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Behind the headlines

What's the value of
a UK degree?

million+ is a university think-tank, working to solve complex problems in higher education through research and evidence-based policy.

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Foreword

The *Behind the Headlines* series is a new venture for million+, undertaken as part of our role as a university think-tank providing analysis and contributing to the wider policy debate about the role of universities, students and graduates in society. The series focuses initially on the economic outcomes and options of different funding regimes for higher education and student support. As we point out, the value of higher education extends far beyond financial returns to individuals and the Treasury. The opportunity to study for a degree can be truly transformative for individuals. However, at a time of austerity, questions have been raised about the merits of investing in higher education. Governments and the public, both now and in the foreseeable future, will also face difficult decisions about how best to invest Treasury and taxpayer money so it is important to review the higher education 'balance sheet'.

To provide the analysis which underpins the *Behind the Headlines* series and examine the monetary value of a university education and options for funding, million+ and London Economics have re-established the partnership which previously informed earlier research that focused on funding and student support regimes. To set the scene, *What's the Value of a UK Degree?* investigates the economic costs and benefits of investment in higher education to the Exchequer, taxpayer and the individual. The conclusions are clear cut: higher education remains an exceptionally good investment for individuals and the taxpayer.

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Introduction

Recent debates about the funding of higher education have centred on how to, and who should, pay for these costs. It is indisputable that, regardless of the detail of the funding regime adopted, higher education is a cost to government and therefore to taxpayers.

However, higher education also has outcomes and benefits for the Treasury, the individual, society and the economy, which need equal consideration. A key task of any government is to ensure that the revenues it receives from taxpayers are deployed as effectively as possible. This is even more important during an economic downturn when there is a corresponding reduction in tax receipts and added pressure to prioritise spending commitments and investment. In terms of the allocation of these scarce resources, it is in everyone's interest to undertake rigorous appraisal of policy changes to ensure that the full economic costs and benefits associated with particular policies are assessed in both the short and long run.

This pamphlet is being published in the context of major challenges to the higher education sector. There has been a significant drop in undergraduate admissions for 2012-13 in England¹. New concerns have emerged about applications to date for admission in 2013-14². Any potential deterioration in tertiary level attainment in the UK when compared to key international competitors (both established and developing)³ will impact on the UK's global competitiveness. The analysis sets out an assessment of some of the key costs and benefits associated with higher education attainment. It examines, also, the extent to which any reduction in higher education participation will have significant and measurable long term consequences on the UK economy⁴ – at both the individual level, as well as for the wider domestic and export economy.

“Any potential deterioration in tertiary level attainment in the UK when compared to key international competitors... will impact on the UK's global competitiveness.”

¹ Evidence from UCAS indicates that there has been an 11% reduction in undergraduate acceptances to UK higher education institutions for 2012/13 compared to 2011/12 (equivalent to 54,000 applicants) and a 13% fall in acceptances to English institutions (equivalent to 51,000 applicants). See http://www.ucas.com/documents/End_of_Cycle_Report_12_12_2012.pdf

² See UCAS 2013-14 cycle applicant figures to 19th November 2012 (http://www.ucas.ac.uk/documents/stats/2013_applicantfigures_nov.pdf) and million+ briefing (http://www.millionplus.ac.uk/documents/million+_parliamentary_briefing_UCAS_applications_2013-14.pdf)

³ See OECD Education at a Glance 2011.

⁴ Previous evidence to the BIS Select Committee Inquiry into fees and funding (based on the modelling of higher education) suggests that compared to 2010/11, student numbers may be anywhere between 30,000 and 45,000 lower in 2012/13.

What are the different sources of value from university degrees?

There are a wide range of both economic and non-economic benefits accruing from degree level attainment. From the *individual's perspective*, the *economic benefits include monetary benefits, such as enhanced earnings and employment outcomes and reduced benefit dependency*.

These are complemented with *non-economic* benefits which include the greater probability of undertaking and completing further learning, as well as the *wider* benefits relating to increased self-confidence, self-esteem, intergenerational and social mobility, and engagement in community activity or voluntary work.

From the *Exchequer* perspective, graduates expand both the tax base as a result of being more likely to be in employment, as well as increasing tax receipts as a result of their enhanced earnings. There are other wider Exchequer benefits associated with degree level provision, such as the reduced demand for NHS services⁵, and reduced interactions with the criminal justice system⁶. There are also a number of benefits to the *UK economy* that are in general not given full consideration. These include the impact of degree level provision on *firm level productivity, competitiveness and profitability*⁷ (over and above employee wage gains); and the *spillover effects* of having highly trained workers working alongside less qualified workers⁸. There are also impacts on the perception and attractiveness of the UK higher education sector abroad that can affect the level of UK exports⁹.

⁵ Feinstein, L., Hammond, C., Woods, L., Preston, J., and Bynner, J., (2003), *The Contribution of Adult Learning to Health and Social Capital*, Centre for Research on the Wider Benefits of Learning Research paper 3, May 2003.

⁶ Feinstein, L., and Sabates R., (2005), "Education and Youth Crime: effects of introducing the Education Maintenance Allowance", Wider Benefits of Learning Research Report No. 14.

⁷ Department for Business, Innovation and Skills RR72, *Estimating the impact of training on firm level productivity*, May 2012.

⁸ Department for Business, Innovation and Skills RR74, *The impact of investment in intangible assets on productivity spillovers*, May 2012.

⁹ Department for Business, Innovation and Skills RR46, *Estimating the value to the UK of educational exports*, June 2011.

Economic benefits to the individual

The approach to estimating the earnings and employment outcomes associated with degree level attainment can be relatively complex. However, comprehensive evidence produced for the Department for Business, Innovation and Skills (June 2011¹⁰) indicated that there were substantial labour market benefits associated with degree level qualification attainment across the United Kingdom.

Specifically:

- > The average¹¹ *earnings premium* associated with an undergraduate degree for working-age adults stands at approximately 27% compared to possession of two or more GCE 'A' Levels. Women post a higher return compared to men (30% and 23% respectively). There are also substantial earnings returns to Master's degrees, with working-age men and women achieving a 9% and 10% earnings premium respectively compared to possession of an undergraduate degree¹².
- > An undergraduate degree increases the probability of an individual being employed over their working life by approximately 3 percentage points compared to possession of 'A' Levels (with women achieving a boost of 4 percentage points compared to a 2 percentage point employment boost for men). Women in possession of a Master's qualification are 2.5 percentage points more likely to be employed over their working life compared to women in possession of undergraduate degrees (1 percentage point for men).

There is a common belief that in periods of relatively high graduate unemployment, undertaking higher education qualifications becomes less worthwhile. However, the analysis presented reiterates that higher education qualification attainment is actually *more* worthwhile during economic downturns as the employment and earnings outcomes achieved by those not in possession of higher education qualifications is likely to deteriorate to an even greater extent than for graduates. This analysis is based on information across a 15 year period between 1996 and 2010 and demonstrates the robustness of the earnings and employment outcomes over the longer term, irrespective of the position in the economic cycle.

It is useful to consider the direct and indirect costs to the individual associated with undertaking higher education qualifications, and contrast these to the benefits. From an economic perspective, the direct costs include the tuition fees, minus any contribution from the Exchequer (such as any maintenance grant or the proportion of the maintenance and fee loans that would not be expected to be repaid).

“...the analysis presented reiterates that higher education qualification attainment is actually more worthwhile during economic downturns.”

¹⁰ Department for Business, Innovation and Skills RR 45, *The returns to higher education qualifications*, June 2011.

¹¹ There is substantial variation around these averages depending on the subject of study, the grade of degree, age of acquisition, and whether the degree is in one subject area or covers more than one subject area.

¹² Note that these econometric analyses consider the earnings premium associated with possession of an undergraduate degree compared to the next highest level of qualification, controlling for a range of personal and socioeconomic characteristics. Therefore, the results relating to men suggest that a representative male in possession of an undergraduate degree, on average, achieved an earnings premium of 23% over their working life compared to a male

in possession of GCE A Levels as their highest qualification, holding other personal characteristics (such as age, ethnic origin, region of residence) and job characteristics (such as permanent/temporary contract, full time/part time) constant. As such the results should be interpreted as the return to the qualification per se rather than the returns generated by the individual in possession of the qualification.

Economic benefits to the individual

continued

The indirect costs to the individual include the foregone earnings during study. Comparing these costs during study to the longer-term benefits over a working lifetime following graduation (i.e. after-tax enhanced earnings are compared to those in possession of A Levels), the analysis suggests that before the introduction of the current 2012/13 system of higher education fees and funding:

> The average *net graduate premium*¹³ associated with an undergraduate degree was estimated to be approximately £115,000, with men achieving a net graduate premium of approximately £128,000, while the net graduate premium for women stood at approximately £87,000.

> The average postgraduate premium associated with possession of *Master's degrees* (relative to possession of an *undergraduate degree*) stood at just over £62,000 and £44,000 for men and women respectively.

> Treating higher education qualification attainment as a pure investment decision (i.e. trading off the up-front costs during study and the longer term benefits), the analysis suggests that the *rate of return* to the individual from completing an undergraduate degree was 14.8%, while the rate of return from a postgraduate degree stood at 12.7%.

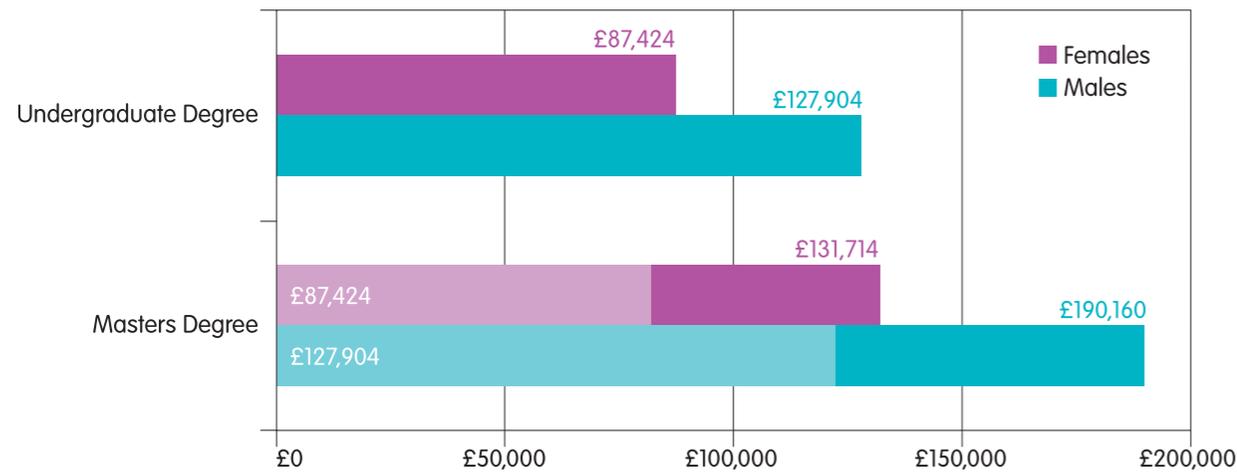
Applying these estimates to the *single cohort* of approximately 342,500 first time full-time and part-time undergraduates entering English higher education institutions in 2010/11, the total value of these qualifications to those new entrants stands at approximately £36 billion in today's money terms. Taking a similar approach for the 75,000 full time and part time students undertaking Masters programmes in English higher education institutions¹⁴, the total value of these qualifications to those 2010/11 new entrants stands at £4.432 billion in 2012 prices.

Following the numerous changes to higher education tuition fees and funding arrangements for entry year 2012/13, and the resulting increase in the student/graduate contribution, the expected net benefit to the individual from an undergraduate degree has fallen by approximately £5,000 per student/graduate in today's money terms to approximately £110,000. The rate of return would be expected to fall by approximately 2 percentage points to 12.9%.

In addition, any fall in student numbers will reduce the volume of graduates expected to achieve these returns. The reduction in student numbers that has been forecast to occur (c. 30,000¹⁵) in 2012/13 will have an impact over a lifetime. In actual money terms, the total economic impact of undergraduate degree level qualifications would be expected to be £33 billion for the 2012/13 cohort, in aggregate. This is equivalent to a reduction of £3 billion from this single cohort of new-entry students over their working lives (expressed in today's money terms), compared to the previous cohort.

“The reduction in student numbers that has been forecast to occur in 2012/13 will have an impact over a lifetime.”

Figure 1: The average net graduate and Master's premium



Source: London Economics' analysis of Department Business Innovation and Skills' analysis (2011)

¹³ See glossary for a full definition of the net graduate premium. The original estimates were presented in 2010 prices; however, for this report, have been rebased to 2012 prices using annual CPI (from the ONS).

¹⁴ From 2010/11 HESA information, we have assessed that 81.8% of the 91,620 UK domiciled first year taught postgraduate students attend higher education institutions in England.

¹⁵ London Economics have undertaken a number of modelling exercises to assess the impact of changes in student support arrangements on higher education participation. In written evidence to the BIS Select Committee, the London Economics' analysis forecast that the change in fees and funding arrangements would result in a reduction in first time undergraduates of approximately 45,000 (both FT and PT). <http://www.publications.parliament.uk/pa/cm201012/cmselect/cmbis/885/885.pdf>. In this report, we provide a more conservative estimate of the reduction in student numbers so as to provide a lower estimate of the impact of changes in fees and funding on economic outcomes.

Economic benefits to the Exchequer

The Exchequer also generates *substantial* long-term economic benefits from the short term funding of higher education qualifications. The long-term benefits to the Exchequer include the additional taxation revenue generated by graduates as a result of their enhanced likelihood of being in employment over their working life, as well as their anticipated higher earnings.

The direct costs associated with higher education provision include, the resources devolved centrally for the purposes of teaching, maintenance grants, as well as the tuition fee and maintenance loan subsidies provided during study. In terms of indirect costs, the Exchequer also foregoes the taxation revenue that would have been accrued if the student had not entered higher education and had been in employment full-time. Taking account of all these short term costs and long term benefits:

> The *overall net Exchequer benefit*¹⁶ associated with the financing of undergraduate degrees stood at approximately £94,000 per degree on average – £108,000 for men compared to £63,000 for women. This corresponds to an Exchequer rate of return of 10.8% on average – 11.4% for men and 9.6% for women.

> These rates of return are significantly above the government's long term interest rate or cost of borrowing. Given these very significant economic returns to higher education, the OECD has also concluded that *"public investments in education, particularly at the tertiary level, are rational even in the face of running a deficit in public finances. Issuing government bonds to finance these investments will yield significant returns and improve public finances in the longer term"* (OECD (2010)¹⁷).

> Given the relatively short duration of Master's degrees (assumed to be 12 months in this analysis) and the relatively limited central government funding, these qualifications offer very high net benefits to the Exchequer. In particular, the net benefit to the Exchequer stands at approximately £71,000 for men and £47,000 for women. This translates into rates of return of 31.9% and 22.5% respectively.

during qualification attainment). The estimates presented relate to the comparison of the costs and benefits associated with degree level attainment under the previous system of higher education fees and funding (i.e. the system that applied to cohort of students prior to 2012/13). The estimates have been presented in 2012 prices (and amended to reflect the level of inflation since the original analysis).

¹⁷ OECD *Education at a Glance 2010*.

¹⁶ See glossary for a full definition of *net Exchequer benefit*. This represents the present value of the Exchequer benefits associated with the provision of an undergraduate degree relative to an individual in possession of 2 or more GCE 'A' Levels (gross Exchequer benefit) minus the present value of the Exchequer costs associated with funding a degree. These costs include the direct costs (such as HEFCE funding and student support) and indirect costs (foregone taxation receipts

> Despite the significant increase in the student loan book and associated subsidies, the removal of a large proportion of funding at undergraduate level has resulted in an overall reduction in Exchequer funding of higher education in 2012/13. As a result, the expected net benefit to the Exchequer from reduced funding of undergraduate education has increased by approximately £2,000 per student/graduate in today's money terms (to approximately £96,000), while the rate of return to the Exchequer would be expected to increase by approximately half a percentage point (to 11.3%).

For the *single cohort* of 342,500 UK domiciled full time and part time undergraduates entering English higher education institutions in 2010/11, the total value of these entrants' qualifications to the Exchequer stands at approximately £28.4 billion over their

working lives in today's money terms. For the 75,000 UK-domiciled full time and part time students undertaking taught Master's programmes, the total value of these qualifications to the Exchequer stands at £4.628 billion in 2012 prices.

Based on London Economics modelling, it is forecast that the number of UK domiciled undergraduate students will fall to 313,000 for 2012/13. A cohort of 313,000 UK domiciled undergraduate students would be expected to generate an Exchequer benefit of **£26.0 billion** over the course of their working lives (expressed in today's money terms). Compared to the previous single cohort of new-entry students in 2011/12, this represents an expected decline in Exchequer benefits of approximately **£2.4 billion** in today's money terms.

Figure 2: The average net Exchequer benefit of financing undergraduate and Master's degrees



Source: London Economics' analysis of Department Business Innovation and Skills' analysis (2011)

Further economic benefits associated with higher education provision – exports

Based on research work commissioned by the Department for Business, Innovation and Skills (June 2011¹⁸), education-related exports are defined as those education related activities that are purchased from income sources overseas¹⁹.

In total, the value of UK education exports was estimated to be approximately **£15.787 billion** (in 2012 prices). Higher education accounted for approximately **£8.788 billion** of this amount, which is approximately 56% of the total value of educational exports (see Table 1). This compares to a 14% contribution from the English Language Training sector; a 10% contribution from private training, and an 8% contribution from the FE sector.

Table 1: Value of education and training exports to the UK economy, 2008/09

Sector	(£m) and proportion of HE (2012 prices)	
Total value of UK education and training exports	15,787.0	(100.0%)
of which Higher Education	8,788.8	(55.6%)
Of which		
Tuition fees (UG and PG)	2,726.2	(31.0%)
Other spending of overseas HE students in the UK (UG and PG)	4,850.0	(55.1%)
Transnational education (HE)	235.3	(2.7%)
Other higher education exports (e.g. research, IP, consulting, charitable donations)	977.3	(11.1%)

Source: London Economics' analysis of Department for Business, Innovation and Skills RR 46 (2011). Note that the original analysis presented estimates for 2008/09; however for comparability, these estimates have been rebased to 2012 prices

¹⁸ Department for Business, Innovation and Skills RR 46, *Estimating the value to the UK of educational exports*, June 2011.

¹⁹ For instance, a student from the EU coming to the UK to complete a postgraduate degree on a scholarship paid by their home government would count as a UK export.

According to this BIS analysis of the higher education contribution, tuition fees from EU and international students make up 31% of HE export income with other direct expenditure from overseas students making up approximately 55% of export income. The remainder is made up of research grant income from overseas, transnational education, and charitable donations. In *per student* terms (across both EU and international students), the information suggests that the UK economy receives approximately **£7,088** per undergraduate student per annum in tuition fee income, as well as a further **£11,988** per student per annum in non-tuition fee expenditure. The corresponding estimates for postgraduate students stand at £8,204 and £14,666 respectively.

In aggregate, undergraduate students from overseas (both EU and international) add £3.43 billion per annum to the UK economy with a further £4.20 billion generated by postgraduate students in today's money terms²⁰.

From an economic perspective, the demand for UK higher education from overseas is likely to be responsive to changes in price levels.

Any increase in tuition fees at undergraduate level could result in a reduction in educational exports from the United Kingdom, even assuming that a significant proportion of students from the European Union are prepared to pay a higher fee rate. The Department for Business Innovation and Skills Research Report assessed the extent to which the higher education fees faced by EU students might impact on UK exports. The analysis suggests that the increase in fees introduced in 2012/13 would result in a 6.4% reduction in EU students²¹. In educational exports' terms this was estimated to be £329 million in 2012/13 and £5.83 billion between 2012/13 and 2024/25 in today's money terms. These estimates are at the lower end of what might be expected given the fact that the impact of higher fees was only assessed at undergraduate level.

This report also assessed the impact on educational exports following the changes in student visa requirements²². The analysis suggests that the reduction in exports as a result of changing visa requirements for international students across the entire education sector between 2012/13 and 2024/25 would be approximately **£2.40 billion** in today's money terms.

²⁰ This BIS analysis was undertaken using information based on HESA estimates of student numbers in 2008/09.

²¹ Note that UCAS applications from EU students to HEIs in England, Wales and Northern Ireland were down by approximately 12%.

²² The Home Secretary announced further changes to student visa processes (12 December 2012). The potential impact of these changes on educational exports has not yet been assessed. <http://www.homeoffice.gov.uk/media-centre/speeches/home-secretary-imm-speech-dec12>.

Further economic benefits associated with higher education provision – spillovers

Spillovers refer to situations in which the activities of one individual induce *external effects* (either positive or negative) on other individuals within the economy. While negative externalities comprise cases in which the effects of an individual's actions are detrimental to the well-being of others, positive externalities represent benefits to the well-being of others.

For example, the spillover effect associated with an investment in an individual worker's training would be the enhanced productivity resulting from the training achieved by *other* workers. This is because it is argued that working alongside more highly educated and experienced workers will induce knowledge spillover effects through interactions between employees (such as imitation, learning-by-doing, social pressure or leading-by-example).

Spillovers, by definition are very difficult to measure. However, the majority of evidence on the *within firm* effects²³ appears to point to a positive impact of co-worker education and training on other co-workers' wages or productivity within companies. Compared to the impact of an additional year of a worker's education on their own earnings (c. 6-7% per annum), in an *average* sized firm, the impact of all co-workers' receiving an additional year of education can add up to 9-12% to the untrained worker's earnings²⁴.

“...the majority of evidence on the *within firm* effects appears to point to a positive impact of co-worker education and training on other co-workers' wages or productivity within companies.”

These analyses also demonstrate that unlike the diminishing earnings' returns connected to a worker's own education, there is no saturation point in relation to the spillover effect associated with other workers' education.

Spillovers can also occur outside the firm. Using local or industry-level information linked to firm-level data, it seems that there exists positive and significant spillovers at a regional level. For example, following a *one percentage point increase in the share of graduates* in the local labour market, Moretti (2004) reports estimates of enhanced wages of between 0.4-1.9% at city level. Bauer and Vorell (2010) find a spillover effect at *regional* level of around 0.2% and 0.6% for high-skilled and low-skilled workers respectively. Bratti and Leombruni (2009) find a spillover effect between 0.7%-1.4% and 0.4%-1.0% on white-collar and blue-collar workers respectively.

As the Department for Business Innovation and Skills (2012²⁵) pointed out: “*the weight of the evidence [internationally] suggests that spillovers from investment in intangible assets [i.e. human capital] exist at many levels.....and these analyses suggest that where these spillovers are estimated alongside the direct effect of the investment in intangible assets, the relative effect of these spillovers is large and often exceeds the direct effect*”.

²³ Within firm effects are defined as those spillovers occurring within a specific firm as a result of the additional education and training received by identified individuals.

²⁴ Battu et al (2003), Metcalfe and Sloane (2007).

²⁵ Department for Business, Innovation and Skills Research Report 74, *The impact of investment in intangible assets on productivity spillovers*, May 2012.

Postgraduate supply

The automatic implication of fewer undergraduates is a reduced pool of prospective postgraduates, both immediately after graduating and in the future.

Information from the Higher Education Statistics Agency (2010) suggests that in 2010/11, of those students completing full time first degrees at UK higher education institutions (both UK domiciled and international students) *with a known destination*, approximately 15.8% go on to undertake further study (only), while a further 8.2% undertake further study in combination with employment within six months of graduating²⁶. The corresponding estimates for part time students stand at 5.1% and 13.8% respectively²⁷.

²⁶ Note that these lower range estimates relate to a period immediately following graduation. Many postgraduate students return to learning several years after the completion of their undergraduate degree. As such, the actual impact could be significantly higher.

²⁷ Note that the HESA destinations survey only refers to students six months post completion of their undergraduate degree and thus underestimates the actual proportion of individuals that might go onto postgraduate study.

Postgraduate supply continued

In addition to the increasing cost of postgraduate fees, as well as the absence of an adequate loan scheme, raising tuition fees at undergraduate level may have a detrimental effect on the proportion of individuals in the 2012/13 cohort deciding to carry on and complete a postgraduate degree. As such, there may be wider impacts associated with the changes to higher education fees and funding beyond undergraduates unless some remedial action is taken by government.

If we assume that 30,000 undergraduate students are deterred from entering higher education in 2012-13, a conservative estimate of the reduction in postgraduate demand six months after graduating would be 7,500²⁸. If this reduction in postgraduate numbers occurred, we would expect to see a £444 million reduction in the lifetime benefits accrued by individuals in the 2012/13 cohort and a £463 million reduction in the Exchequer benefit associated with funding postgraduate study. Since many graduates undertake postgraduate study some years after graduating it is also likely that there will be a knock-on effect on postgraduate enrolments in future years.

²⁸ This estimate is based on the proportion of undergraduate students carrying on to undertake postgraduate studies (c 26% of full time undergraduates and 20% of part time undergraduates). However, as previously noted, these proportions are based on a time period immediately post completion of undergraduate degrees, rather than a longer and more realistic timeframe.

What would be the expected impact of reducing funded student numbers by 30,000?

From an analysis of the various commissioned research reports by the Department for Business, Innovation and Skills (BIS), it is clear that there are significant benefits to the UK economy associated with funding undergraduate degree level qualifications. What might be the effect of the reduced direct funding of undergraduate provision and the subsequent increase in higher education tuition fees?

A 30,000 reduction in the number of UK-domiciled, first degree undergraduates entering higher education in 2012/13 would result in the following economic losses over the next 40 years (expressed in 2012 prices):

- > A reduction in the individual benefits associated with undergraduate degree level attainment of **£3,001 million**
- > A reduction in the Exchequer benefits associated with undergraduate degree level attainment of **£2,360 million**
- > A reduction in the individual benefits associated with postgraduate degree level attainment of **£444 million**

- > A reduction in the Exchequer benefits associated with postgraduate degree level attainment of **£463 million**
- > A reduction in educational exports of **£329 million**

> **This equals a combined reduction in economic benefits of £6,597 million.**

In addition, if the size of the undergraduate cohort remains unchanged from 2012/13 (i.e. is approximately 30,000 fewer than would be otherwise the case), the economic loss to the economy will be of the same magnitude for every yearly cohort of new entrant students.

Table 2: Value of higher education to the UK economy (£m) (2012 prices)

Source	2010/11	2012/13	Change
Individual Benefits	£40,503	£37,059	-£3,445
Undergraduate	36,071	£33,070	-£3,001
Postgraduate	4,432	£3,989	-£444
Exchequer benefits	£33,041	£30,218	-£2,823
Undergraduate	28,412	£26,052	-£2,360
Postgraduate	4,629	£4,166	-£463
Exports	£7,635	£7,306	-£329
Undergraduate	£3,438		
Postgraduate	£4,197		
Total	£81,179	£74,582	-£6,597

Source: London Economics Analysis. All information has been expressed in 2012 prices.

Conclusion

In spite of the economic downturn, as a result of the enhanced earnings and employment outcomes compared to the next best alternative, a UK degree remains an exceptionally good investment for both the individual undertaking the qualification, as well as the Treasury funding their provision – and therefore, by default, the taxpayer. Given this, any reduction in participation rates will not only have consequences for individuals, and the Treasury, but will also impact on the volume of exports generated by the education sector.

It will also reduce the positive spillovers that arise from having a more qualified work-force. Taking into account our estimate that the yearly cohort of first-time undergraduate students in England is reduced by 30,000 following the introduction of higher tuition fees, our analysis suggests that the aggregate cost of this reduced participation in higher education would be at least **£6.6 billion** per cohort, in 2012 prices.

“...a UK degree remains an exceptionally good investment for both the individual undertaking the qualification, as well as the Treasury funding their provision – and therefore, by default, the taxpayer.”

Glossary of terms

Present Value (PV)

The *present value* is defined as the discounted value of a stream of payments made or received in the future, taking into consideration a specific interest or discount rate (see below). The present value represents a series of future cash flows expressed in today's money terms.

Net Present Value (NPV)

The *net present value* is defined as the present value of the benefits minus the present value of the costs associated with a particular activity.

Internal Rate of Return (IRR)

The *internal rate of return* is defined as the discount rate (or rate of interest) such that the present value of a future stream of benefits equals the present value of a future stream of costs. When referring to the rate of return from the perspective of the individual or the Exchequer investment, we refer to the *individual rate of return* or the *Exchequer rate of return*.

Earnings Premium

The *earnings premium* reflects the enhanced earnings associated with possession of a particular qualification. Using an econometric approach, the hourly earnings of individuals in possession of an undergraduate degree are compared to the earnings of individuals in possession of 2 or more GCE A Levels, controlling for other personal and socioeconomic characteristics so that the benefits from the qualification is assessed rather than simply assessing the return to the individual in possession of the qualification. The average earnings premium refers to the percentage premium in hourly wages across the representative individual's working life.

Net graduate premium

The net graduate premium represents the present value of the benefits associated with an undergraduate degree relative to an individual in possession of 2 or more GCE 'A' Levels (gross graduate premium) minus the present value of the costs associated with acquiring a degree. These costs include the direct costs (such as tuition fees minus student support) and indirect costs (such as foregone earnings). An equivalent figure can also be calculated for other qualifications.

Net Exchequer benefit

The net Exchequer benefit represents the present value of the Exchequer benefits associated with the provision of an undergraduate degree relative to an individual in possession of 2 or more GCE 'A' Levels (gross Exchequer benefit) minus the present value of the Exchequer costs associated with funding a degree. These costs include the direct costs (such as HEFCE funding and student support) and indirect costs (foregone taxation receipts during qualification attainment). An equivalent figure can also be calculated for other qualifications.

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