Financing higher education: Comparing the options

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Contents

Executive summary

1. This paper analyses three options for financing higher education:

Tax funding, as proposed by the Liberal Democrats and, more recently, the Tories.
Tax funding plus upfront charges, as at present.
Tax funding plus deferred charges, as proposed in the White Paper on higher education (Department of Education and Skills, 2003).

2. The central argument is that a mixture of tax funding and deferred charges is the most effective way of improving national economic performance and promoting access. This is genuinely a policy that improves efficiency and equity simultaneously.

3. Section 1 argues that higher education, along with other important objectives, including the pursuit of knowledge for its own sake, has a central economic role:

To support growth, the higher education sector needs to be large enough, of high quality, and responsive to a rapidly-changing external environment.

To support distributional objectives and social inclusion, access to higher education needs to be broad. Access also supports the growth objective, since no country can afford to waste talent.

4. Sections 2, 3 and 4 discuss tax funding, upfront charges, and deferred charges, respectively. Key elements in the discussion include:

The results of a model which compares the White Paper proposals, which extend tuition charges but make them all deferred, with a recent Tory proposal to abolish all tuition fees. The key results are set out in paras 22-35, with detailed explanation in the Appendix. The main conclusion is that the Tory proposal runs a deficit of £1.6 billion over the first five years.

An explanation (see particularly paras 45-51) of why income-contingent loans transform the funding landscape in ways that are insufficiently undeJ-ves30 Tc00leh x

Financing higher education: Comparing the options[1]

Nicholas Barr[2]

1. This paper, a companion to my evidence to the Education and Skills Select Committee (Barr 2003), explores three options for financing higher education:

> *Tax funding* (section 2), as in the UK until 1998, and as advocated by the Liberal Democrats and, more recently, the Tories.
>
> *Tax funding plus upfront charges* (section 3), as in the USA, and currently in the UK.
>
> *Tax funding plus deferred charges* (section 4), as proposed in the recent White Paper (Department for Education and Skills 2003).

Section 1 establishes the case for the growth in quantity and improvement in quality of higher education. Section 5 pulls the conclusions together, and can be read on its own by reads7i

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Past, present and proposed UK funding arrangements

Until 1998 there were no tuition fees for UK students; their living expenses were covered by a mixture of a tax-funded grant, a loan with mortgage-type repayments, and parental contributions.

Since 1998 there has been an upfront fee (£1,125 in 2003-4), irrespective of subject or university; there is no loan to cover the fee; living expenses are met by a mixture of parental contributions and income-contingent loan, i.e. a loan with repayments calculated as per cent of the borrower's subsequent earnings, collected alongside income tax. Income-contingent loans protect access because the loan has built-in insurance against inability to repay, and thus have a profound effect that is insufficiently understood by politicians and the public. The topic is discussed in more detail in paras. 45-51, below.

The Government's proposals. A White Paper published last January (Department of Education and Skills 2003) proposes that:

from 2006 universities will be free to set fees between 0-£3,000;

the system of income-contingent loans will continue in its current form to cover living costs
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6. HUMAN CAPITAL: ALWAYS IMPORTANT, ARGUABLY MORE IMPORTANT THAN EVER. The argument that human capital is important is an old one. A new twist (Thurow 1996) argues that it is more important today than in the past. The simplest way to make the point starts from a conventional production function:

$$Q = f(K, L, M) \quad (1)$$

where output, Q, is related to inputs of capital, K, labour, L, and raw materials, M, via the production function f. Considering each of these in turn:

> In the nineteenth century, access to raw materials was critical. Almost all the largest US firms were involved with raw materials in one way or another. Today, value added comes from other sources: the material component of computers is a trivial part of their cost; the steel used in a modern car costs less than the electronics.
>
> Historically, countries with a larger capital stock were richer and so, through higher savings, could invest more than poorer countries, thus further increasing their capital stock. Again, the USA is a case in point. With today's worldwide capital markets, domestic investment is less constrained by domestic savings: investment by an entrepreneur in Thailand is not constrained by Thai domestic savings, since he can borrow elsewhere.
>
> Technology (i.e. the function, f) remains a critical determinant of relative economic performance. Historically, technology tended to be tied to specific countries. Today, not least because information flows are instant, technological advance moves across countries much more quickly.

7. Thus f, K, and M are less important explanations of differential economic performance today than in the past. The remaining variable, L, thus assumes increasing importance. In short, a combination of technological advance and international competitive pressures makes education a more important source of economic performance than ever.

8. THE NATURE OF TECHNOLOGICAL ADVANCE. A connected set of arguments for the greater importance of education and training concerns technological change. First, though it can reduce the need for skills—for example, computers have become more user-friendly—most of the impact is to increase the demand for skilled workers; and the overall decline in the demand for unskilled labour has been sharp. Secondly, change is increasingly rapid; knowledge has a shorter half life, so that people need flexible skills that can adapt to

10. EMPIRICAL EVIDENCE. Wolf's (2002) analysis rightly cautions against complacently taking it for granted that higher education spending necessarily translates into faster growth, the most blatant example being the latter days of communism. Clearly the quality and relevance of education is central: the level of spending is relevant, but so is the responsiveness of the system to the needs of students, employers and other stakeholders. Notwithstanding acute measurement problems facing all studies of growth, recent OECD analysis uses panel data for the advanced industrial countries to assess the influence on growth rates of a series of variables, and concludes that 'The improvement in human capital has been one of the key factors behind the growth process of the past decades in all OECD countries …' (Bassanini and Scarpetta 2001, p. 39). At a minimum, such findings suggest that underinvesting is a highly risky strategy.

11. Thus the case for increasing the quantity a0.0002 1.

16. At first sight it is paradoxical that tax funding harms access. The reason is that with a mass system funding is constrained and so (a) the substantial resources needed to promote access are crowded out by other elements in the higher education budget, and (b) if places are scarce, middle-class students will tend to crowd out those from poorer backgrounds. The root of the problem is that people can choose whether or not to apply to university, and there is a steep socioeconomic gradient in

2.2 Liberal Democrat and Tory proposals

21. The Liberal Democrats have a series of well-developed proposals for tertiary education broadly, with particular emphasis on the links between further and higher education. And in Scotland, as part of the governing coalition, they have been associated with the introduction of deferred charges well ahead of such developments in England. The party in England, however, has a different policy on funding, having long argued (a) that in government they would give higher education sufficient priority to ensure it was properly funded, and (b) that doing so would promote access. On the first, the evidence – both from history and from other countries – is against them. On the second, the discussion above suggests that tax funding does not promote access; and the Liberal Democrats have not given a good answer to para. 18. Separately, as discussed in section 4, a combination of deferred charges used, inter alia, to finance generous grants would be significantly more progressive.

22. Recently, the Tories announced a proposal to abolish *all* tuition fees. The proposal claims that the policy can be implemented on a revenue-neutral basis by keeping the system at broadly its current size of 43 per cent of the age group, rather than pursuing the government's target of 50 per cent participation by 2010. The proposals raise two sets of questions: do the numbers stand up; and is this the right policy direction?

23. DO THE NUMBERS STAND UP? The Appendix explains the model underlying the figures in Table 1, which suggest – even when showing the proposal in its best light – that it runs a significant cumulative deficit. The table is based on 2003-4 data on student numbers in England (the White Paper refers only to students in England), on average teaching costs per student, on the public expenditure costs of student loans, and on money earmarked in the White Paper to promote access. The table estimates that the government's plans to expand participation from 43 per cent to 50 per cent will bring in about 182,000 additional students by 2010. It also estimates costs per student (teaching and student support, including the costs of larger loans to cover fees), and fee income under the White Paper proposals.

24. The Appendix discusses the underlying assumptions. The the central ones are that:

50 per cent of lending to students counts as public spending.

35 per cent of students will face no additional charges under the White Paper proposals, 35 per cent will face half the maximum additional charge, and 30 per cent the full charge, all such charges being covered by an income-contingent loan.

The Tory proposal will exempt only new students from charges, thus phasing in the costs of the scheme.

The results, discussed below, include sensitivity analysis of these three key assumptions.

25. The model also makes some smaller assumptions, specifically that:

average real teaching costs remain unchanged over the period.
the take-up of new loans (to cover fees) is the same as for loans currently.
the growth in student numbers by 182,000 takes place on a linear trend.

26. Under the stated assumptions, the Tory proposals run a cumulative deficit (ignoring interest charges on increased government debt) over the 5-year period of £1.6 billion. For a given education budget, this means either or both of:

A reduction in university income over the period of £1.6 billion, with consequent effects on quality;

A reduction in university places such that over the 5 years 79,000 people would not get a place at university, about 150 for each of the 529 Parliamentary constituencies in England. The sensitivity analysis in the Appendix suggests that these conclusions are robust. Specifically, over quite wide variations in the key assumptions, the Tory proposals run a cumulative deficit of between £1 and £2 billion.

27. However, if the Tories were really to 'abolish fees' by exempting all students immediately (rather than phasing in the exemption by applying it only to new students), the deficit nearly doubles to £3.1 billion, at a cost of up to 153,000 university places.

28. INTERPRETING THE NUMBERS. Discussion so far has taken the numbers at face value. But it is necessary also to ask what is intended for the 182,000 students who do not go to university under the Tory proposals. Statements have been made about directing these people into vocational education. But that, too, costs money. If these costs are included in the analysis (as they should), the deficit is correspondingly larger.

29. Discussion thus far has also assumed that demographics are stable. In reality, the number of people of university age is set to rise. There are currently 2.432 million people aged 17-20 in England; by 2010-11 the figure will be 2.677 million. Just to keep participation constant, it is therefore necessary to increase student numbers in parallel, by about 112,500, i.e. by about 10 per cent. In sharpest contrast, if student numbers decline by a total of 79,000, the participation rate in 2010-11 will fall from its current rate of 43 per cent to between 36 and 38 per cent.[4]

30. THE RIGHT POLICY DIRECTION? The proposals thus face a series of problems.

31. *Declining student numbers*. Without significant increases in public spending, the proposals will not hold student numbers static but will require an absolute decline. As argued in section 1 this policy is exactly the wrong direction, in terms of national economic performance, and even more so given demographic trends.

32. *Continued erosion of quality*. There is general agreement that the quality of higher education has suffered as a result of many years of underfunding. The Tory proposals, at best, keep real funding per student constant, but produce no additional resources to improve quality. This creates two strategic problems in comparison with the White Paper.

Resource constraints. The evidence is overwhelming that quality cannot improve in a system that is largely funded from taxation. The system was in crisis in 1996 with fewer students than now (the origin of the Dearing Committee, which unanimously recommended the introduction of deferred charges); the reforms in Australia had the same genesis.

Lack of incentives to respond to student and employer demands. As discussed earlier, the quality of higher education is not only a matter of resources but also of the responsiveness of the system. The Tory proposals continue central planning; in contrast, the White Paper makes a start on introducing competition (for fuller discussion, see Barr, 2003, paras. 63-68).

33. *Adverse effects on access* arise in several ways:

Smaller university systems tend to have a more concentrated socioeconomic profile, not least because middle-class parents are better placed to help their children get good A levels.

One result is to dampen the aspirations of people from poorer backgrounds – a shortage of places could adversely affect the staying-on rate post-16.

The proposals explicitly withdraw resources to promote access. A serious pro-access strategy (see paras 55-58, below) needs significant resources. Given the fiscal pressures outlined in Table 1, these would not be forthcoming.

34. *Distributional impacts.*

The proposals exempt better-off people from

39. EQUITY PROBLEMS. Upfront charges are also inequitable. Better-off families can pay charges directly; and even a cash-strapped middle-class parent can borrow on good terms using the family home as security. Thus the options for borrowing are best for those who need them least.

40. Upfront charges for higher education create particular inequities, because of imperfect information and because of uncertainty, neither of which apply to anything like the same extent to buying a house.

> People for whom access is most fragile tend to be those who are the least well-informed about higher education – about whether they are good enough to do well, and about the benefits of getting a degree.
>
> In addition, there is a significant element of uncertainty about the returns to a degree.[5] As with other uncertainties, these have the greatest effect on people who do not have the financial resources to self-insure.

41. In sum, there is a very strong case in both efficiency and equity terms against a

45. WHAT TYPE OF LOAN? Conventional loans like a mortgage or bank overdraft have fixed monthly repayments of £*X*. With income-contingent loans, in contrast, repayments take the form of *x*% of earnings collected alongside income tax. The case for the latter type of loans, thankfully, is now widely accepted.[7] Conventional loans and student loans operate in very different circumstances. Home loans are normally made to people *after* they know their income and assets. Student loans, in contrast, are generally made *before* people know their income and assets; indeed, one of their major purposes is to increase them. Of necessity the latter situation is more uncertain than the former, hence the case for income-contingent arrangements.

46. Collecting repayments as a payroll deduction alongside income tax means that they match ability to pay. Repayments automatically and instantly track changes in earnings. Borrowers with low current earnings make low (or no) repayments; borrowers who do well repay in full, those with low lifetime earnings do not. Thus the loan has built-in insurance against inability to repay. The efficiency advantage is to reduce the uncertainty facing students.

47. There are also equity advantages: since repayments are automatically tailored to ability to pay, income-contingent loans make it easier for borrowers from poor backgrounds to participate. If loans cover all living costs and all tuition charges, studying is free at the point of use; and loan repayments, being instantly and exactly related to the person's subsequent income, are, from his point of view, little different from paying tax.

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48. OTHER WAYS OF THINKING ABOUT INCOME-CONTINGENT LOANS. Many people are worried about high-fees and high-debt. Much of that worry is because of the government's lamentable record in explaining income-contingent loans. The following are completely honest descriptions of the deferred charges proposed in the White Paper.

49. *Restoring universal grants.* As discussed above, if loans cover all costs, higher education is free at the point of use. The Student Loans Company squirts money into the

51. *Social insurance*. Yet another perspective is to think of student loans as a modern example of the Beveridge principle. With pensions, we pay national insurance contributions now in order to get our pension later. Pensions are thus another example of consumption smoothing, allowing people to redistribute from their younger to their older selves. Student loans are exactly that – students receive a 'pension' now to pay for their university education, repaid by their own contributions later in life.

4.2 The White Paper

52. My support for the White Paper strategy is set out in detail in Barr (2003).

53. THE FEES REGIME. The White Paper makes the quality and of higher education and its contribution to national economic performance central.

Tuition fees bring in additional resources to improve quality.

Variable fees give universities an independent source of income.

Variable fees also strengthen competition, shifting the balance of power from the central planner and producers to the consumers – the students and employers. The resulting competition benefits students, the university system, and the economy.

54. LOANS.

Since 1998 loans have had income-contingent repayments, the great advance of the post-Dearing arrangements

By extending loans to cover fees, the White Paper moves from upfront charges to deferred charges. Again, this is a fundamental change in the right direction, since students get their higher education free at the time they go to university.[9]

55. MEASURES TO PROMOTE ACCESS

57. *Information measures*.

> Action to inform school children and raise their aspirations is equally critical. The saddest impediment to access is someone who has never even thought of going to university. Action needs to start early, for example at age 12.
>
> Finally, problems of access to higher education cannot be solved entirely within the higher education sector. More resources are needed earlier in the system.[10]

58. *Helping low earners after they leave university*. A separate element is to help low earners after they leave university. Income-contingent loans are a major method of doing so. Other measures introduced in or foreshadowed by the White Paper include writing off a fraction of a person's loan for each year of service in the NHS or school system.[11]

59. The three elements of the strategy – tuition fees, income-contingent loans, and measures to promote access – hang together as a strategy.[12] The objectives are quality, largely for reasons of national economic performance, and access. A high-quality mass system cannot be wholly financed by taxation, as argued in section 2. Thus tax funding continues, but has to be supplemented by private finance. Tuition fees bring in private funding (via graduates' repayments), creating resources to improve quality and promote access. Income-contingent loans ensure that the charges are deferred; thus, at least so far as fees are concerned, higher education is free at the point of use. The measures to promote access, are intended to address exclusion directly, and are part of a wider strategy going back to early childhood.

4.3 Implications for funding

60. The Appendix assesses the costs of the White Paper proposals. The fiscal problem with the Tory proposal is that the costs come early and the savings later. In the case of the White Paper, the situation is the reverse: there is an immediate injection of resources from the fees paid on behalf of the current cohort of students, with the costs of expansion rising over time. Over the 5-year period as a whole, the White Paper proposals bring in about £1.6 billion to improve quality and promote access. These conclusions are robust across fairly wide variation of the assumptions underlying Table 1.

[10] There is growing evidence that the roots of exclusion lie in infancy; see Polly Toynbee, 'Help toddlers, and then let students pay their own way', *Guardian*, 22 January 2003.

[11] For more detailed discussion, see Barr, 2003, paras. 113-6.

[12] See Barr (2002*c*).

5 Conclusions

61. T

Nor do the proposals take account of the rising number of young people. If student numbers decline by a total of 79,000 the participation rate will fall from 43 per cent currently to between 36 and 38 per cent.

The proposals exempt better off people from a charge, and pays for the exemption in part by reducing transfers to poorer people. Not everyone will be comfortable with the distributional implications.

67. One of the main arguments in this paper is that the absence of private resources leads to quality problems and to access problems. The Tory proposals (referred to by Martin Wolf as Tory socialism[14]) illustrate the point entirely. The numbers in their proposal do not stand up. And the policy implications – fortress middle-England – hark back to an earlier era. In today's terms they put economic performance at risk and are also deeply regressive.

68. DEFERRED CHARGES. The principle underlying the White Paper is that those who can afford to pay more do so, releasing resources to improve quality and promote access. Economic theory is particularly useful to explain what is going on. The White Paper proposes two sets of actions (see Figure 1):

A price increase, raising the average tuition fee from p_0 to p_1. This leads to a movement *along* the demand curve from *a*

Appendix: The arithmetic of the Tory proposals and the White Paper

71. The White Paper proposes to:

introduce flexible fees, up to a cap of £3,000;
extend the system of income-contingent loans to cover all fees, i.e. a system of deferred charges;
increase student numbers to increase participation from 43 per cent to 50 per cent;
provide an additional £194 million to promote access.

72. The Tory proposal is to

abolish all tuition charges;
keep participation broadly at the current 43 per cent level;
save the £194 million spending on access measures.

The claim is that the savings from the latter two elements cover the lost income from tuition fees. Table 1, which is based on 2003-4 data, analyses this claim and compares the two sets of proposals.

73. The table is organised so that the assumptions all appear in column (1) and the data and conclusions in the subsequent columns. The top part of the table contains basic data on:

Student numbers in England (since the White Paper proposals apply only to England).
Average teaching costs per student.
The average cost of student loans.

74. THE COST OF STUDENT LOANS. If graduates paid an interest rate equal to the government's cost of borrowing and if all graduates repaid in full, the public spending costs of student loans would be zero. In reality there are two sources of loss: loans attract an interest subsidy;[16] and, with income-contingent repayments, graduates with low lifetime earnings do not repay in full. Thus only a fraction of loans is repaid. Expected non-repayment appears as current spending in the education budget, with expected repayments appearing as a financial asset in the capital account. In earlier sales of student debt, buyers

Paper proposals. Table 1 assumes that 35 per cent of students will face no charges above the current level of £1,125, 35 per cent will face half of the additional fee, and 30 per cent the entire additional fee. The model is constructed so that the assumption can be varied.

77. When calculating income from fees, the model also makes the cautious assumption that the average fee payment of the extra students (i.e. the 182,000 additional students who bring the participation rate up to 50 per cent) will be 30 per cent of the current tuition fee of

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Table 1: The White Paper and Tory proposals compared

Basic data	
Number of FTE students in HE (England), 2003-4 (000) [1]	1,115
Extra students to reach 50% APR (England) (000)	182
Average cost of teaching per student, £ [2]	4,800
Other spending on student support, £m [3]	194
The cost of student loans	
Average income-contingent loan per student, £ [4]	3,278
Fraction of student loans that count as public spending	0.50
Public expenditure cost of loan per student, £	1,639
Take up on new loans [a] [5]	0.81
Income from fees	
Current net income from fees, £m	450
Extra income from White Paper proposals	
Fees: no additional charge, % of students	35

Deficit, £m	209	420	630	334	38
Cumulative deficit, £m					***1,630***
Lost student years (000)					***253***

White Paper proposals	*Year 1*	*Year 2*	*Year 3*	*Year 4*	*Year 5*
Costs					

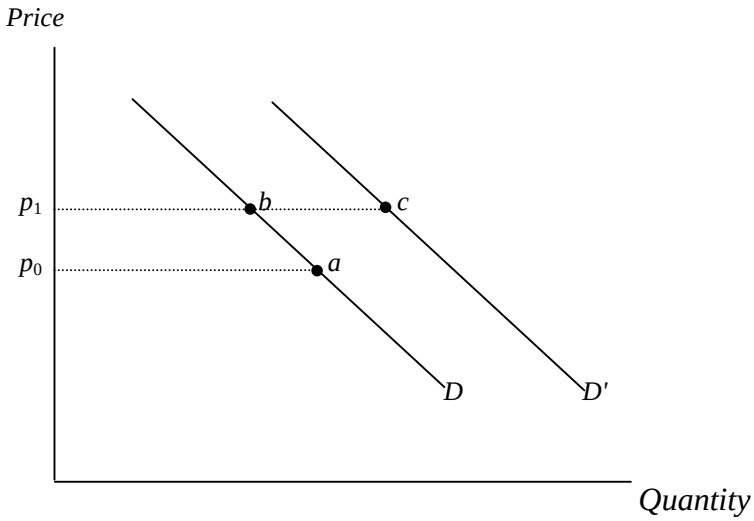

Figure 1: The White Paper's twofold strategy to promote access