic prosperity – the foundation of the *One Wales* vision of a renewed nation – must be the cornerstone of Wales's response to the outcome of the Comprehensive Spending Review and its ramifications.

This is far from a business as usual environment. Incrementalism and a 'wait and see' approach to the challenges of the coming period will fall short of what is required. The response of the government and its partners in Wales will have to embrace radical approaches. The higher education sector accepts this challenge and is changing to deal with unprecedented circumstances.

We recognise that the radically changed economic climate means that we will need to build on the diversity, innovation and flexibility already inherent in the higher education system in Wales, to continue to maximise the efficiency of the services we deliver. Universities in Wales have differing missions and complementary strengths - yet each university is committed to the fulfilment of the vision set out in the Assembly Government's *For Our Future* strategy.

The stakes for Wales are high: as a nation we are the poorest and least productive nation or region in Britain. This challenge takes place in a wider context in which the UK's competitor nations are moving ahead by increasing investment in research and science - and rapidly increasing the number of people with high level skills. This year China is estimated to have enrolled 30 million students in higher education¹.

The role of universities in helping Wales address these challenges is pivotal – higher education is one of the few indigenous generators of research and innovation of significant scale in Wales. Reductions in the research and development taking place in the university sector will undercut Wales and the UK's ability to compete in the global knowledge economy.

As this document shows, Wales can build on good performance in its universities. But as we also outline there are a number of areas where universities recognise a need to improve performance rapidly to keep up with the global competition in higher education and to deliver shared national HE priorities for Wales. This is the message of *For Our Future* and *Economic Renewal: a new direction*, and it is a message that universities own.

Meeting these ambitions will mean a partnership founded on rapid change and reform within the university sector and sustained investment from government.



Professor Noel Lloyd
Chair, Higher Education Wales

January 2011

About Higher Education Wales (HEW)

Higher Education Wales represents the interests of Higher Education Institutions (HEIs) in Wales and is a National Council of Universities UK. HEW's Governing Council consists of the Vice-Chancellors of all the HEIs in Wales. HEW provides an expert resource on all aspects of Welsh higher education.

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Introduction

This submission sets out the challenge for Wales as it faces some of the toughest times for a generation. The National Assembly is facing the hardest investment decisions since its inception in 1999. Decisions about investment priorities now will determine Wales's future prosperity for a decade or more. This introduction sets out how we will demonstrate the value of investment in universities and how other economies are focussing resources on HE in order to adapt to the new economic age ahead. The introduction will conclude with a summary of how universities have responded to the publication of the *For Our Future* (FOF) and *Economic Renewal: a new direction* policy frameworks, and areas where partnership working between the Assembly Government and universities can take forward the *FOF* and *Economic Renewal* agendas.

This document demonstrates the importance of sustained investment in higher education as we face these challenges. There are four principal arguments for sustained investment, and this document is built around these points:

- (1) Universities lever in resources from beyond Wales that could be lost if universities are weakened by deep or mistimed cuts in investment from government. This leverage takes the form of income from research grants, collaborative research and innovation partnerships - and an inflow of students from the rest of the UK and abroad. This leverage effect is outlined in *section I* of the document.
- (2) Universities deliver the high level skills which could increase Wales's low levels of productivity. This in turn raises employment levels by increasing business growth, entrepreneurship and the attractiveness of Wales as a place for investment and research partnerships. The cycle of low skills, low value employment in Wales can only be broken by upskilling through graduate and postgraduate skills. The benefits of moving to a high skilled labour force are outlined in *section II* of the document.
- (3) The research and innovation taking place in universities is the foundation for Wales's developing knowledge economy. Transforming Wales's economy from its relative dependence on low value industries to high value added businesses is the cornerstone of *Economic Renewal: a new direction*. The central role of universities in developing a knowledge based economy is outlined in *section III*.
- (4) Higher education creates social benefits which directly contribute to the achievement of social justice and social mobility in Wales. Fewer opportunities for qualified people to benefit from HE or a poorer quality of the student experience will put these positive social benefits at risk. We summarise these positive social benefits for Wales in *section IV*.

Leading the recovery – learning from international responses to the global downturn

Universities in Wales are facing disinvestment from a number of sources. There is a planned retrenchment in real terms from the UK Research Councils, and private sector R&D as a result of the downturn. The cumulative impact of these reductions could be a substantial hit to Wales's ability to compete in the global economy as we recover from recession.

Whilst any significant reductions in public funding for universities carry substantial risks, mis-timed cuts would be particularly damaging. Any necessary reductions in investment must be back-loaded towards the end of the spending review period. This would avoid unnecessary damage to Wales's research base and the essential infrastructure underpinning learning and teaching for students.

Deep cuts to investment in universities are not the only way to respond to the current challenges. The UK's competitor countries and regions have recognised the importance of universities to economic recovery and long-term economic growth, by increasing public investment in their higher education systems and research. This is in spite of many of these countries already having higher levels of investment in higher education than Wales and the UK. Some examples of additional investment in other countries committed to higher education and research in response to the economic downturn are summarised in Figure 1.

Figure 1: Additional investment committed to higher education and research

Country	Focus	Amount Committed
France	Higher Education (\$14.4bn) and Research institutes (\$10.5bn)	€19 bn
Germany	Higher Education; Research and development	€18 bn
USA	Research and development (through federal stimulus package)	\$21 bn
Canada	Research and development, including graduate student programmes	\$6 bn
China	Research and development	\$0.9 bn
Australia	Teaching, learning and research (Education investment fund)	\$0.6 bn

Figures are rounded to the nearest £100m. Sources: Council for Science and Technology 2010, *A vision for UK research*; The Royal Society (2010), *The Scientific Century*; Research in Germany press release (<http://www.research-in-germany.de/28462/2009-06-15-decided-18-billion-euros-for-science.sourcePagelD=12290.html>).

Universities in Wales receive crucial investment from a wide range of sources. On average, 38% of investment in universities comes from DCELLS, the Assembly's Education Department via HEFCW, but crucial sources of funding come from the UK Research Councils, NHS Wales Research & Development, fee income from international students, alumni fundraising, fee income from home students, and collaborative work with business.

Despite diversifying income sources significantly in recent years, many of these other sources will be affected adversely by the recession and forthcoming public expenditure cuts. Core investment from the Assembly Government will therefore become even more important for the success of universities in leading Wales out of recession and into sustainable recovery.

Delaying changes in investment as late as possible in the spending review period would also increase the opportunities for substituting public funding with alternative sources of income as private sector sources may have recovered from the initial effect of the recession.

A prospectus for partnership in challenging times: Taking forward For Our Future

For Our Future sets out an ambitious agenda for universities in Wales. The impact of the recession and public spending austerity mean that the priorities outlined in *For Our Future* will become more important, not less. The welcome emphasis in *For Our Future* on collaboration, increasing the co-production of research, high level skills, widening access and part time study all take on increasing urgency in the current environment.

Since *For Our Future* was launched in November 2009, universities have already made strides in taking forward some of its key priorities. We have seen, for example:

- Important new research alliances: such as the High Performance Computing Wales project agreed and launched in July 2010.
- Mergers: both between universities in Wales (through the creation of the University of Wales: Trinity Saint David), and proposed strategic alliances between universities and FE institutions in Wales.
- The launch of the pivotal University of the Heads of the Valleys Institute in November 2010 - a flagship university-led project to widen access to higher education.
- Record increases in the capture of research income², alongside the launch of important new collaborative partnerships with key 'anchor' companies such as Airbus.³
- Swift progress in establishing the *Coleg Cymraeg Cenedlaethol* (the new name for the *Coleg Ffederal*), which will take forward with universities Wales-wide efforts to expand Welsh medium HE in Wales.

This is just the start of the process of taking forward *For Our Future and Economic Renewal: a New Direction*. In the coming months we should expect:

- New arrangements between universities and FE Colleges to boost HE/FE progression in regions of Wales.
- Substantive regional plans in each region of Wales to boost options for locally based HE learners and Small and Medium sized Enterprises (SMEs).

During the course of the spending review period in Wales we are likely to see further HE reconfiguration.

Focussing on the Frontline

Ensuring that every penny of public investment is directed to the delivery of national priorities is an imperative for all universities. Universities are working together regionally and on an all-Wales basis to ensure that frontline services are protected as much as possible as budgets are squeezed. The HEFCW regionalisation agenda and the DCELLS Frontline Resources Review have helped galvanise work to maximise efficiencies in the higher education system.

Universities are also moving forward with a feasibility project on shared services, examining whether efficiencies can be made either at a regional, national or UK level. Internal efficiencies within universities are being pursued for the same reason. Universities are determined that public resources must be concentrated on those areas that maximise their impact for learners, research and business partners, and the communities they serve. Higher Education Wales is drawing this work together and in doing so we will include insights and sectoral benchmarking being led by the Universities UK Task Group on Efficiency and Modernisation.

Summary of areas for future partnership action

Following *For Our Future and Economic Renewal: a new direction*, Higher Education Wales proposes some specific ways in which both these strategies can be taken forward in partnership with the Welsh Assembly Government. These include:

- **Teaching**
 - Build on Wales's success in student satisfaction by ensuring that the quality of learning and teaching is supported through sustained investment in the learning and teaching infrastructure.
 - Develop Wales's good track record on part time study by moving to more equitable student financial support for part time students, addressing artificial barriers which discourage students from studying in ways that best suit them.
 - Ensure that public funding for teaching and student finance continues to reflect the public benefits of higher education.
 - Build on the innovative approaches already in the sector to increase progression to higher education through vocational routes and further strategic alliances with FE Colleges. The HEFCW regionalisation process gives the sector an opportunity to advance this work.
- **Knowledge Exchange, Research and Innovation**
 - Sustain the capacity of universities to engage with business. Any future funding to support this activity must reflect the wide range of collaborative activities in which universities and business engage, and the variety of businesses that benefit from this interaction.
 - Shift Department of Economy & Transport (DE&T) and Convergence programme investment decisively away from low impact economic support areas towards the co-production of research through joint university-business research vehicles, and Knowledge Transfer Partnership (KTP) ventures.
 - Use universities in Wales with their strong linkages with some key knowledge intensive companies (such as Airbus, Corus/Tata, EADS, Boots, Rolls Royce) as the foundation for the 'anchor' company strategy in *Economic Renewal: a new direction*.
 - Build on the success of European funded postgraduate projects in the Convergence area by prioritising investment in postgraduate and postdoctoral study across the whole of Wales.
 - Sustain investment in quality research and the science base in Wales. Build on this quality research with further research collaborations between universities in Wales and with universities in the rest of the UK and overseas.

- **International Higher Education**
 - Develop a joint HE sector / Welsh Assembly Government 'International Higher Education Strategy for Wales' to bring the resources of the Assembly Government's overseas focussed operations behind universities' efforts to internationalise their institutions, in order to increase the already substantial export earnings for Wales the sector achieves. International higher education will be one of the most important areas of development for universities in Wales during the spending review period.
- **Welsh Medium Higher Education**
 - Ensure that the *Coleg Cymraeg Cenedlaethol* (the Coleg Ffederal) gets off to a flying start, leading to an expansion of Welsh Medium learning opportunities in Wales.
- **The Efficiencies Agenda**
 - Support the sector in the implementation of efficiency projects which have been identified as being the most effective in reducing back office costs. Use the efficiencies made to protect the delivery of teaching, research and economic/social engagement.

I. Investing to Gain

Universities deliver a substantial economic gain to Wales, not least because of the direct financial return on investment they give to the Assembly's funding. Universities have the ability to lever in resources – both public and private – that would not otherwise be attracted to Wales. No other Assembly funded sector levers in the magnitude of investment that higher education does from a range of sources. Funding changes that undermine the university sector's ability to attract resources into Wales from UK and EU sources will mean that cuts could have a doubly negative impact on the Welsh economy.

The Economic Contribution of Wales's Universities – a summary

Not counting the positive impacts of upskilling on productivity, or R&D on business growth, the outline economic contribution of the sector in Wales can be summarised as follows:

- ✓ Welsh higher education is a substantial industry in its own right - with a turnover of £1.2bn in 2008/09.
- ✓ This turnover of £1.2bn makes a direct contribution to the economy supplemented by knock-on or indirect effects. These knock on effects generated an additional £1.5bn expenditure in other industries throughout Britain - with £1.1bn accruing to Welsh industries.
- ✓ Universities' direct outputs have a multiplier effect of 2.02: in other words, for every £1m of university expenditure, £1.02m accrues to industries located in Wales.
- ✓ For every 100 jobs employed by a university in Wales, a further 83 were created in industries in Wales.

Source: 'Making an Impact, Higher Education and the Economy: A Summary of the Impact of HE Institutions in Wales in 2007/08', Kelly, U, McNicholl, I, McLellan, D, University of Strathclyde.

Leveraging additional resources into Wales

Excluding research funding from HEFCW, the university sector in Wales earned **£157m in research income** in 2008/09 – double the income earned in 2000/01 (at £78.8m in 2000/01). The university sector also gained **£238m of export earnings for Wales** in 2007/08. The net inflow of full time students from the rest of the UK into Wales's universities also generates an additional direct boost to the Welsh economy of more than **£90m a year**.

The four main ways in which this university 'leverage effect' operates is expanded upon here:

a) UK Research Council income

Wales's universities gained £52m in grants from Research Councils in 2008/09. This income was won on a competitive basis with other universities from across the UK.

b) Partnerships and research income from industry, charities, and other agencies

Universities in Wales earned £78.3m in contract and collaborative research income and consultancy fees in 2008/09. This included £8.5m won through the EU's Framework Programme / European Research Council, and over £20m in research income from charities.

c) The export earnings effect of international and EU students in Wales

Wales's universities' international revenue represented a total of £238 million of export earnings for Wales in 2007/08. This was achieved by universities attracting 18,600 students from outside the UK to study in Wales in 2007/08. In addition to fees of £111m or other monies paid to universities (e.g. for halls of residence fees, etc.), these students spent an estimated £127m off-campus. This off-campus expenditure in turn generated £178m of economic output and over 1,700 full time equivalent jobs.

d) The net inflow of full time students from the rest of the UK

Wales gains at least £90m a year from the net inflow of 8,700 full time students who come to study in Wales from other parts of the UK. This comes from more than £28m in tuition fees and an estimated £62m in student expenditure which in turn has significant knock on economic benefits for Wales's economy.

II Breaking the cycle of a low skills, low value economy in Wales

The Assembly Government and virtually every analyst agrees that Wales needs to break the cycle of a low skills, low value economy in order to prosper⁴. Breaking this negative cycle will be one of the key challenges for Wales during the coming period.

Success in moving to a high skills, high value economy will deliver not only the economic prosperity pillar of the *One Wales* programme, it will also deliver the social justice pillar as the two are closely connected. Social injustice in Wales is founded at its most fundamental level on the low levels of employment, low paid employment, and high levels of economic inactivity. Wales has some of the lowest levels of employment and highest levels of economic inactivity in both the UK, and much of the EU.

There are clear policy and investment decisions that could break this low skills, low value cycle. There are very clear indications in *Economic Renewal: a new direction* that this is understood, and that high level skills and R&D are essential to our economic future. Universities expect that the analysis presented in *Economic Renewal: a new direction* will begin to steer the Assembly Government's future investment priorities.

The policy evidence base clearly demonstrates that increased high level skills are essential in developing a high value economy. A growing economy based on high level skills and high productivity is a pivotal route to success in a globalised world - as much of the economic literature and the rationale behind the Europe 2020 Agenda suggests⁵. This section will make the case for moving swiftly to a highly skilled workforce in Wales on the basis that; (a) it would close the prosperity and productivity gaps with the rest of the UK; (b) it would promote social justice in Wales by raising employment levels in Wales; and (c) it would be a sound financial investment for Wales as the graduate wage premium remains strong.

(a). Boosting high level skills to close the prosperity and productivity gaps within the UK

Wales is currently at the bottom of the UK prosperity league behind Scotland, Northern Ireland and every English region. According to Assembly Government's commissioned research⁶ this prosperity gap is founded on the twin weaknesses of the Welsh economy: (a) low employment / high economic inactivity; and, (b) low productivity.

This Assembly Government commissioned report⁷ suggests that low productivity is perhaps a greater challenge than inactivity because *even when relative economic inactivity is factored out, Wales has the lowest level of productivity in any nation or region in Britain* by a wide margin (para.8 in cited report). The headline 'productivity gap' between Wales and London is 42%, compared to a 33% and 27% gap between the North East and Scotland respectively, and London.

The report states that there is “wide ranging evidence that skills and human capital are important drivers of productivity, both directly and through their impact on innovation and the growth of the knowledge economy” (para.61). The report points to “a strong direct association between higher level skills and productivity” (para.104) and suggests that “low attainment of higher qualifications....may go some way to explaining the low level of productivity” (para.105). The authors cite separately commissioned research showing that, in fact, “it is higher level skills that are most significant in influencing productivity” compared to other variables relating to skills (para.105).

This Assembly commissioned report suggests that a greater availability of labour with high level skills could serve to make an area “more attractive to business investment” (para.62). Other research cited in a UK Government document in 2008, noted that “that a one percentage point increase in the proportion of the workforce with a degree, instead of just an A-Level or equivalent qualification, led to an increase in productivity of 0.5%”.⁸ It is therefore no coincidence that Wales productivity underperformance reflects Wales’s low attainment in high level skills qualifications (level 4) – standing at 29% in 2009, compared to 39% in London, 32% in the South East of England, and 33% in Scotland.

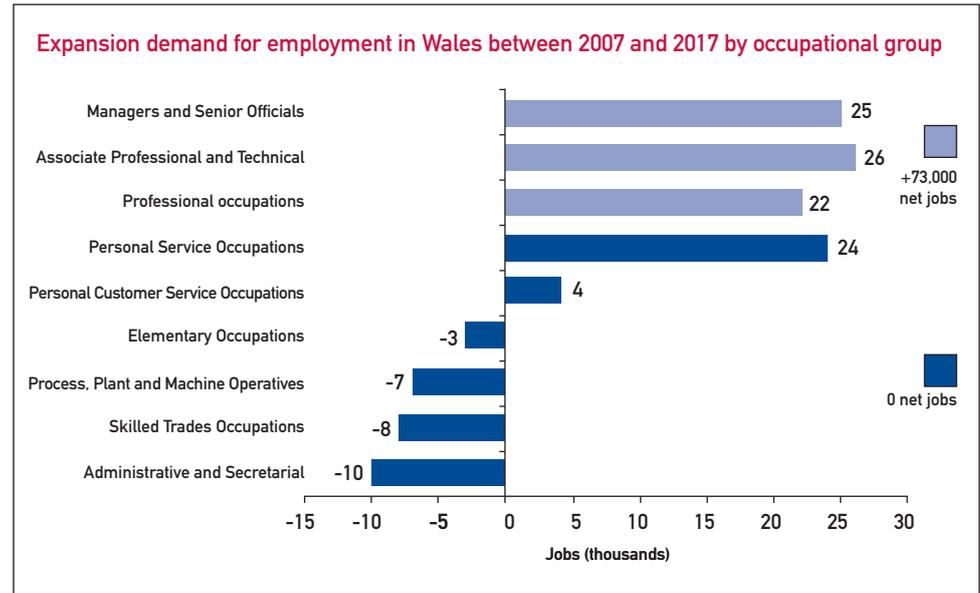
(b). High Level Skills and Social Justice: the link between high level skills, productivity and employment

Expanding high level skills is not an elite agenda to benefit a minority - it is about creating a knowledge economy from which all can benefit. ‘The many’ can benefit from sustained investment in universities and high level skills because improvements to productivity brought by high level skill also *foster the creation of a high employment economy*, according to important economic evidence. Assembly Government strategies published in 2009/10 (*For Our Future and Economic Renewal: a new direction*) stress the importance of high level skills and the need to raise productivity and we welcome this shared analysis of how to end the cycle of a low skills, low value economy.

This is not a surprising conclusion when changes to labour demand in the next ten years are examined. The in depth *Working Futures* reports commissioned by the UK Commission for Employment and Skills captures the picture well. According to their latest report, which maps labour demand to 2017 in Wales, there will be a substantial drop in the demand for clerical and manual jobs in Wales. The same report, however, projects considerable growth in employment for managerial, professional, technical and personal service occupations.

In summary, this research shows that the most net growth in employment will be in managerial, professional and technical employment⁹ - i.e. in roles where high level skills are increasingly the norm. This means that availability of labour with high level skills will be the key driver of net employment growth in Wales – and will be the dynamo for employment growth in well paid employment where graduate skills are valued and increasingly deemed necessary. These trends are shown in Graph 1 below:

Graph 1



Source: UKCES, *Working Futures – National Report 2004-14*.

This evidence is supported by research from the UK Commission on Employment and Skills showing that high level of productivity – driven most notably by high level skills and research and innovation – are closely correlated with high levels of employment in economies. This link is demonstrated not just within the UK but by examining international evidence as well. As the UKCES Report argues “[h]igh productivity countries also tend to be high employment countries” (p.21 & Chart 1.1). Breaking the low value, low employment cycle will therefore require targeted investment at the most effective measures to boost labour and capital productivity - such as investment in high level skills and research and innovation.

The Wales Employment and Skills Board annual report on Higher Education has recently emphasised¹⁰ that, notwithstanding the recession, there is *not* an oversupply of high level skills in Wales or the UK, but an underdemand from employers who are potentially missing out on the productivity improvements that a more highly skilled workforce could bring.

What lessons can we learn from this evidence? The past conventional wisdom appeared to be that a heavy prioritisation of basic skills - through basic adult education and reengagement projects - are the central means to increase long term employment levels in Wales. Addressing what became known as the ‘long tail of low skills’ had been the past priority of many interventions. The drawback to this approach was revealed by an Assembly commissioned review of all the evidence on skills in Wales, which found that “[t]he UK does not unduly suffer from a long tail of low skills when compared to other industrialised countries and the situation in Wales is only marginally worse than in the rest of the UK”.

There are helpful signs that the importance of high level skills has already been recognised in some important decisions in Wales. In particular we note the support from the Wales European Funding Office (WEFO) for important Convergence projects such as the collaborative European Social Fund projects

on Foundation Degrees, Access to Masters, a Doctoral programme, Work Based Learning and a Foundation Degree programme. As we recommend in this document, a further virement of resources within the ESF Convergence Programme to high levels skills projects is now necessary in light of the new direction outlined in *Economic Renewal: a new direction*.

The importance of postgraduate skills within the mix of skill levels needed in a knowledge-based economy is particularly important. According to the Leitch Review and other economic evidence, it is especially postgraduate skills which make the greatest contribution to improving labour productivity.¹¹ Despite fears about retaining graduate talent in Wales, nearly two thirds of postgraduates from universities in Wales stay to work in Wales after graduating.

We await WEFO's recommendations to the Programme Monitoring Committee on the Convergence programme as to how the Economic Renewal approach will change the programmes and we recommend that resources are switched to high level skills projects. These programmes are an encouraging start to prioritising skills in this way - but these can only be the beginning of a new push to boost Wales's high level skill base, as these projects do not reach much of the population of Wales and will begin to be wound down from 2013/14.

These projects should also be seen only as a start not least because countries such as Singapore and other developing nations are powering ahead with massive investment programmes for high level skills and research. Based on current trends, Europe's share of economic activity is going to decline as Asia, Africa and Latin America's share increases (see Figure 2). Within the OECD, the UK's comparatively strong position as a highly skilled economy is under threat as more and more countries focus on increasing the skills of their populations as a source of competitive advantage.

The overall graduation rate in the UK and Wales has remained more or less stable over the last eight years. The improvement of other countries over the same period, however, has meant a downward movement in the UK's relative position in terms of the rate at which our education system produces human capital. In 2008 the UK was ranked 15th amongst OECD countries in terms of graduation rates for tertiary type A qualifications compared to 4th in 2000 (see Figure 3 below). Countries with high graduation rates at the tertiary level are also those most likely to develop or maintain a highly skilled labour force. If Wales is to compete in the world as we have in the past, and ensure the future strength of our economy, we need to increase the proportion of our population with skills at Level 4 or above.

Figure 2: Projected change in economic activity by region

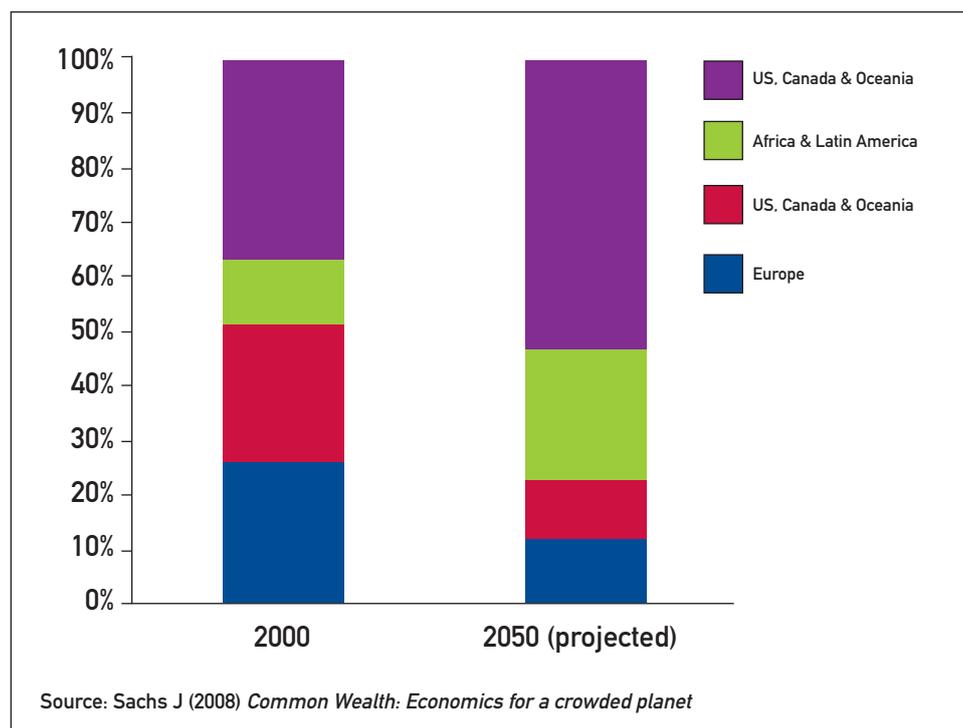


Figure 3: Trends in tertiary type A graduation rates – place of the United Kingdom

Rank	2000	2003	2004	2005	2006	2007	2008
1	New Zealand	Australia	Iceland	Iceland	Iceland	Iceland	Finland
2	Finland	New Zealand	Australia	New Zealand	New Zealand	Poland	Slovak Republic
3	Norway	Finland	New Zealand	Australia	Australia	Australia	Iceland
4	United Kingdom	Iceland	Finland	Finland	Finland	Finland	Poland
5	Denmark	Poland	Norway	Denmark	Poland	New Zealand	New Zealand
6	Australia	Denmark	Poland	Poland	Denmark	Denmark	Denmark
7	Netherlands	Norway	Denmark	Netherlands	Netherlands	Ireland	Ireland
8	Poland	Netherlands	Netherlands	Italy	Norway	Norway	Portugal
9	United States	United Kingdom	United Kingdom	Norway	Sweden	Netherlands	Norway
10	Iceland	Ireland	Ireland	United Kingdom	Italy	Portugal	Netherlands
11	Ireland	Sweden	Sweden	Ireland	Ireland	Sweden	Sweden
12	Spain	Japan	Italy	Sweden	United Kingdom	Slovak Republic	Japan
13	Japan	Portugal	Japan	Hungary	Japan	Japan	United States
14	Sweden	Spain	United States	Japan	United States	United Kingdom	Czech Republic
15	Canada	United States	Spain	United States	Slovak Republic	United States	United Kingdom

Source: OECD (2010) *Education at a glance*

(c). The graduate wage premium remains strong in Wales and the UK

Investment in higher education continues to reap substantial benefits for students and communities through the 'graduate premium', a measure of the average increase in wages received by a graduate (over workers with A-level standard qualifications). This suggests that the distinctive skills of graduates have remained in high demand, against the backdrop of significant expansion in the higher education sector. Among the sources that lead to this conclusion are:

- a. Analysis undertaken for Universities UK in 2006 showed that the lifetime earnings benefits of a degree have remained relatively stable throughout the period of mass expansion of higher education from the late 1980s.¹³

- b. Evidence from Wales commissioned by HEFCW comes to similar conclusions, showing that despite the very substantial increase in participation rates since 1993, the graduate wage premium is holding up well in Wales and remains substantial¹⁴. On one indicator, the wage return for graduates in Wales is over 50% more than individuals with A level qualifications alone.¹⁵
- c. The most recent analysis by the OECD suggests that the net present value of a higher education qualification in the UK is \$207,655 (£134,320) for a male and \$152,858 (£98,875) for a female, when both direct costs and foregone income are taken into account.¹⁶
- d. A recent longitudinal study of cohorts of UK graduates from 1995 and 1999 found that 80% were in highly skilled occupations, and that there were high levels of job satisfaction and a strong fit between graduates' destinations and their career plans. The study also found that employers were still willing to pay a premium for graduates – even those in 'non graduate' jobs.¹⁷ Importantly, expansion in the number of graduates has broadened the definition of what constitutes a 'graduate job'. Higher Education Wales believes it is an extremely positive development that a more diverse group of graduates have brought their skills to bear in a wide range of sectors. A range of indicators provided by the OECD indicate comparatively strong economic returns for the UK's graduates.

III. Creating a knowledge economy through research & innovation

Investment in research and innovation will facilitate a much needed transformation of Welsh economy as we face a tough economic environment. This is clearly recognised in the Assembly Government's new economic development framework: *Economic Renewal: a new direction*.

As outlined above, Wales needs a change in the focus and operation of business, to ensure employers 'effectively deploy their more highly-skilled and qualified workers'.¹⁸ This will mean businesses adopting innovative practices, and thereby 'moving up the value chain, into higher value added products and services: using a more knowledge-intensive work organisation.' This innovation will be critical to productivity growth in Wales. A report by the National Endowment for Science, Technology and the Arts (NESTA) notes that innovation 'has generated two-thirds of productivity growth between 2000 and 2007'.¹⁹

The pivotal contribution of research and innovation to economic growth has three key aspects. Firstly, university research and knowledge exchange boosts business growth, helping enterprises to move up the value chain. Secondly, research and innovation increases capital productivity in a regional economy and the social sciences and humanities enhance high end 'social capital' (a point dealt with in section IV). Thirdly, university based research and innovation helps create the conditions for the development of a high value cluster of R&D intensive industries which can significantly increase the prosperity levels of a region.

Context: Universities drive the R&D base in Wales

The Office for National Statistics *Regional Trends* data²⁰ shows that Wales is far behind prosperous regions of the UK in terms of private sector Research and Development (R&D). Wales - with 5% of the UK's population - generates only 1.5% of the total business R&D in the UK at £243m in 2008. In fact, more R&D is conducted in Wales's universities, at a value of £261m in 2008, than by all private enterprises in Wales combined. Despite only having 1.5% of indigenous business R&D in Wales, according to HESA's annual Higher Education Community Interaction Survey (referring to 2008/09), universities in Wales won:

- **4%** of the UK university sector's contract research with large businesses (whether based in Wales or not)
- **5.1%** of the UK university sector's collaborative research income
- **5.4%** of the UK university sector's contact research with SMEs
- **7.9%** of the UK university sector's Continuing Professional Development market with business and the public sector, measured by number of learner days.

(a). Research and knowledge exchange boosts business growth

The future economic scenarios and sectors that will do most to promote swift and widespread economic growth will depend on businesses and universities continuing to work in partnership. A recent report by the Work Foundation, for example, has suggested that links between firms and universities will be critical in generating economic growth in high-technology and knowledge intensive sectors – such as low-carbon industries, service-based activities in manufacturing, high-tech and high-value added networked services, and the creative industries, where growth is most likely to be generated up to 2020.²¹ Both of the scenarios described by NESTA as most likely to promote fast and widespread economic recovery depend on a highly qualified workforce, and on a research base which can contribute to the ability of businesses to generate and develop innovative and leading-edge products and services.²²

Universities in Wales can do more than simply ‘upskill’ or ‘reskill’ the population in this context. They can continue to provide basic research that identifies problems not yet solved, offer a wide range of support to innovation and growth in key areas, and produce graduates with distinctive skills. They can also deliver wider public benefits as we will examine below.

(b). Research boosts capital productivity and social capital

Those nations that have concentrated research in universities have generally produced a more competitive international performance.²³ This contribution is caused in part by the increases in capital productivity among companies of all sizes.

Research is a long-term endeavour, requiring significant commitment and investment in people and infrastructure to sustain world-class capacity and capability. Investment in basic research creates intellectual capital of wide and flexible application to problems not yet defined, and our ability to respond to major global challenges depends on the multidisciplinary diversity that our universities can provide.

It is not only the hard sciences that can make this contribution – the arts, humanities and social sciences enhance our understanding of critical social policy issues, such as understanding public and cultural attitudes to climate change.

(c). University research and innovation helps create high value industrial clusters

There are recognised links between the presence and impact of universities and a flourishing technology enterprise sector within regions across the world. Well known examples include Silicon Valley, Massachusetts’s Route 128, North Carolina’s research triangle, and, closer to home, the Cambridge effect. However, it has become clear that the influence of universities on regional economies is far more extensive, and this is recognised in the relevant literature:

“Universities and specialized research centres are the driving force behind innovation in nearly every region” (Clusters of Innovation National Report, USA Council on Competitiveness, Washington DC, 2001)

"European growth has been disappointing for the last 30 years but policymakers have only recently started to realise that Europe's growth performance is intimately linked with the research performance of its universities" ('Why reform Europe's universities?' Bruegel policy brief 2007/04)

"...high-technology clusters are forming around large research universities [in England]..." ('The Race to the Top': A Review of Government's Science and Innovation Policies, Lord Sainsbury, October 2007)

There are now many projects around the world to mobilise the strengths of universities more strategically. An influential report was published in December 2009 by a task force on 'diversifying the New York State economy through industry-higher education partnerships'.²⁴

In summary, if Wales wishes to create a high technology cluster to attract and develop high value industries, university research and innovation will be a crucial way in which this will be developed.

IV Universities fostering social justice

Access to a university education has always been an important springboard to better living standards for individuals and families in Wales. For many people in Wales a degree has helped to advance their careers, broaden their horizons and raise their aspirations. This personal transformation effect is crucial, and whatever benefits accrue to society at large, the clearest benefits of HE are experienced by the graduate herself/himself.

HEW believes that the expansion of higher learning is one the most important ways in which social justice can be advanced. The shift to being 'a small, clever country' will be crucial as a countervailing force against the negative effects of globalisation which can lead to unemployment, or employment in a diminishing pool of lower paid, low prospect jobs.

Widening access to higher education is an issue that has rightly been given prominence in Wales. All universities now have links with schools to encourage young people - including pre-teens - and run projects such as 'Summer Universities' and a host of other widening access projects. Many of these projects are run collaboratively through Reaching Wider Partnerships, with HEFCW's support.

This work has clearly borne fruit as Wales has a better record on widening access than England across several indicators.²⁵ Although these improvements have been made in Wales, universities and their partners in schools and FE still face a huge task in helping to spread educational opportunity to all people in Wales, whatever their age or background. The disparities in higher education participation in Wales are particularly acute, as the report of the Review of Higher Education in Wales clearly demonstrated.²⁶

Universities' responsibilities to the socially excluded are particularly acutely felt and acted upon. All universities in Wales now have been granted the Frank Buttle Trust Quality Mark for Care Leavers, a position well ahead of the HE sector in England. Universities in Wales also enrol a higher proportion of students with disabilities than UK universities generally (at 5.8%, compared to the UK average of 4.7% in 2008/09).

A 2003 study²⁷ showed that those from a lower social class benefit *disproportionately* from higher education. A further study showed that parents who had been to university inculcated a greater understanding of the importance of education in their own children. Cycles of deprivation and low attainment can therefore be broken by a family's access to a university education. Some important health benefits of higher education are summarised in a Higher Education Wales / CHERI literature review: 'The Social Benefits of Higher Education' (2009). Some of the findings of this review are summarised here:

Health and well-being

- There is a positive association between the highest level of educational achievement and health compared to those who had only completed their secondary education.

- Longitudinal studies in the UK show that there is a positive association between better health and high level learning – the study found that graduates feel healthier and more positive about their well-being than other less educated groups.
- Higher learning has a direct effect on a person's propensity to smoke.

Higher Education promotes social change and diversity

Universities are agents of positive social change. Apart from the clear benefits of scientific breakthroughs, the exposure of students to different belief systems and methods of critically assessing received wisdom, is an important way of challenging hidebound attitudes and prejudices. Universities are crucibles where lazy assertions and untested nostrums can be challenged in an environment where ideas are constantly exposed to internal and external critique.

Increasing global consciousness and our understanding of the environmental changes that we have caused in recent decades has been helped immeasurably by the academic research that has discovered the phenomena of global warming and unmasked the degree of economic and social inequalities in our world. The HEW/CHERI review pointed to research showing that:

- Higher learning has a positive links with promoting diversity. Research conducted in the UK (2002/2003) showed a positive effect of a university education on voting turnout, and also showed that graduates were significantly more egalitarian and anti-racist in their general outlook.
- Even when family influence effects are stripped out, the experience of higher education increases the likelihood of someone becoming involved in community groups and civic organisations (evidence from the British Household Panel Survey in the 1990s).
- Membership and activism in political parties has also been found to correlate with a university education. Evidence published in 2002 shows that there is a stronger correlation between a university education and political participation specifically in young women.

In summary, universities take seriously their mission to widen access beyond traditional groups and are committed to making further and faster progress in this area, in line with *For Our Future*. In the wider sense, higher education helps drive beneficial social change and engenders the sort of personal transformation that helps to change lives and challenge prejudice.

CONCLUSION

This submission has put forward the case for sustained investment in universities in the coming budgetary period. Investment from the Assembly Government will be only one side of a successful equation if Wales is to grasp the opportunities and avoid the pitfalls outlined in this document. For this sustained investment the government and taxpayers have a right to expect change and reform from universities. Universities in Wales accept this and are working towards the early fulfilment of the priorities outlined in *For Our Future* and *Economic Renewal: a new direction*.

Wales's universities currently perform well in many areas, but clearly do not perform well enough in other important areas. A change in approach is being pursued within the higher education system in Wales to maximise the returns universities make to Wales's economy and society. The university sector will, as a result of these changes, be better equipped to lead the creation of a knowledge economy in Wales.

What is clear is that Wales only has a future as a prosperous and socially just nation if we have a university sector that is both competitively funded and reformed. Each element is important if the aims and aspirations outlined in this document are to be fulfilled. Universities are working in partnership with the government to ensure that these turbulent times in fact turn into a period of opportunity for Wales.

¹ Yao Li, John Whalley, Shunming Zhang, Xiliang Zhao, 'The Higher Educational Transformation of China and its Global Implications', National Bureau of Economic Research, 2008, p.26.

² Wales's largest research intensive universities have announced record increases in research income this year, see:

http://www.swan.ac.uk/news_centre/News/Headline,47496,en.php and

<http://www.cardiff.ac.uk/news/articles/record-year-for-new-grants.html>

³ See Glyndŵr University's new collaborative Advanced Composite Training and Development Centre with Airbus and Deeside College

<http://www.glyndwr.ac.uk/en/Contactus/PressOffice/Pressreleases2010/FirstMinisterforWalesopensnewAdvancedCompositeTrainingandDevelopmentCentre/>

⁴ See Welsh Assembly Government, 'Economic Renewal: a new direction', July 2010, sections 5 & 6.

⁵ For a summary of the contribution of HE and high level skills to innovation and growth see the Bruegel Briefs: Aghion, P. & Sapir, A, 'A Primer on Innovation & Growth' (Oct 2006) http://www.bruegel.org/Public/Publication_detail.php?parentCatID=12&publicationID=1265

and; Aghion, P. & Sapir, A (et al.) 'Why reform Europe's Universities?' (Sept 2007) http://www.bruegel.org/Public/Publication_detail.php?ID=1169&publicationID=4618

⁶ See the Report from Boddy, Prof. M., Hudson, J., Plumridge, A. and Webber, D. of the University of the West of England and the University of Bath to the Welsh Assembly Government's Economic Research Advisory Panel entitled 'Understanding Productivity variations between Wales and the rest of the UK' (Nov 2006):

<http://new.wales.gov.uk/docrepos/40382/40382313/293077/40382322021/res-productvar.pdf?lang=en>

⁷ See 'Understanding Productivity variations between Wales and the rest of the UK' cited above.

⁸ 'A new University Challenge', Department for Innovation, Universities and Skills, February 2008, p.8: <http://www.dius.gov.uk/policy/documents/university-challenge.pdf>

⁹ See table 4.1 under 'Net Changes' at foot of table on page. 70 Working Futures – National Report 2004-14. The figures are UK totals.

¹⁰ See 'Moving Forward: Foundations for Growth' (Vol. 1), Wales Employment and Skills Board, May 2010, p.23.

¹¹ See article by Lesley Griffiths, Deputy Minister for Skills, Western Mail, 6 May 2010, <http://www.walesonline.co.uk/news/education-news/2010/05/06/skills-wales-lesley-griffiths-91466-26384435/>

¹² See Destinations of Leavers from HE in Wales, Welsh Assembly Government <http://wales.gov.uk/docs/statistics/2009/091222sb812009en.pdf>

¹³ Universities UK (2007) *The economic benefits of a degree*.

¹⁴ See the Institute for Employment Studies / HEFCW report 'Welsh Graduates and their Jobs' (Aug 2006), pp-60-65:

http://www.hefcw.ac.uk/documents/publications/external_reports_and_studies/ies .

¹⁵ See IES/HEFCW Report 'Welsh Graduates and their Jobs', table 4.10, p.64.

¹⁶ OECD (2010) *Education at a glance*.

¹⁷ Purcell K, Elias P et al (2003 and 2007) *Seven years on: Graduate careers in a changing labour market; The Class of '99, A study of the early labour market experiences of recent graduates*.

¹⁸ Shanmugalingam S et al (2010) *Rebalancing Act* London: NESTA.

¹⁹ Ibid.

²⁰ See Regional Trends tables (Sept 2010):

http://www.statistics.gov.uk/downloads/theme_compendia/RegionalSnapshot/directory.pdf

²¹ Lee N et al (2010) *No City Left Behind? The geography of the recovery – and the implications for the coalition* London: The Work Foundation.

²² Shanmugalingam S, et al (2010) *Rebalancing Act*, London: NESTA

²³ Adams J (2000) 'The Future of Research', in *Higher Education Re-formed*, Falmer Press, London, pages 169-189.

²⁴ See http://www.state.ny.us/governor/reports/pdf/IHETF_Report_FINAL.pdf

²⁵ See the April 2010 HEFCW press release:

http://www.hefcw.ac.uk/documents/news/press_releases/2010%20Press%20Releases/15%2004%2010%20-%20Performance%20Indicators%202008%2009%20-%20English.pdf

²⁶ See the map on p.11 of the Phase II report of the Jones Review of HE ('The Review of HE in Wales', May 2009, Welsh Assembly Government, <http://wales.gov.uk/docs/dcells/publications/090622hephase2en.pdf>).

²⁷ See Bynner, J., P. Dolton, L. Feinstein, G. Makepeace, L. Malmberg and L. Woods (2003). *Revisiting the benefits of higher education*. Bristol, Higher Education Funding Council for England, p.35.

