

Economic analysis of Higher Education fees and funding in the health professions

A Response to the Council of Deans of Health

8th June 2016

Following the proposed changes to HE fees and funding arrangements in Allied Health Professions, it is encouraging that the recent Council of Deans of Health [briefing](#) agrees with an overwhelming majority of the key findings presented in the London Economics' [report](#) for UNISON and the NUS.

Areas of agreement

Specifically, following the detailed analysis of both current and proposed funding arrangements, there does not appear to be any disagreement with the fact that the replacement of student maintenance grants with repayable loans, as well as the introduction of tuition fee loans, will result in a **71% increase** in the cost borne by a representative student/graduate completing a three year degree in Allied Health Professions (on average). Putting aside the impact of this increase in costs on demand (which we discuss below), there appears to be no disagreement that a cohort of prospective students will be made almost **£½ billion worse off** by the proposed changes. In addition, there appears to be consensus that because of the rigour London Economics applied to the modelling of the RAB charge (i.e. the proportion of the loan written off by the government), the proposed savings accruing to HM Treasury will be significantly less than the headline estimates (approximately **£88 million** rather than **£534 million**) because of the lower earnings in the profession – thereby leaving a question mark over whether there will be any savings at all.

Elasticity of demand

The main point of contention relates to the assessment of the **elasticity of demand** with respect to the 71% change in price. The fundamental principles of economics suggest that holding other factors constant, an increase in the price of a good will result in a reduction in the quantity demanded – in other words, a downward sloping demand curve. There are exceptions – but they are very rare. Therefore, the issue at the core of this analysis is the *extent* to which quantity demand is responsive to changes in price (how steep is the demand curve?). The Council of Deans of Health suggest that because the number of applications exceeds the number of enrolments, then increasing costs by 71% may have an effect on *applications*, but a sufficient number of applications will persist to maintain student enrolment. In other words, their assertion is that the elasticity of demand equals **zero**.



However, as every applicant can make up to 5 applications (with the average being 4.41), **it is important to note that the number of applications greatly exceeds the number of applicants**, and framing the discussion in terms of applications is potentially misleading.

Lack of evidence on latent demand amongst qualified applicants

The *first point* is that there is **no evidence** whatsoever to support this assertion of zero elasticity of demand. It might be the case that the number of applications currently exceed the number of enrolments; however, there is no objective evidence in relation to the extent to which **suitably qualified applicants** exceed current enrolment levels. This is important given the more involved nature of applications compared to the application process in many other subject disciplines.

More generally, any assertions put forward by the Council of Deans suggesting completely unresponsive demand should be evidenced by an assessment of the responsiveness of *suitably qualified applications* and the cost of undertaking a three-year degree. If it is the case that the application rate in nursing and Allied Health Professions is even slightly responsive to changes in price, then the presumption that there is a latent pool of unmet demand might be fundamentally misleading.

Our estimate of elasticity of demand is evidence based – and conservative (or optimistic)

London Economics have modelled an elasticity of demand of **-0.087¹**. This means that following a 100% increase in price, there would be an **8.7%** reduction in quantity demand. This approach assumes that investing in higher education is **highly unresponsive** to changes in price. The estimation of the elasticity of demand is based off an analysis of higher education participation undertaken by the **Institute for Fiscal Studies** using enrolment data relating to the introduction (and removal) of up-front fees in higher education in the late 1990s, and the introduction of differential top-up fees (and associated maintenance grants) in 2006. In other words, this was a rigorous study spanning a decade of changes to higher education fees and funding undertaken by a highly reputable research organisation.

Taking a more practical example to illustrate, suppose that there were **100** places available in Allied Health Professions undergraduate degree level courses. Associated with this number of places, UCAS data suggests there are approximately **8.62 applications** per acceptance/place, implying **862** applications – though not necessarily from unique applicants² (there are approximately **195**!). Hence, the presumption of healthy excess demand.

From a recent **Freedom of information**³ request made to higher education institutions, we understand that approximately **17.8%** of *applications* in nursing, midwifery and Allied Health Professions are assessed to have come from applicants meeting the eligibility and suitability criteria, and who would have been offered a place. This suggests that the total pool of qualified *unique applicants* is closer to **153 (i.e. 862*.178)**.

The crucial question is how sensitive applications are to changes in price. It is probable that applications are more responsive to increases in price than actual HE participation. We also know that following the introduction of £9,000 fees in 2012, which equated to an increase in costs of approximately 10%, applications declined by 10% the following

¹ Hemett and Marcotte (2008) estimate the elasticity of demand for higher education to be **-0.1072**.

² Note that the number of applications greatly exceed the number of applicants. Specifically, according to UCAS, there are **4.41** applications per applicant. This suggests that the number of unique applicants per 100 places/acceptances is closer to **195**.

³ Note that the Freedom of Information request was made to 20 HEIs in England that have the greatest numbers of medical and health students (according to UCAS). Of the 20, we received 17 responses; however, some universities (8) did not collect all the information needed to assess the proportion that met the criteria and could have been offered a place. As such the analysis is based on those 9 HEIs that consistently collected the relevant information.

year. Five years later, applications from English domiciled students were still 3-4% lower than in 2011. This suggests that the elasticity of applications might be anywhere in the region of -0.3 to -1.0⁴.

How sensitive do applications need to be to increases in prices to result in lower demand?

If the elasticity was in the middle of this range and equal to **-0.5**, this implies that a 10% increase in the cost of undertaking a degree will be associated with a reduction in applicants by 5%. Using our analysis relating to the expected price increase, this implies that the 71% increase in price would be expected to reduce the number of applicants by approximately **35.5%** - leaving just **99 suitable applicants ($153 \times (1 - 0.355)$)**. This is by no means an implausible estimate.

Our analysis suggests that if demand for higher education amongst nurses, midwives and allied health professionals is as sensitive as we suggest (i.e. a little but not very), then this eligible pool of demand might actually **be insufficient to meet current supply**.

Counterfactual

It is correct that there has not been any analysis since 2012 of the impact of the introduction of £9,000 fees on demand for higher education. However, this evidence gap would suggest that this type of analysis is undertaken *before* such a fundamental change in funding arrangements is initiated. However, a simple assertion that student numbers are now higher than in 2011 or 2010 is not evidence that recent or proposed changes in the HE costs incurred by students/graduates have had - or will have - no effect on demand⁵. This is a misleading argument, and as the Council of Deans rightly point out, understanding the counterfactual is important. In the absence of the increase in tuition fees to £9,000 per annum, how much higher would higher education participation be than currently the case? **Zero** like the Council of Deans of Health suggest or approximately **1.5%** higher using our estimate of the elasticity of demand?

How reasonable are the estimates of elasticity of demand made by London Economics compared to the Council of Deans of Health?

To understand some wider estimates of the responsiveness of demand to changes in price, below we present some estimates for a range of goods and services. Potentially the most comparable to this analysis, the elasticity of demand for private schooling between 1993 and 2008 in England was estimated to be **-0.26** (IFS, 2010). In relation to other products, the elasticity of demand for goods with limited substitutability included: energy **-0.30 to -0.80** (IFS, 2013) **-0.64** (Bowen, 2011); fuel **-0.1 to -0.5** (RAND Europe, 2014); road trips **-0.10 to -0.30** (Transport for London, 2008) ; and air transport **-0.50** (Department for Transport, 2009). In relation to a range of foods, the elasticity of demand was estimated to be between **-0.50** and **-1.0** (i.e., cheese **-0.35**; Fats **-0.75**; Milk **-1.0**; Butter **-0.7** (IFS, 2010)). In a review of 34 pieces of academic research provided by HM Revenue and Customs, the elasticity of demand for beer was estimated to be **-0.44**, compared to **-0.78** for wine and **-0.85** for spirits. The lowest estimate of the elasticity of demand for any form of alcohol across any of the studies undertaken between 1945 and 2013 was -0.08.

⁴ Note that following the increase in tuition fees in 2012 (which were equivalent to a 10% increase in **total** direct and opportunity costs), applications from English domiciled students declined by approximately 10% between 2011 and 2012, and in 2015 were still 3% lower than 2011 levels. Clearly, there may be a range of other factors that affect demand, however, currently, there is limited evidence of the different factors that may have affected HE participation.

⁵ Note that aggregate UCAS applications in 2015 amongst students domiciled in England are still **3.3%** below 2011 levels, although there has been a 26% increase in applicants amongst non-EU international students over the same period.

In general, the elasticity of demand ranged between **-0.1** and **-1.0**, meaning that a 10% increase in price would result in a reduction in demand of between **1%** and **10%**. Given this, we would continue to stick with our hugely conservative estimate that higher education demand is affected by price – but to a very limited extent. Note that **the reduction in demand is driven by the 71% increase in the costs of study – not by the estimate of the elasticity of demand.**

The impact on Higher Education Institutions

When London Economics undertook the economic impact analysis, we based our research on the limited information contained within the 2015 CSR. There was no information contained in the 2015 CSR suggesting that any compensating income might be available to HEIs following the reduction in the unit of resource available as a result of the ‘Offa tax’. Note however, we wouldn’t describe this HEI expenditure as an ‘Offa tax’ as it is aimed at promoting recruitment and retention amongst students from non-traditional backgrounds. It is a widening participation subsidy, and given the widespread evidence relating to the reversal in [social mobility](#), should be encouraged. We note throughout our report that the position of HEIs will be worse off (by between £57-77 million per cohort) *unless* there is compensating income provided by the Exchequer. The Department of Health Impact Assessment suggests that there will be compensating income to fill the shortfall; however, clearly, this makes the position of the Exchequer worse than previously imagined – and essentially eliminates any possible savings that might have been achieved from these funding changes.

In relation to the other points raised in the Council of Deans of Health briefing, we respond to a number of other points below:

University funding – In as much as HEFCE funding will be allocated in the same way under the proposals as currently the case, the analysis does include the additional costs associated with the provision of high cost subjects. In addition, the modelling of the resource flows between the Exchequer, HEIs and students/graduates also takes into account London weighting. As a result, the assertion that the analysis is simplistic and inaccurate is incorrect.

Presenting a range of scenarios – From the perspective of the student and the Exchequer, given the fact the current and proposed funding arrangements were clearly identified, there is no requirement to test hypothetical alternatives. As is best practice, sensitivity analyses were presented in detail to reflect different assumptions in relation to earnings amongst graduates in nursing and Allied Health professions – and as a result - the RAB charge. This sensitivity analysis results in significantly lower estimates of the Exchequer benefits derived from the proposals.

Appropriate discount rates for the RAB charge – the suggested discount rate for the RAB charge was amended in the 2015 CSR. All analysis of current and proposed changes adopts the same discount rate, as clearly any differential use would be misleading. It is not possible for London Economics to provide a discussion of the appropriateness of alternative discount rates, but simply to ensure the consistency of the methodology when comparing current and proposed systems.

The impact of debt on higher education participation - It is important to note that the role of debt is not considered as having an impact on demand (although it might in reality). Debt is misleading, because a significant proportion is written off by the Exchequer. Therefore, when considering debt, we simply look at the costs of the debt (i.e. who pays the debt?).

Health Education England - Although no regulator is perfect, having considered the impact of reduced regulation and increased marketisation on higher education, we have seen many of the [unintended consequences](#) that occurred alongside previous reforms. We remain of the belief that some degree of regulation of this sector is crucial to the proper functioning of the market.

Having undertaken a number of significant pieces of work looking at workforce planning amongst the health workforce, and recognising the many challenges in relation to in-course attrition and non-

uptake, as well as turnover amongst the substantive workforce, we are acutely aware of many of the workforce planning issues faced by LETBs.

We are also acutely aware of the dependency of workforce planners on Bank and Agency staff, and simply make the case that there are links between the stability of the substantive healthcare workforce and a range of outcomes related to the quality of the care received by patients.