

## FUNDING HIGHER EDUCATION IN THE UK: THE ROLE OF FEES AND LOANS\*

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Higher education has undergone considerable expansion in recent decades in a number of OECD countries. Expansion has been especially dramatic in the UK where aggregate student numbers have doubled in 20 years. However, over the same period, funding per student has halved in real terms. In the UK as well as in other countries, most notably Australia, innovation to diversify the funding base has taken place. This has included a limited role for fee contributions. This paper makes the case for much greater reliance on fee contributions from students, accompanied by a greater availability of income contingent loans.

Over the last 40 years of the twentieth century, the higher education (HE) marketplace in the UK changed profoundly, with the pace of change accelerating dramatically over the last decade. Major systemic changes include:

- A threefold increase in the number of universities since the 1960s: partly as a consequence of new entry, with around 20 new universities created in the 1960s; and partly as a result of the abolition of the so-called ‘binary divide’ in the early 1990s, which resulted in over 40 former polytechnics gaining university status. There are now almost 100 universities in the UK.
- A growth in consumers which outstripped the growth in providers. In the early 1960s there were just 400,000 (full-time and part-time) students at British higher education institutions; in the year 2000 there were over 2,000,000.
- An irrevocable change in the balance between public and private funding: in the 1960s universities in the UK were almost entirely publicly funded, now direct public subventions account for on average around two thirds of total income.
- Changes in the mechanisms for disbursing public funds, both to providers and consumers: for the former there has been a shift away from block grants to fund teaching and research, to earmarked funding which is partly formulaic, partly performance based; for students there has been a shift from income support transfers to student loans.
- Despite a trend decline in public funding, a dramatic increase in regulation and compliance requirements, with formal performance appraisal of teaching and research now well embedded; in the case of the former, with periodic ‘Subject Reviews’ and in the latter quinquennial ‘Research Assessment Exercises’.

The potential for such major systemic changes to impact on performance was recognised by the creation in the mid 1990s of the *National Committee of Inquiry into*

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*Higher Education*, chaired by Lord Dearing. This was intended as a root and branch review of funding, quality control, regulation and governance. The *Dearing Report*, published in 1997, made 93 recommendations to government, the majority of which related to training and staff development, quality assurance arrangements, the challenges of new information and communications technologies, institutional management and governance. Several key recommendations focused directly on funding however. For example: R71 recommended against the continued imposition of efficiency gains<sup>1</sup> (which in the years immediately prior to Dearing had been running at 3% per annum); R79 recommended that ‘..... graduates in work make a flat rate contribution of around 25 per cent of the average cost of higher education, through an income contingent mechanism.....’; R82 suggests that collections of loans or graduate contributions should be made through the income tax collection agency, the Inland Revenue; R80 urges a review of public sector accounting practices to ensure that repayable loans are not treated in the public accounts in the same way as grants; and R75 recommends an increase in infrastructure funding.

The *Dearing Report* has had an impact on higher education (HE) funding. Efficiency gains since its publication have generally been 1% rather than 3%; students have had to make a contribution to tuition costs in the form of an annual, means tested fee, undifferentiated by subject or university, initially set at £1,000 per annum and indexed to inflation;<sup>2</sup> loans are now collected through the income tax system by the Inland Revenue, on an income contingent rather than mortgage basis; and a so-called ‘Joint Infrastructure Fund’ was created to inject around £1.5 billion (of public monies and charitable income) into new buildings, laboratories and equipment. Notwithstanding this, the underlying trends in public funding have altered little since the publication of the *Dearing Report* in 1997, neither in the quantum (since public funding per student continues to decline), nor in the delivery (since fees do not accrue directly to universities as additional income).

Thus, although one outcome of the *Dearing Report* was (in British terms) radical – the introduction for the first time of a contribution to tuition fees – overall funding consequences were modest. As we will see later, a succession of studies and Reports since then have argued that a funding problem remains and HE providers have limited degrees of freedom in ameliorating this, since they have no scope to vary fees (at least in an upward direction) for British and European Union (EU) students, (though they have complete discretion over the fees they charge students from outside the EU).<sup>3</sup> In this paper we argue that greater flexibility in setting fees is a necessary development if additional resources are to be drawn into HE in the UK, alongside a greater availability of loan finance, repayable on an income contingent basis.

<sup>1</sup> Efficiency gains are cost improvements that are assumed to take place and counted as a credit in new funding allocations. Thus, a 5% (nominal) increase in funding might be made up of 2% new resources and 3% cost savings that the institution was expected to realise.

<sup>2</sup> The current means tested fee now stands at a maximum of £1,100.

<sup>3</sup> European Union regulations stipulate that students originating from other parts of the Union but registered at UK universities are subject to exactly the same fee arrangements as British students. At the time of writing, median fee levels for non-EU students ranged from £6,800 for classroom based subjects to £ 17,000 for clinical subjects.

We begin by reviewing broad trends in HE funding in the UK and evaluate this relative to elsewhere in the OECD. The evidence confirms both a secular decline in public funding in the UK and that it is low relative to other industrialised countries. But, of course, this is only an issue if declining funding can be associated with deterioration in performance, which we address in Section 2. Any argument that beneficiaries should make a greater contribution to tuition costs relies on a demonstration that they would be better off than otherwise as a result of having been to university. There is extensive evidence on this topic which we review briefly in Section 3. Section 4 then sets out the economic case for greater flexibility over ‘setting price’ against some alternative mechanisms for generating resources. Finally, Section 5 concludes.

**1. Higher Education Funding in the UK and OECD**

Figure 1 reports the long run trends in full-time UK students in HE and public funding per student, over the period 1980/1–1999/00. There is a striking symmetry between the two. Full-time numbers doubled as successive governments made increasing participation in HE a priority, on the grounds that participation rates in the UK were relatively low by international standards. Judged in terms of aggregate numbers, the policy has plainly been successful. In 1980 just 13% of young people were in full time higher education, by 1999 it was 34%<sup>4</sup> and the current government has set a target of 50% participation by 2010. The gender mix has changed as participation has increased (from approximately one third/two

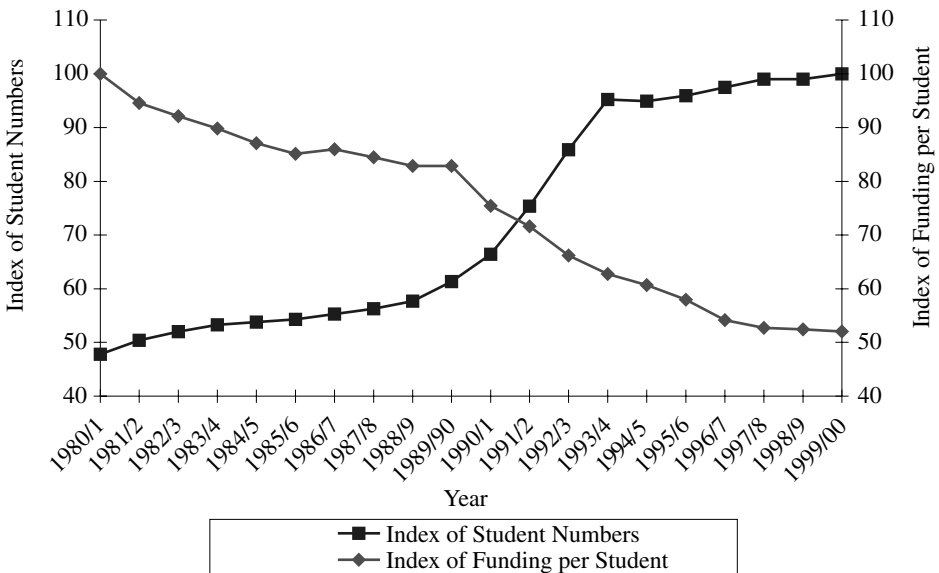


Fig. 1. *Index of Student Numbers and Public Funding for Higher Education, 1980/1–1999/2000*  
 Source: Department for Education and Skills

<sup>4</sup> The age participation index is the number of young (<21) home initial entrants expressed as a percentage of the averaged 18–9 year old population.

thirds in favour of males, to 55:45% in favour of females). As is clear from Figure 1, at the same time as student numbers have doubled, public funding per student has halved. Tertiary education expenditure per student is not only low relative to the past but also below the OECD average: about 69% of the average in fact (OECD, 2001*b*).<sup>5</sup> In terms of overall (public and private) expenditure, as Figure 2 shows, the UK has one of the lowest levels of tertiary education expenditure as a percentage of GDP among the OECD economies.

## 2. Consequences of Declining Funding

Declining public funding is of course only a problem if it can be associated with deteriorating performance. It could, for instance, have been offset by increased funding from non-public sources and/or increased productivity. With regard to the former, private funding has increased, currently contributing just over a third on average of the income of higher education institutions. However, as Figure 2 demonstrates, expenditure as a share of GDP is still at the bottom end of the OECD distribution. Productivity has also increased – Travers *et al.* (1996) estimate that labour productivity in HE has grown by 6% per annum in the 1990s as compared to 2% in the services sector overall. Moreover, as we have seen, overall participation rates have increased and, in terms of completion, the UK has the second highest rate in the OECD. This could clearly be regarded as evidence of ‘success’. However, trends in at least four indicators point to causes for concern over the performance of the sector:

*Student: Staff Ratios:* The decline in funding per student has inevitably resulted in increased class sizes. The average student: staff ratio across the sector in 1980 was

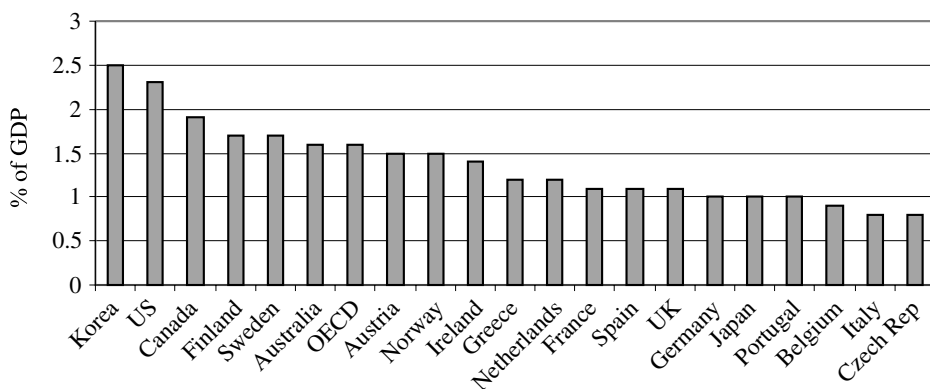


Fig. 2. *Educational Expenditure as a Percentage of GDP in the OECD, 1998*  
Source: OECD (2001*a*)

<sup>5</sup> Tertiary education is defined by the International Standard Classification for Education (ISCED). It comprises two categories ISCED 5 and ISCED 6, the former divisible between ISCED 5A and ISCED 5B. In the UK ISCED 5A refers to Bachelor's degrees, Postgraduate Diplomas and Certificates, Master's Degrees and professional graduate on-the-job training; ISCED 5B incorporates NVQs, HNCs and HNDs; ISCED 6 includes PhDs and other doctorates.

9:1; by 1990 this had increased to 13:1 and by 1999 to 17:1 (23:1 if funding for research which is included in the average unit of funding is excluded<sup>6</sup>). In effect, average class sizes in universities have doubled in the last 20 years. Not only has this led to ever larger lecture classes but also to the disappearance of small group tutorials in many universities. Taken together with recruitment and retention problems, deteriorating SSRs have the potential to degrade the learning experience and threaten the quality of education.

*Remuneration, Recruitment and Retention:* Recruitment is clearly fashioned by remuneration. According to estimates from the Association of University Teachers,<sup>7</sup> there has been virtually no increase in the real earnings of university lecturers over the last 20 years, despite a significant rise in productivity. But of course it is relative remuneration that matters for recruitment and retention. Data from the *New Earnings Survey* confirms that average earnings of pre-1992 university academics have increased since 1981 by only 70% of the average for non-manual employees throughout the economy (Greenaway and Haynes, 2000). Nickell and Quintini (2002) report that the mean percentile position of male university teachers in the overall pay structure declined by 8 percentage points between 1975 and 1999. As part of its work, the *Independent Review of Higher Education Pay and Conditions* (IRHEPC, 1999) compared current pay levels for the full range of higher education staff with those for jobs of equivalent sizes in other sectors. Their conclusion was that higher education salaries do not compete favourably and, for most grades in most staff groups, salaries are below wider market medians. Nor do salaries in UK Universities compete internationally, especially with those in the US. Clery and Lee (2002) report the average starting salary across all disciplines for an Assistant Professor in the US in 1999 as £30,000; in the UK the equivalent was less than £20,000.

But, have these patterns in relative remuneration impacted on recruitment/retention and/or the quality of those recruited? After all, it may reflect the adjustment of compensating variations towards their equilibrium levels. The evidence suggests otherwise. Nickell and Quintini (2002) report that the average quality of recruits into public sector jobs in general has declined as a result of declining relative remuneration. Evidence submitted to the IRHEPC also highlighted concerns about poorer quality candidates for available posts and the long term implications for the competitiveness of leading UK universities. In addition, recruitment and retention appear to be increasingly problematic. In a recent survey of British universities, 20% of institutions reported they experienced difficulties 'most of the time', a three-fold increase above three years earlier (IRS, 2001). Such problems are especially acute in certain locations and certain subject areas, for example, information technology, a number of branches of engineering, a range of clinical specialities, business, economics and law; see CVCP (2000), Machin and Oswald (2000).

<sup>6</sup> Universities UK (2001).

<sup>7</sup> The Association of University Teachers is the trade union representing academic staff in UK universities.

*Research Capacity:* Although the literature on the determinants of growth is far from conclusive, most analysts identify research and development as an important driver. A number of recent studies suggest that both the quantity and quality of university research has improved in many areas since the mid-1980s, and in most areas the UK is ranked either second (to the US) or first in bibliographic analysis of publications outputs.<sup>8</sup> Sustaining this means (in addition to recruiting and retaining high quality staff) providing appropriate infrastructure. The *Dearing Report* recognised the latter with the creation of the Joint Infrastructure Fund (JIF). However, several subsequent analyses continue to point to deficiencies. Pearson (2000) expresses concern at the decline in the R&D funding base and its consequences for future innovation; the Science Policy Research Unit (SPRU, 2000) concludes that investment levels are lagging internationally and estimate that annual R&D investment would need to increase by 67%, or £1.3 billion, to match per capita levels in the US;<sup>9</sup> and another report by Policy Research in Engineering, Science and Technology (PREST, 2000) suggests that at least £ 600 million per annum is needed to bring essential research facilities up to date.

*Social Exclusion:* Despite the dramatic increase in participation, the social mix in UK universities has barely altered over the last quarter of a century. As Figure 3 shows, the share of students from low income backgrounds remained more or less unchanged from 1980 to 2001. Thus, despite higher education being free at the point of consumption over this period (and indeed since World War II), students from low income backgrounds remained largely excluded from higher education,

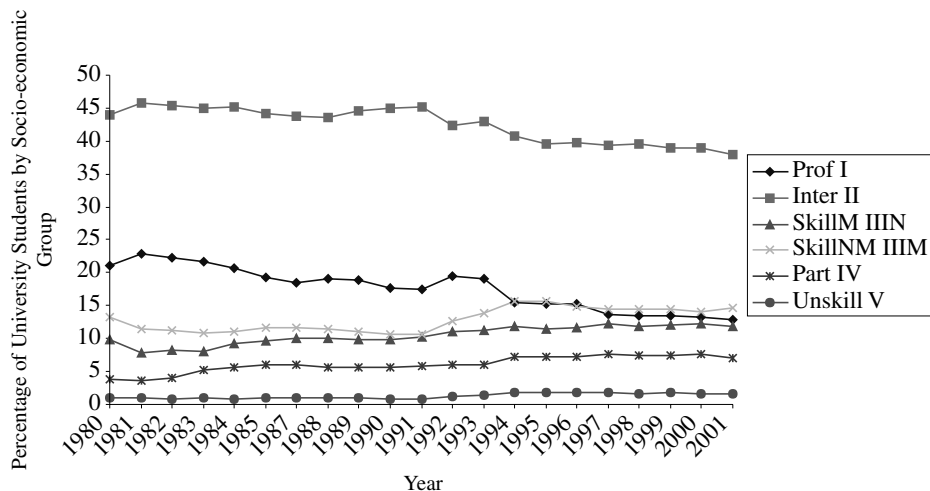


Fig. 3. *Socio-Economic Participation: Universities, 1980–2001*  
 Source: UCCA Statistical Supplement; UCAS

<sup>8</sup> See for example, Adams (1998).

<sup>9</sup> The European Parliament stated that all EU states should aim to spend at least 3% of their GDP on research. The UK currently spends 1.87%.

suggesting that widening access has much more to do with factors shaping differential secondary school performance, than university admissions procedures.

In conclusion, in terms of changes in overall participation, UK higher education might be judged to have performed well over the past 20 years. Participation rates are now high relative to the past and relative to other OECD economies. Moreover, the system is efficient in transforming a high proportion of entrants into graduates, diplomates and certificate holders in a short space of time. But this is an extremely narrow indicator of performance. Public funding per student has declined by 50% in real terms over the past 20 years, which has resulted in a significant increase in student: staff ratios, a decline in the relative rewards of academic staff and a decline in the research and teaching infrastructure. Expansion in participation has been largely a political imperative and has made little difference to the social mix of entrants to university. Changing the latter will require significant additional investment. So too will improving infrastructure and relative rewards. In Section 4 we will evaluate mechanisms for generating additional resource from the beneficiaries of HE. But first we address the issue of who benefits and by how much.

### 3. Who Benefits from HE and by How Much?

The simplest measure of the private benefits to tertiary education are higher salaries graduates receive compared with non-graduates<sup>10</sup> and it is straightforward to estimate the additional income earned by a graduate (over a non-graduate with two 'A' levels) over a working life. Using the age-earnings profiles in Dutta *et al.* (1999), Greenaway and Haynes (2000) report an average of the earnings premium as £410,000. Using Careers Services Unit data and a different methodology, Skidelsky (2000) arrives at an almost identical estimate of £400,000.<sup>11</sup> Finally, using Labour Force Survey data and a slightly different methodology again, the UK's Department for Education and Skills also calculate the lifetime earnings differential as £400,000.<sup>12</sup> These are useful summary statistics, but the more usual means of summarising the returns to HE is via rate of return analysis.

*Private Rates of Return to Higher Education:*<sup>13</sup> Steel and Sausman (1997) estimate that, averaged across all graduates, the rate of return to a first degree is 17%, based

<sup>10</sup> Although not all of the differences in pay between graduates and non-graduates may be caused by differences in education. This will be discussed later.

<sup>11</sup> As he pointed out in the recent House of Lords debate, to realise a comparable return one would have to invest £100,000 in government bonds.

<sup>12</sup> In addition to higher pay, graduates benefit from higher labour force participation and lower unemployment rates and are less likely to be among the long-term unemployed; see Blondal *et al.* (2002).

<sup>13</sup> To calculate the private rate of return to higher education, we compare costs, measured as earnings foregone plus any education related expenses the student has to pay, with private benefits. These are the increase in the expected income of a graduate over and above a non-graduate over the individual's working life. The private rate of return is the discount rate that equates these two streams. There is a significant literature both on the technical aspects of calculation and rate of return estimates themselves. We will not focus on the former beyond discussing how much of the return can reliably be ascribed to higher education. Instead we focus on recent estimates, which is most relevant for future policy. A comprehensive review of rate of return estimates for both developed and developing countries can be found in Psacharopoulos (1994) and the chapters in Asplund and Pereira (1999).

on data from the late 1980s. As with evidence from other sources, the returns are higher for women than men. They also report higher rates of return for 'traditional' compared with mature entrants; again not surprising given the longer working life of the former.<sup>14</sup> Dutta *et al.* (1999) calculate rates of return benchmarked to the 1995 *New Earnings Survey*. Their starting point is the earnings profiles for average male graduates compared with the profiles of A level non-graduates. The former are assumed to start work at 18, the latter at 21. The authors make appropriate assumptions regarding loans taken out whilst a student, fees paid, maintenance expenses and any income earned whilst a student. Their analysis pertains to three categories of graduates, with rates of return of up to 17% estimated. Moreover, evidence reported in Blondal *et al.* (2002) and summarised in Table 1, suggests that private rates of return in the UK are the highest in the OECD.

A different approach is followed by Blundell *et al.* (2000) who use data from the NCDS on a cohort of individuals born in 1958. They compare men and women with higher education qualifications with others in the same cohort with at least one A level and combine this with data from the *Labour Force Survey* (LFS) to estimate a range of wage equations. The calculations point to returns to men above those with at least one A level of around 15% for a non-degree higher education qualification, 21% for a first degree and 15% for a higher degree. For women, the returns are even higher, 26% for non-degree qualifications and 39% and 43% for first and higher degrees respectively.<sup>15</sup>

Dearden *et al.* (2000) use data from the NCDS, the LFS and the International Adult Literacy Survey. The male return is calculated to be an additional 10–28%,

Table 1  
*Private Internal Rates of Return to Tertiary Education in the OECD*

	Men	Women
Canada	8.7	9.9
Denmark	11.5	11.1
France	14.3	15.4
Germany	9.1	8.4
Italy	6.5	8.4
Japan	7.9	7.2
Netherlands	12.1	12.5
Sweden	11.4	10.8
United Kingdom	18.5	16.1
United States	14.9	14.7
Unweighted Average	11.7	11.8

*Source:* taken from Blondal *et al.* (2002), Table 3.

<sup>14</sup> With respect to subject group, they report relatively low returns to Arts subjects, higher returns to Science and Engineering graduates and highest returns to Social Science graduates.

<sup>15</sup> This particular study also reports estimates by subject category, although given the relatively small samples, caution is expressed regarding robustness of the estimates. Having said that, the results are consistent with those reported by other work. Thus for men the highest returns are for Accountancy, Economics, Law and Maths/Physics and the lowest for Biology, Chemistry, Environmental Sciences and Geography. For women the highest returns are in Education, Economics, Accountancy and Law and 'other Social Sciences' and the lowest in Chemistry and Biology.



whereas female graduates are estimated to earn an additional 21–36% after controlling for some aspects of background and personal characteristics.<sup>16</sup>

*Social and Cultural Benefits:* There is a widespread presumption that higher education generates non-pecuniary spillovers. For example, graduates tend to be more active agents of national and international tolerance and social inclusion; more active citizens in participating in voluntary organisations; and may give more to the democratic process. Bynner and Egerton's (2000) findings point to a clear link between higher education and participation in community affairs, democratic processes, egalitarian attitudes, parenting and voluntary work. Moreover, they report that these links hold even after one adjusts for other potential causal factors such as family background. Such social and cultural benefits are fundamentally important and no doubt promote social cohesion. Insofar as they do, they will have knock-on effects to direct economic benefits, for example reduced public expenditure on criminal justice and social security. Some attempts have been made to quantify these effects. For example, Lochner and Moretti (2001) calculate the social savings from crime reduction associated with high school completion. Their estimates suggest that a 1% reduction in male high school drop out rates would save as much as \$1.4 billion or about \$2,100 per additional male high school graduate. Kenkel (1991) estimates the effects of health knowledge and schooling on health behaviour. The positive effects of schooling on good health remain after differences in health knowledge are controlled for. McMahon (2000) estimates that the average US college graduate gains a lifetime equivalent of \$488,000 in health related benefits above those with only a high school diploma. (A comprehensive review of the wider benefits of education can be found in Carr-Hill (2001) and OECD (2001*a*).)

*Social Rates of Return to Higher Education:* These are typically calculated in a similar way to private rates but with the addition of costs and benefits borne by the rest of society (particularly the taxpayer). The social rate of return is the discount rate that equates social costs (measured as the value of output foregone, plus teaching costs) to social benefits (measured as higher earnings and higher tax revenues after graduation). Steel and Sausman (1997) calculate the return to a first degree of 11%, averaged across all graduates (based on data over the period 1989–95). As with private rates, they report higher returns for females than males and lower returns for individuals who re-enter education later in life.<sup>17</sup> Dutta *et al.*

<sup>16</sup> An intrinsic difficulty of all work on returns to higher education, which must of course be acknowledged, is separating its contribution from other factors such as innate ability, family background and so on. Steel and Sausman (1997) applied an *ad hoc* adjustment for this of 20 and 40%, the higher of which reduces the average rate of return to 11%. Blundell *et al.* (2000) include indicators of individual attributes and circumstances. When controls for ability tests at age 7, region, school type, family background and demography are included, the return to a first degree for men declines from 21 to 17% and that for women from 39 to 37%. The only control variables that make a significant difference for men are ability tests at age 16 and A level scores. Their inclusion reduces the return from 17 to 12%, though for women the decline is only from 37 to 33%.

<sup>17</sup> With respect to subject group, they report highest returns to Social Sciences graduates, lower returns for Science and Engineering and the lowest for Arts subjects.

(1999) calculate social rates in the UK benchmarked to the 1995 *New Earnings Survey* by comparing the earnings profiles gross of tax for average male graduates and A level non-graduates. They estimate the social rate of return for three categories of degree, with returns up to 11%. Layard *et al.* (2002) estimate social rates of return to vocational and academic qualifications using the *Labour Force Surveys* of 1997 and 1998 and report a slightly lower social rate of return of 9% to a first degree.<sup>18</sup>

All of these exclude external effects or spillovers to human and physical capital, which are undoubtedly positive but difficult to measure. Recent attempts to do so include Moretti (1998) and Acemoglu and Angrist (1999) who try to estimate social returns via spillovers. Moretti (1998) calculates that the external effect of a 1% increase in the labour force share of college educated in US cities increases the wages of all workers from between 1.1% and 2.2%, with the largest effect on less-educated workers. Acemoglu and Angrist (1999) develop a framework for estimating social returns by investigating the effect of US state average schooling levels on individual wages, while controlling for the effect of individual schooling. They calculate small social returns of typically less than 1%.

*Education and Growth:* There is a considerable amount of cross-country evidence internationally which points to a positive association between investment in education and growth; see, for example, Barro and Sala-i-Martin (1995); Barro (1998) and Bassanini and Scarpenta (2001). Moreover, higher education seems to be the most relevant education variable in more developed countries. Key findings are: first, countries with higher average years of education tend on average to grow faster; second, OECD countries which expanded their higher education sector more rapidly from the 1960s experienced faster growth; third, education is more important via its productivity effects rather than directly as a factor input; fourth, there is some evidence that education positively affects physical investment in the economy which in turn further increases growth rates. Conservative estimates suggest that the wider effects of education on economic growth could add at least 2% to the typical social rates of return presented in the previous section. However, the estimates from the literature are subject to wide margins of uncertainty and there is also a potential problem of reverse causality (Gemell, 1997).

The fact that social returns are relatively high and externalities present, underpins the case for continued taxpayer investment in higher education. However, the excess of private over social returns in the UK confirms that most benefits from higher education continue to be captured by individuals. Moreover, given the socio-economic mix of students in universities, it also means that the subsidies being transferred are regressive. Both justify a shift towards a more equitable financial partnership with a greater financial commitment coming from beneficiaries.

<sup>18</sup> Evidence in OECD (1998) suggests that social rates of return in the OECD countries are around 10%. In countries where students make a contribution to costs (such as Australia, Canada and the US), the rates exceed this.

#### 4. Alternative Funding Options

How can universities secure additional recurrent funding? This is a question behind a number of recent reports on HE.<sup>19</sup> We do not cover the full spectrum of options but confine ourselves to a narrow range of possibilities that have figured prominently in recent discussions.

One obvious option is to fund higher education entirely from public expenditure. However, given the record on public funding over the last two decades, it is unlikely that significant additional resources can realistically be expected. In addition, it could be argued that even if it *could* happen, it *should not* happen because, on average, public funding redistributes resources from low income taxpayers to (future) high income taxpayers and is therefore regressive. At the other extreme one could privatise the whole HE sector. Without a complete overhaul of student support arrangements this too is unlikely to deliver an equitable solution. The social and private benefits to HE discussed in Section 3 support the case for a continued mix of private and public funding but with a shift to the latter. We focus on three possibilities, all of which are consistent with evolution of the present system: introduction of a graduate tax; vouchers; and deregulation of fees. If the last were progressed it would need to be accompanied by an extension of income contingent loans, the principles of which we also discuss.

*Graduate Tax:* By definition a graduate tax is a supplement which applies only to graduates rather than a levy on all taxpayers. Thus, additional funding could be secured from the primary beneficiaries of HE, which is an obvious attraction. Moreover, because the revenue is generated from future earnings, payment is deferred and HE continues to be free at the point of consumption. In principle the collection mechanism is straightforward and administration costs could be very low, which is another attraction.<sup>20</sup>

Although it would be relatively straightforward to introduce a graduate tax, there are cogent arguments against it. One problem is that it is unlikely to deliver significant additional resources rapidly. Every 1% graduate tax, with a participation rate of 40%, could yield close to £4billion but it would take 43 years to reach steady state (CVCP, 1993). Second, it is not conducive to a more flexible and competitive system and in itself is unlikely to do anything about social exclusion, (though it would not, of course, be any worse than the current system on this front). A third unattractive feature is that the amount graduates pay is invariant to differences in costs between degrees. Fourth, from a purely national perspective, EU nationals who pay the same (heavily subsidised) fee as British students are outwith the jurisdiction of the Inland Revenue if they return home after graduation and potential leakage is considerable. Finally, and most crucially, in the UK there is no reliance on hypothecated taxes. If a graduate tax is

<sup>19</sup> See, for example, Greenaway and Haynes (2000), Universities UK (2001), Education and Skills Committee (2002).

<sup>20</sup> For a more detailed discussion of the graduate tax see, for example, Glennerster *et al.* (1968), Glennerster (1997) and Barr (1989).

not hypothecated then collections become part of Government's general revenue and any expansion in resources again becomes subject to a political process. There is no reason to suppose that the existence of a graduate tax would make higher education a higher priority in the competition for taxpayers' funds. It is perhaps not surprising that there is no fully fledged graduate tax in operation in the OECD.<sup>21</sup>

*Vouchers:* The potential for using vouchers, or learning entitlements has been debated for a long time, though largely in the context of primary and secondary rather than tertiary education.<sup>22</sup> The basic idea is straightforward: those who have satisfied the entry requirements receive a voucher to a given value to use at a university of their choice. Its value could be geared to the cost of the course; could be geared to the student's family circumstances; could vary with the type of course, for example to stimulate participation in shortage subjects. Arguably arrangements in the UK up until the early 1990s were effectively operating like a voucher system but without explicit differentiation in the voucher's value, or the opportunity to 'shop around'.

Vouchers are therefore potentially a flexible instrument for distributing public monies but in themselves do not alter the overall level of funding going to higher education, only the way it is distributed. In effect, one is disbursing public funds via the individual rather than via institutions. Students would be empowered to a greater extent than at present and universities would have to compete more directly to attract students. Moreover, it also offers the potential for targeting public funds more effectively than now with, for example, the value of a voucher varying on a means tested basis. However, the focus of our analysis is on options which would actually enhance funding. The only way vouchers could bring in additional resources is if students were able to top up their value, which they would need to do were vouchers / learning entitlements used as a device for distributing public subventions to students in an environment where universities were permitted to set differential fees,

*Differential Fees:* As noted earlier, since 1997 students in the UK have been obliged to make a contribution towards tuition. This was initially set at £1,000 and now stands at £1,100. This contribution is means tested. Thus, in 2000, 42% of students at UK universities did not make any contribution, 19% a partial contribution and 39% made the full contribution (Education and Skills Committee, 2002). Although universities are the collection agency, the fees count in lieu of public funding and do not constitute additional income. Nor are universities permitted to differentiate fees between each other or across subjects.

The case for giving universities greater freedom in setting tuition fees and actually retaining fee income rests upon several arguments. First, the evidence on

<sup>21</sup> The Australian HECS arrangements are often referred to as a graduate tax: they are not. Although repayments are made through the income tax system, this is simply to minimise collection costs. Graduates repay what they borrowed on an income-contingent basis. See Chapman (1997).

<sup>22</sup> See, for example, Friedman (1962), Peacock and Wiseman (1965), West (1965).

earnings profiles and rates of return reported above suggests that students should make a greater contribution than at present. Second, different universities have different cost structures, fashioned by, for example, subject mix; the balance of activities between teaching, research and technology transfer; whether their focus is regional or international; and their wage structures. Moreover the variation in costs is much greater than 40 years ago because there are more – and more different – universities, and the range of subjects is greater. Third, the present arrangements mean that the contribution students make is unrelated to the costs of teaching, the quality of infrastructure or the expected rate of return on their degree. Finally, they lead to greater market discipline and less need for costly regulation.

The potential yield from differential fees depends upon their level and the impact of higher fees on demand. Calculations in Greenaway and Haynes (2000) suggest that even if universities operated under a regime with flexibility up to a maximum fee which could be levied, increasing the maximum to £2,000 could generate up to an additional £1billion of recurrent income, whilst a maximum of £4,000 would generate over £3billion. To put a fee of £4,000 in perspective, the median fee which British universities charge non-EU students is almost £7,000 for classroom based subjects, almost £9,000 for laboratory based subjects and over £17,000 for clinical subjects.

*Income Contingent Loans:* Thus the potential yield from differential fees is considerable. But what about their impact on demand, especially from entrants from low income backgrounds? In fact, the most widely cited argument against differential fees is that they would impact adversely on access. It can be argued, however, that if combined with better funded scholarships and a well thought out income contingent loan scheme, they would be at worst neutral and could even have a positive impact.

Take, first of all, the role of loans. In a series of articles, Barr (1997) and Barr and Crawford (1998) set out the ingredients of, and mechanics for, a loan scheme which could generate additional resource, improve access and avoid the revenue leakages identified by Albrecht and Ziderman (1993). Their scheme is designed with three purposes in mind: for those who wish to avoid up-front payments, they ensure that education can remain free at the point of consumption; all loans should be fully income contingent, rather than mortgage based; and, to the maximum extent possible, should derive from non-public sources. The first two ensure that the scheme helps access since up-front charges are avoided and repayments are a smaller proportion of start-up income; the latter that additional non-taxpayer funds are drawn into the system.

For students enrolling at British universities after 1998 income contingency applies and students become liable for repayment of maintenance loans once their gross income exceeds £10,000 per annum. Beyond this, graduates pay 9% of their marginal income, collected by the Inland Revenue and passed on to the Student Loans Company (SLC). This is a collection route which is secure, minimises the

potential for debt default<sup>23</sup> and clearly makes for a cost effective collection process.<sup>24</sup> Since the scheme is income contingent, graduates begin to make repayments at relatively low levels of income and, unlike a graduate tax only repay what has been borrowed, plus interest charges. However, several shortcomings remain by comparison with the Barr-Crawford scheme. First, as we have seen, it still fails to provide additional resources, nor does it bring in any additional non-taxpayer funds. Second, there continues to be an expensive interest subsidy to *all* students irrespective of need. So is it possible to get the benefits of income contingency and additional private funding?

There are ways of using the services of the Inland Revenue as a collection vehicle yet securitising debt by selling it to the private sector. This principle has already been accepted in the UK since two tranches of debt under the old mortgage scheme have been sold by the SLC.<sup>25</sup> Collection via the Inland Revenue makes the debt more attractive to the private sector, its attractiveness would be further enhanced if graduates paid a positive real interest rate on loans, broadly equal to the government's borrowing rate. Under present arrangements students pay an interest charge that adjusts only for RPI.<sup>26</sup> Since the real interest rate is around 3% per annum, this represents a significant subsidy from the taxpayer, which is indiscriminate rather than targeted.

If loans were securitised, the potential for an immediate and substantial injection of private funds is considerable. Annual SLC lending is now £1 billion. Barr and Falkingham (1993) calculate that the private sector would be willing to pay £800 million for this, i.e. face value less expected deferment and default. That is new private money which saves the taxpayer an equivalent sum annually. A scheme which covered income support plus differentiated tuition fees at the levels discussed above could have a face value of £2.6 to £5 billion per annum depending upon fee levels, with a market value of £2.1 to £4 billion annually. At the bottom end approximately three quarters would accrue as Treasury savings and one quarter as new resource to universities; at the top end around half would accrue to government and half to universities. Thus £2 billion could be available to government for more effectively targeted expenditure (e.g. in the form of needs based scholarships) and £2 billion to universities.

On equity and efficiency grounds, the case for income contingent loans covering fees as well as maintenance, collected through the Inland Revenue and fully securitised, is compelling. The only real barrier to implementation is the nuances

<sup>23</sup> Recent data from the SLC puts cumulative default in the UK at 9% of total loans. This is lower than some default rates reported in Albrecht and Ziderman (1993), for example Kenya (24%), Chile (21%) and the US (12%). It is also somewhat higher than many others, however; 4% in Australia, 1% in Finland, Sweden and Japan and zero in Norway.

<sup>24</sup> Administrative costs can be substantial. At the high end Albrecht and Ziderman (1993) put the losses to administration at 20% in Honduras, 15% in Norway and Barbados, 13% in Chile. This compares with just 6% in Finland and 5% in Australia.

<sup>25</sup> The first was £1 billion to Greenwich NatWest in 1998, the second £1.3 billion to Deutsche Bank/Nationwide in 1999. The exact details of the transactions have not been made public but it is believed that the debt was sold for around 50% of its face value. Estimates suggest that the missing 50% breaks down into about 15% because of low income, early death and so on and 35% due to the interest subsidy. As it happens, these costs are consistent with the estimates of Barr and Falkingham (1993).

<sup>26</sup> The RPI (Retail Price Index) is the main domestic measure of inflation in the UK.

of public sector accounting. If repayments are collected via the Inland Revenue, it can be argued that insufficient risk is transferred to the private sector when the loan book is securitised and therefore all lending to students has to count against the current public sector cash requirement. This could indeed be an impediment to bringing in additional private resources rapidly. Barr (1997), however, offers a range of practical solutions to this problem involving some combination of revising public sector accounting arrangements and/or further privatising the organisation and finance of student loans.

*Fees, Loans and Access:* The final issue we consider is access. As noted earlier, it has been argued that if differential fees increase the price of HE, one can expect demand to contract and this contraction will impact differentially on students from low income backgrounds. We have argued that increasing the availability of income contingent loans provides a partial solution to this problem by effectively ensuring that HE remains free at the point of consumption. (Scholarships and fee remission effectively do the same thing, though probably less efficiently.) Recent evidence from Australia confirms that the combination of fees and loans has not damaged access. In 1989 Australia became the first country to introduce fee contributions differentiated by subject group and repayable via an income contingent loan, under the Higher Education Contribution Scheme (HECS). Moreover, since then (in 1997) fee levels have been increased and repayment thresholds lowered. In a recent evaluation of experience with HECS, drawing upon a range of cohort studies, Chapman and Ryan (2002) conclude that participation in HE has continued to increase despite the introduction of HECS and that they have not resulted in a decrease in participation of students from low income families. Blondal *et al.* (2002) echo this and reach the same conclusion with regard to experience in New Zealand.

It should be noted, however, that reducing social exclusion in university participation requires policies that are much better targeted than 'free' tuition whilst at university. Were the latter all that was required, participation would be rather different to that reported in Figure 3 above, as tuition has been free for two generations in the UK. Powerful evidence on this point has recently been produced by Cameron and Heckman (2001). From a detailed analysis of educational attainment and college participation in the US they conclude that '..... the importance of short-term credit constraints is greatly exaggerated .....' and argue that policies targeted at long term improvements in family environment will be much more successful than short run policies aimed at tuition reduction.

## 5. Conclusions

Higher education provision in the UK has been subject to profound changes over the last 20 years. In terms of changes in overall participation, the outputs associated with these changes might be judged a success. However, over the same period, public funding has declined dramatically and this can be linked to a deterioration in 'performance' on a number of fronts: escalating student:staff ratios; declining relative remuneration; a deteriorating infrastructure; and a social make-up that

remains exclusive. A series of analyses suggest that additional investment is required, though estimates of the so-called 'funding gap' vary. For example, Universities UK (2001) put it at around £1 billion per annum for the sector as a whole, whilst Greenaway and Haynes (2000) suggest it may be around £3 billion. Whichever estimate one takes, it seems too large for the taxpayer to contemplate, given other demands on public funds.

Additional resource, to supplement that already invested by the taxpayer, must therefore be drawn in from non-government sources. Efficiency and equity considerations make a strong case for the beneficiaries of higher education making a greater contribution. Enhancing existing income contingent loan arrangements allows them to do so from the higher earnings they gain throughout their working life by virtue of having been to university. Differential fees allow individual universities to set fees which reflect their own cost structures, their ambitions regarding support for students from less well off families, their ambitions regarding staff recruitment and so on. They would also allow Government funding to be targeted more effectively to support potential entrants from lower income backgrounds where participation has been persistently low, despite 'free' education at the point of consumption.

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