Geographies of marketisation in English higher education: territorial and relational markets and the case of undergraduate student fees

Sarah Hall
School of Geography
University of Nottingham
Nottingham NG7 2RD UK

Sarah.hall@nottingham.ac.uk
June 2015

Geographies of marketisation in English higher education: territorial and relational markets and the case of undergraduate student fees

Introduction

This paper contributes to the growing interest in markets and market making in economic geography (see Berndt and Boeckler 2009; Christopher 2012; Peck 2012). In particular, it builds on the growing number of studies within geography that develop the interdisciplinary cultural economy literature on marketisation. This literature emphasises the importance of calculative devices and their performativity in making markets (see Callon 1998a; MacKenzie 2006; MacKenzie et al 2007). This includes work on the agro-food industry (Ouma et al 2013); the pharmaceutical industry (Christophers 2014a); housing markets (Lovell and Smith 2010) and financial markets (Lai 2011). However, as Christophers (2014b) argues, the spatiality, and specifically the territorialized nature of market formation, remains comparatively neglected (although see Peck 2012). This neglect comes despite the cultural economy literature itself signalling the importance of understanding the spatiality of markets. For example, MacKenzie (2003) argues that the performative qualities of economic theory need to be analysed in relation to the social, cultural and politics contexts through which they operate.

In this paper, I develop understandings of the spatial constitution of markets by analysing the marketisation in higher education in England. This includes a heterogeneous set of processes that has shifted the relative balance away from
higher education as a public good, as exemplified by the Robbins Report (1963), towards market based provision and consumption practices (Ball 2012a, Collini 2013, Guardian 2013). For example, it includes a greater focus on the societal and economic value of research, exemplified by the Nurse Review into the funding structures of the Research Councils (the main form of state research funding in the UK) (BIS, 2014). Meanwhile, academic labour markets have been casualised with an increasing reliance on short-term employment contracts (Lynch 2006). In terms of teaching, there has been a greater involvement of for profit education providers (see Ball 2012a; Hall and Appleyard 2011) and increased recognition of the reliance on international student fee income and overseas campuses opened by UK universities (Greenaway and Haynes 2003; Ball 2012b). Universities have also increasingly adopted commercial management practices dating back to the Jarratt Report (1985) and the associated use of audit measures for teaching and research (through the Quality Assurance Agency and the Research Excellence Framework respectively).

Within these developments, my analysis focuses on the role of newly introduced undergraduate student fees in shaping the geographies of UK higher education marketization. Undergraduate student fees of £1,000 per annum were introduced by the New Labour Government in England in 1998 and have subsequently risen to a maximum of £9,000. This element of higher education marketization has attracted considerable debate, with critics arguing that it has fundamentally changed the nature of higher education from a public to a private good, reframing students as consumers (Molseworth et al 2010; Williams 2012). In particular, in terms of the spatiality of student fee markets, attention has focused on the different
undergraduate fee regimes between England and the devolved administrations within the UK. Tuition fees were abolished following devolution in Scotland in 2000 in Scotland. Meanwhile, Welsh students studying in the UK only pay a maximum tuition fee of £3,810 per annum and fees in Northern Ireland are currently capped at £3,805 per annum. As a result, considerable academic attention has been paid to the position of student finance within the production of variegated public service provision within a devolved UK (Keating 2005a, 2005b; Raffe and Croxford 2013; Rees and Taylor 2006).

However, as Wilkins et al (2013) note, whilst devolution is clearly an important dimension of the geographies of student fees markets in the UK, greater attention needs to be paid to the ways in which these markets are constituted through a range of spatial relations from the local through to the global. Drawing on the cultural economy literature on markets, particularly Çaliskan and Callon’s (2010) work on marketization, the analysis in this paper reveals that, on the one hand, the marketisation of English higher education through the introduction of student fees, operates on a territorial logic in which assumptions about graduate salary premiums in domestic labour markets are used to justify tuition fees. However, on the other hand, English higher education overflows (Callon 1998b) this territorial framing through the internationalisation of graduate labour markets in ways that challenge the marketisation process itself. In so doing, my argument develops understandings of what Christophers (2014b) terms the ‘interdependent’ nature of territorialized markets by revealing the simultaneously territorial and relational nature of markets.
I develop this argument over four sections. Next I develop geographically sensitive cultural economy accounts of marketisation. I then examine the market devices that have been important in normalising tuition fees within higher education. In the fourth section, I turn to the maintenance work required in higher education marketisation in England. Here I focus on the spatial disjuncture between predominately English higher education and the wider economic, social, cultural and political worlds within which this marketisation is taking place. I conclude by reflecting on the implications of this for economic geographical work on markets and the geographies of education.

**Marketisation and the place of students in English higher education**

Callon’s work on the ‘anthropology of economization’ (Callon and Çaliskan 2010) has been central to the recent growing interest amongst geographers and social scientists in how markets are created, reproduced and challenged (see Berndt and Boeckler 2009, 2011: Boeckler and Berndt 2013). For Çaliskan and Callon (2010:2), marketisation is “the entirety of efforts aimed at describing, analysing and making intelligible the shape, constitution and dynamics of a market socio-technical arrangement” (Çaliskan and Callon 2010: 2). An important insight from this approach is its insistence on the range of actors involved in market making including human agents, knowledge, rules, institutional contexts and technologies, or what Muniesa et al (2007) term ‘market devices’.
Within this broad approach to marketisation, Çaliskan and Callon (2010) identify five activities that are central to the framing of markets: ‘pacifying goods’, such that goods are framed as commodities to be bought and sold (activities that have been the primary focus of geographical research on market making to date); ‘marketizing agencies’ understood as the range of actors involved in pacifying goods and valuing products within markets; ‘market encounters’ through which practices of valuation can take place; ‘price setting’ and ‘market design and maintenance’ that focuses on the dynamic nature of markets and their reproduction over time. However, although this literature is sensitive to the geographical specificity of the contexts in which markets operate, its understanding of the geographies of marketisation remains comparatively neglected. Christophers (2014b) takes up this point by arguing that geographical research has examined the uneven way in which markets have expanded over space but has not adequately understood the spatial constitution of markets themselves. He addresses this by developing Harvey’s (1981) work on the spatial fix within capitalism to call for more research on the territorial qualities of markets, arguing that “modern capitalism is constantly in the process of enacting territorial fixes: constituting, segmenting, differentiating and extracting value from actively territorialized markets at a range of geographical scales.” (Christophers 2014a: 2).

Building on Christophers’ (2014a) work, I examine the actors involved in framing (Callon 1998b) English higher education as a commodity for which students will need to pay. This theoretical approach is operationalized empirically through a two-stage methodology. First, in order to understand the justification, introduction and
increase of student fees in the marketization of English higher education, a database base was compiled of the white papers, policy documents and parliamentary select committee reports that were used to shape Government policy on student fees in England from 1998 within the Government department with responsibility for higher education. The content of these documents was coded using a grounded theory approach in which key themes were used to guide the analysis focusing on the relationship between student fees, employability and graduate labour markets and the territorial and relational qualities of these relationships. Second, in order to understand the relationship between the introduction of student fees and changing graduate labour markets, data was obtained from agencies concerned with the management and audit of higher education and graduate labour markets concerning changes in student numbers and employment outcomes following. This includes information from the Higher Education Statistics Authority (HESA), the Higher Education Funding Council for England (HEFCE), the Institute for Fiscal Studies (IFA), Office for Fair Access (OFFA) and Universities UK and the Office for National Statistics.

**Framing higher education consumption in England**

The charging of undergraduate student fees in England has been primarily based on two key arguments. First, as part of wider austerity politics, from 2010 onwards the coalition Government argued that existing funding structures were not financially sustainable and hence a greater contribution from the individuals who benefit most from higher education, primarily students in the form of increased fees, was needed.
This framing of student finance was underpinned by the Browne review that was launched in 2009 by the Government with a wide-ranging remit to examine the future financial organisation of the higher education system in England. In terms of student fees, this review argued that “the current funding and finance systems for higher education are unsustainable and need urgent reform. In our proposals, the system is put on a more sustainable footing by seeking higher contributions [in the form of fees] from those that can afford them” (Browne Review 2010:8). However, in common with other austerity policies that are underpinned by wider political ideologies as well budget constraints (Kitson et al 2011), the second argument used to normalise fees in English higher education focuses on the value of obtaining a degree. In this respect, value is increasingly measured in terms of the enhanced employability of graduates and the salary premium they are anticipated to enjoy compared with non-graduates. This echoes developments in college education in the US, where the company Payscale, for example, produces an annual ranking of colleges based on the return on the investment through fees that they offer. In England, numerous research reports and surveys seek to quantify the monetary value of holding a degree over non-graduates in England (BIS, 2011; ONS, 2013; The Economist, 2014). For example, in 2011, BIS calculated that the net graduate premium was £108,000 at the time of publication (understood as the present [2011] value of benefits for individuals holding an undergraduate degree compared to an individual with 2 or more A levels less the present costs of obtaining such a degree including direct costs [such as tuition fees] and indirect costs [such as forgone earnings]).
The monetary benefits to an individual of holding a degree have been used as a justification within the policy documents and pieces of legislation that have acted as important market devices associated with the introduction and increase in undergraduate tuition fees. For example, the Dearing Report argued that “Higher education has proved to be an excellent personal investment with a return averaging between 11 and 14 per cent and we expect it to continue to be a good investment, even after further expansion” (Dearing 1997). Building on this understanding that the beneficiaries of higher education (graduates) should increasingly pay for those benefits, in the 2003 White Paper ‘The future of higher education’ the then Labour Government stated its intention to introduce variable tuition fees alongside means tested loans. These variable fees were introduced in England in 2006 with a cap of £3,000 per annum. Subsequently, in 2010 the Government accepted the recommendations of the Browne Review that suggested “in future most teaching in English Universities should be funded through the tuition fee” and hence advised that the fee cap would be raised to £9,000 per annum in 2012 through the 2011 White Paper ‘Students at the heart of the system’.

This fees regime means that students apply for a loan to cover their tuition fees of up to £9,000 per year from the Student Loans Company that then pays the fees on behalf of the student direct to the higher education institution. Students begin to repay their loan after graduation when they are earning more than £21,000 per annum. As Brown and Sargasso (2013:2) argue, these changes can be seen as the “latest, but also the most significant and far-reaching, stage in a long process of marketisation under which, through the policies of successive governments of all
political parties since 1979, British higher education – or at least the core functions of student education and academic research – has increasingly been provided on market or ‘quasi-market’ lines”.

However, whilst in many ways the introduction of tuition fees has been justified by the benefits individual graduates are expected to enjoy financially after graduation, the nature of these benefits are highly variable by university, degree subject and gender, thereby posing important questions concerning the discourses upon which marketisation has been built. For example, figures from BIS (2011) demonstrate that the net lifetime benefit range from £403,353 for a male graduate of medicine and dentistry to £339,511 for their female equivalent (see table 1). Meanwhile, for graduates of historical and philosophical studies, the net lifetime benefit for a male graduate is £1,395 and for females £42,291. Given these variations educational charities have voiced concerns surrounding the implications for graduates of paying their student fees over the course of their career (IFS, 2014) whilst higher education institutions continue to warn about the lack of institutional financial sustainability despite the significant increase in tuition fee income (Universities UK, 2013).

[Insert table 1 here]

The variegated and relative value of holding a degree, as measured by graduate salary premiums, is revealed further when the maintenance of higher education marketisation is considered. Within the marketisation literature, maintenance has received less attention than initial market formation. As Çalıkşan and Callon (2010:
20) argue “We should not, however, forget the regular functioning of markets and the on going work of maintenance that this requires. Maintenance includes many operations that still need to be identified and studied.” Attending to the maintenance of marketization within English higher education through the charging of student fees is particularly valuable for my focus on the spatiality of marketization because it reveals the overlooked extra-territorial dimensions of marketization.

**Maintaining higher education markets through undergraduate student fees**

Marketisation of English higher education through the introduction of fees relies on, firstly, students being prepared to take out a student loan to cover the fees and secondly, their earnings reaching the threshold level of £21,000 in order that the loan is begun to be repaid. Whilst it is still very early to assess the maintenance of the marketisation of higher education in England through student fees, early signals do not point neatly to either market success or failure. For example, significant concerns were voiced that the lifting of the cap on tuition fees would deter students from low income families and those without established family, school or community experience of participating in higher education. However, early figures suggest that higher tuition fees has not had this expected outcome with application rates (albeit low) from low income families being maintained in the new fees regime (OFFA/HEFCE 2013). Meanwhile, a central element in maintaining, and in many ways intensifying, processes of marketisation within higher education in England, particularly in terms of student fees has been austerity politics. Most notably, it was claimed that the removal of the cap on tuition fees would facilitate the growth of
higher education without increasing the cost of higher education funding required from the state at a time when such additional funding would not be available following the severe recession from 2007-8 onwards. For example, the 2011 White Paper states that

Our student finance reforms will deliver savings to help address the large Budget deficit we were left, without cutting the quality of higher education or student numbers and bringing more cash into universities (DBIS 2011, 2).

A central part of the modelling that was undertaken to document the savings that could be made to the Government by raising the cap on tuition fees to £9,000 per annum was an estimation of the salaries that graduates would earn since it was only once an individual was earning £21,000 that they would begin to repay their loans. However, after the implementation of the policy, the assumptions underpinning that modelling have been challenged and it is now estimated that fewer graduates will reach the salary level needed to pay back their loan. This means that more loans will have to be written off and questions are being raised concerning the financial sustainability of the fees regime at current estimates of likely loan repayment (Thompson and Bekhradnia 2013; Crawford et al 2014). Recent estimates suggests that write offs are running at 45% £10bn in student loans made each year, all but nullifying any savings to the public purse made following the introduction of the new fee system (Guardian 2014).
The explanations for this difference in finances are numerous with critics arguing that the savings were not the prime reason for the introduction of fees since this was driven by the wider ideologies of austerity and neoliberalisation (McGettigan, 2013; see also Ball 2012a). However, a further explanation centres on one of the key discourses underpinning the normalization of paying for higher education and hence its marketisation in England – the salary premiums that graduates can expect above non graduates that encourage individuals to take out the debt needed to invest in their human capital through obtaining a degree in the first place.

Brown et al (2011:5) term this the ‘opportunity bargain’, arguing that under neoliberalism in the UK and US from the 1980s onwards, “the state’s role was limited to creating opportunities for people through education to become marketable in the global competition [for jobs], in which economic fate rested on success in the job market”. However, as Brown (et al 2011) go on to demonstrate, whilst salary premiums for graduates can remain high, this is no longer guaranteed for all graduates, raising questions concerning the implications for individuals of participating in a marketised higher education system involving higher fees. Four major reasons can be identified for this. Each of these reasons demonstrates how the experiences of graduates, and hence processes of marketisation of English higher education through the charging of student fees, need to be located within the global transformations of labour and work since these extra-territorial relations are fundamentally changing graduate labour markets and hence the context within which individuals strategise about the need to take out debt in order to fund higher education in England.
First, there has been an ‘education explosion’ (Brown et al. 2011) with significant increases in the number of graduates from emerging economies competing for graduate jobs alongside individuals from the English higher education system. Table 2 illustrates how participation rates in higher education in OECD countries, or what the OECD terms tertiary education typically varies between 25 and close to 50% with an OECD average of 32% of the working age population. Whilst the equivalent percentage figures for emerging economies are comparatively low, given the large populations of countries such as Brazil and China, the numbers of graduates from these countries are high. The increase in student numbers in the UK supports observations that the introduction of student fees did not significantly deter students from studying from a degree (OFFA.HEFCE 2013) as well as the poor job prospects for young people in the UK in the wake of the financial crisis (ONS 2014). 

[Insert table 2 here]

Second, in addition to entering numerically larger global graduate labour markets, graduates from English higher education also have to compete in labour markets in which the nature of work and associated remuneration are changing. Brown et al. (2011) term this the ‘quality-cost revolution’, in which employers increasingly demand higher skilled workers at lower costs, thereby breaking the assumption of binary labour markets comprised of highly skilled, well paid work on the one hand and low paid, low skilled work on the other. The third factor changing the nature of graduate labour markets globally builds on this and centres on the increasing use of
information technology as a managerial tool to codify professional and technology knowledge – a set of activities known as digital taylorism. This facilitates the circulation of such knowledge globally (particularly to emerging economies) in an effort to reduce labour costs (Head 2005),

Fourth, the experiences of graduates themselves have become increasingly differentiated with a small proportion of graduates enjoying considerable and in many ways increasing salary premiums (see, for example, Muzio and Ackroyd 2005 on salary stratification in the legal profession). This process has been supported and justified by powerful discourses promoted by consultancy and executive search firms that there is a ‘war for talent’ such that even though there are increasing numbers of graduates, there is a shortage of the most highly skilled individuals, capable of managing large organizations (Michaels et al 1997).

These four factors suggest that holding a degree from an English higher education institution, in common with graduates globally, no longer confers the same ‘positional advantage’ (Brooks and Everett 2009) relative to other job seekers as the number of graduates globally increases. Recent figures demonstrate that despite the questions this poses for the value of an undergraduate degree or what DBIS (2011) terms ‘student-consumer value’, applications to university in the UK continue to increase suggesting that young people are choosing to pay the fees required to obtain a degree from an English higher education institution.
However, at the same time growing numbers of graduates are working in non-graduate level jobs, working part time or are under employed. For example, 47% of graduates in 2013 were working in occupations for which a higher education qualification was not required (ONS 2013). Moreover, HESA (HESA 2011) figures reveal that following the 2008 financial crisis, the number of UK graduates securing work overseas within 6 months of graduation had increased 27% by 2011, resulting in concerns about the ability of the Student Loans Company to secure repayment from them. Indeed the Chair of the Committee of Public Accounts asked “Will they [graduates working overseas] every pay back their loans? The Student Loans Company simply doesn’t know” (Commons Select Committee 2014). Increased graduate under employment in the UK coupled with the greater international mobility of graduates suggests that in the future, fewer graduates than expected are likely to achieve the earnings level of £21,000 per annum required before loan repayments comments and those that do will do so later on in their careers. This delay in repaying fees matters in terms of meeting austerity targets since the loan is written off 30 years after an individual becomes eligible to make repayments, thereby also increasing the likelihood that the loan will not be repaid. As such, the changing global nature of graduate labour markets appears not to be deterring individuals from entering an increasingly marketised English higher education system currently. However, it is important to examine the extra-territorial socio-economic relations that intersect with the introduction of student fees in England through a focus on graduate labour markets. Whilst the Student Loans Company acknowledges the possibility that students may work overseas after graduation and has a mechanism for collecting their fees (Student Finance England 2013), the
analysis above demonstrates likely future challenges to the financial modeling upon which the fees regime is built as well as raising important political questions concerning the graduate premiums individuals might expect within changing global graduate labour markets (see, for example HEPI 2015 on different scenarios for the role of student loans within UK Government finances).

Conclusions

In this paper, I have examined the marketisation of English higher education through the introduction of student fees from an economic geography perspective. Brown and Carasso (2013:1) argue these changes amount to ‘the most radical [reforms] in the history of UK higher education, and amongst the most radical anywhere’. However, economic geographical research into the marketisation of higher education, and educational services more broadly, remains in its infancy. Therefore, this paper contributes to the growing geographical literature that understands education and learning in relation to wider socio-economic relations (see Thiem 2009), from an economic geographical perspective. In particular, I have drawn on the growing cultural economy of markets literature to examine the ways in which a central part of marketisation in higher education has been to normalise the paying of fees in order to secure a degree, emphasising the economic geographies that are at work in this process of marketisation.

In this respect, the case of the introduction of student fees in England demonstrates the importance of understanding the territorial and extra-territorial qualities of
marketisation. Whilst policies aimed at facilitating marketisation have emphasised the high quality of a UK higher education in particular, the market for higher education in England is tied into a wider socio-economic relations in which graduates increasingly compete within global labour markets and competition for graduate jobs has increased markedly, leading to challenges for marketisation in terms of meeting the planned savings for the Government the introduction of higher tuition fees was supposed to facilitate. As such, the geographies of higher education associated with the introduction of student fees present both opportunities and challenges to marketisation and, in so doing, open up space for social scientists to reveal the weaknesses and associated sites of critical intervention in what are sometimes assumed to be inevitable marketisation (a point taken up by the emerging Polanyian approaches to markets [see Peck 2013]). A geographically sensitive approach to markets, therefore, demonstrates the academic but also political value of thinking more fully about the geographies of marketisation and the challenges different spatial qualities from the territorial to the relational make to the very process of marketisation itself and the difficult choices facing young people as they make decisions about higher education participation.

References

Ball S 2012a *Global Education Inc*, Routledge, London

Ball S 2012b Performativity, commodification and commitment: an I-spy guide to the neoliberal university *British Journal of Educational Studies* 60 17-28

Berndt C and Boeckler M 2009 Geographies of circulation and exchange: constructions of markets *Progress in Human Geography* 33 553-551

Berndt C and Boeckler M 2011 Geographies of markets: materials, morals and monsters in motion *Progress in Human Geography* 35 559-567

BIS 2011 The returns to higher education qualifications, BIS research paper No 45, Department of Business, Innovation and Skills, London

BIS 2014 Terms of reference for the Nurse Review, Department of Business, Innovation and Skills, London BIS/14/1324


Brooks R and Everett G 2008 The impact of higher education on lifelong learning *International Journal of Lifelong Education* 27 239-54

Brooks R and Waters J 2009 International higher education and the mobility of UK students *Journal of Research in International Education* 8 1475-2409

Brown R with Carasso H 2013 *Everything for sale? The marketisation of UK higher education* Routledge, London

Browne Review 2010 Securing a sustainable future for higher education available from


Çaliskan K and Callon M 2010 Economization, part 2: a research programme for the study of markets *Economy and Society* 39 1-32


Christopher B 2012 Markets, the media, and the state of contemporary economic geography *Dialogues in Human Geography* 2 243-245
Christopher B 2014a On the performativity of pill pricing: theory and reality in the economics of global pharmaceuticalization *Antipode* 46 1054-1071

Christophers B 2014b The territorial fix: price, power and profit in the geographies of markets *Progress in Human Geography* 38 754-770

Collini S 2013 [http://www.lrb.co.uk/v35/n20/stefan-collini/sold-out](http://www.lrb.co.uk/v35/n20/stefan-collini/sold-out), accessed 04/08/14


DBIS 2011 *Higher Education. Students at the Heart of the System* Cmnd 8122,

London: DBIS

Dearing Report 1997 Higher education in the learning society

The Economist 2014 Wealth by degrees; free exchange *The Economist* 411, 8893, 66
Greenaway D and Haynes M 2003 Funding higher education in the UK: the role of fees and loans *The Economical Journal* 113 F150-F166


Guardian 2014 Student fees policy likely to cost more than the system it replaced [http://www.theguardian.com/education/2014/mar/21/student-fees-policy-costing-more](http://www.theguardian.com/education/2014/mar/21/student-fees-policy-costing-more), accessed 19/8/14


HEPI 2015 The accounting and budgeting of student loans Higher Education Policy Institute, Oxford

HESA 2011 Destinations of leavers from higher education institutions 2010/11
IFS 2013 Payback time? Student debt and loan repayments: what will the 2012 reforms mean for graduates IFS Report R93


Keating M 2005b Policy convergence and divergence in Scotland under devolution Regional Studies 39, 453-463


Lai K P Y 2011 Marketisation through contestation: reconfiguring China’s financial markets through knowledge networks Journal of Economic Geography 11, 87-117

Lovell H and Smith S J 2010 Agencement in housing markets: the case of the UK construction industry Geoforum 41, 457-468
Lynch K 2006 Neo-liberalism and marketization: the implications for higher education European Educational Research Journal 5, 1, 1-17

MacKenzie D 2003 An equation and its worlds: bricolage, exemplars, disunity and performativity in financial economics Social Studies of Science 33, 831-868


McGettigan A 2013 The great university gamble Pluto Press, London


Muzio D and Ackroyd S 2005 On the consequences of defensive professionalism: the transformation of the legal labour process *Journal of Law and Society* 32, 4, 615-642


ONS 2014 Economic Review, February 2014, Philip Wales, Office for National Statistics

*Geoforum* 48, 225-235


Peck 2013 Disembedding Polanyi: exploring polanyian economic geographies

*Environment and Planning A* 45, 1536-1544

Raffe D and Croxford L 2013 One system or four? Cross border applications and entries to full-time undergraduate courses in the UK since devolution *Higher Education Quarterly* 67, 111-134

Rees G and Talyor C 2006 Devolution and the restricting of participation in higher education in Wales *Higher Education Quarterly* 60, 370-391


Telegraph 2013 US universities ‘seeking to recruit more British students’

Thiem C H 2009 Thinking through education: the geographies of contemporary educational restructuring Progress in Human Geography 33, 154-173


Universities UK 2013 The funding environment for universities: an assessment available from http://www.universitiesuk.ac.uk/highereducation/Documents/2013/FundingEnvironmentForUniversities.pdf, accessed 04/08/14

Williams J 2012 Consuming higher education: why learning can’t be bought Bloomsbury Academic

Wilkins S, Shams F and Hulsman J 2013 The decision making and changing behavioural dynamics of potential higher education students: the impacts of increasing tuition fees in England Educational Studies 39 125-141
Table 1: Individual net lifetime benefit of undergraduate degrees for selected subject areas

<table>
<thead>
<tr>
<th>Degree subject</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicine and dentistry</td>
<td>£403,353</td>
<td>£339,511</td>
</tr>
<tr>
<td>Biological sciences</td>
<td>£77,197</td>
<td>£54,379</td>
</tr>
<tr>
<td>Veterinary sciences</td>
<td>£164,859</td>
<td>£127,503</td>
</tr>
<tr>
<td>Physical/environmental sciences</td>
<td>£108,020</td>
<td>£76,106</td>
</tr>
<tr>
<td>Mathematical and computer sciences</td>
<td>£151,507</td>
<td>£121,751</td>
</tr>
<tr>
<td>Engineering</td>
<td>£157,124</td>
<td>£99,116</td>
</tr>
<tr>
<td>Architecture, building and planning</td>
<td>£169,545</td>
<td>£81,128</td>
</tr>
<tr>
<td>Social studies</td>
<td>£123,825</td>
<td>£73,760</td>
</tr>
<tr>
<td>Law</td>
<td>£214,626</td>
<td>£108,246</td>
</tr>
<tr>
<td>Business and administrative studies</td>
<td>£130,165</td>
<td>£100,424</td>
</tr>
<tr>
<td>European languages and literature</td>
<td>£66,322</td>
<td>£56,679</td>
</tr>
<tr>
<td>Historical and philosophical studies</td>
<td>£1,395</td>
<td>£42,291</td>
</tr>
<tr>
<td>Education</td>
<td>£89,634</td>
<td>£142,051</td>
</tr>
</tbody>
</table>

Source: adapted from BIS (2011)
Table 2: Percentage of the population (aged 25-64) that has attained tertiary education for selected OECD and G20 countries

<table>
<thead>
<tr>
<th>Country</th>
<th>2008</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>33</td>
<td>38</td>
</tr>
<tr>
<td>Canada</td>
<td>47</td>
<td>51</td>
</tr>
<tr>
<td>France</td>
<td>28</td>
<td>30</td>
</tr>
<tr>
<td>Germany</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td>Ireland</td>
<td>31</td>
<td>38</td>
</tr>
<tr>
<td>Korea</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>New Zealand</td>
<td>38</td>
<td>39</td>
</tr>
<tr>
<td>Norway</td>
<td>33</td>
<td>38</td>
</tr>
<tr>
<td>UK</td>
<td>30</td>
<td>39</td>
</tr>
<tr>
<td>US</td>
<td>39</td>
<td>42</td>
</tr>
<tr>
<td>Other G20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>China</td>
<td>13(^1)</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: OECD Education at a Glance 2008, 2013. The OECD uses tertiary education to include study leading to an undergraduate (first) degree, study related to entry into high skilled professions (e.g. medicine) and programs including technical and vocational courses lasting at least two years (see [http://stats.oecd.org/glossary/detail.asp?ID=1436](http://stats.oecd.org/glossary/detail.asp?ID=1436)). Dates selected to cover the impact of the introduction of student fees in the UK and the consequences of the 2007-8 financial crisis.