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Higher Education Funding Policy: Who Wins and Who Loses?

A Comprehensive Guide to the Current Debate

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The Institute for Fiscal Studies

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Copy-edited by Judith Payne

Published by

Preface

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Executive summary

Why should the government intervene in the HE market?

1. Higher education (HE) is never free. The main political parties all aim to increase spending on HE per university student, but differ in how they would share the costs between students, graduates and taxpayers.

2. Credit market failures can prevent students from borrowing to finance a university education, even though it is likely to reward them with higher earnings later in life. This may justify government action to help them borrow, but does not in itself justify subsiding the cost of their education.

3. Subsidising higher education may be justified if the government also wants to encourage more people to enter HE than would wish to do so out of self-interest. It may believe that individuals are irrationally reluctant to borrow to finance an education that would benefit them, or that an individual's university education would have spillover benefits for the rest of society.

4. The government may in particular wish to intervene to encourage people from low-income backgrounds to enter higher education. They may find it harder to borrow, they may be more short-sighted or debt-averse, and they may be less aware of the potential benefits of university education, than people from wealthier backgrounds. Helping to overcome these barriers may reduce the persistence of relative low incomes from one generation to the next.

5. A sensible HE funding system would help students defer the costs of university until after graduation, as well as providing some insurance against unexpectedly low future earnings, for students who have taken out loans to fund their higher education. It would offer some subsidy to reflect spillover benefits, but would ensure that people who benefit from HE bear more of the cost than those who do not. It would offer students an adequate standard of living at university, irrespective of their family backgrounds. Furthermore, it would be simple, transparent and flexible in terms of its administration.

Proposed reforms to the HE system

1. Students who started studying in 2003–04 (the 'baseline') faced an upfront fee of up to £1,200 p.a., depending on family income. They were offered annual maintenance loans of between £3,225 and £4,305, means-tested on family income and repayable at a rate of 9% of the graduate's earnings above £10,000 each year, with the outstanding debt uprated in line with inflation (i.e. a zero real interest rate). No grants were available.

2. Labour's reforms would abolish upfront fees and introduce variable fees of up to £3,000 a year, payable after graduation and matched by a loan to cover fees on the

same terms as in 2003–04 (except any debt outstanding after 25 years would be written off, and the annual earnings threshold for debt repayments would be raised from £9,285 to £13,925). Some students would also be entitled each year to a means-tested grant up to £2,700, a means-tested maintenance loan of between £3,305 and £4,405, and a means-tested bursary of at least £300 if their university charged the full top-up fee.

3. The Conservatives would scrap tuition fees and make a £5,000 annual maintenance loan available to students from all family backgrounds. These loans would be offered by banks at market interest rates, estimated at between 6.5% and 8% (nominal) a year. Repayments would be set at 9% of the graduate's earnings above £13,925, with outstanding debt written off after 25 years. A means-tested grant of up to £1,500 p.a. would be available to students whose parental earnings are below £22,100 a year.

4. The Liberal Democrats would also abolish tuition fees. They would offer a means-tested maintenance loan of between £3,225 and £4,300 per year and a means-tested grant of up to £2,000 a year for those from families in which parental earnings are below £22,100. Repayments would be scheduled at 9% of the graduate's earnings above £13,925 and would carry a zero real interest rate, with any outstanding debt written off after 25 years.

What would the reforms cost and who would pay?

1. The baseline HE system costs the taxpayer £6,300 million, with students contributing a further £500 million in upfront fees. This provides universities with income of £5,800 million and graduates with a loan subsidy of £1,000 million.

2. The Conservative proposals would provide universities with an extra £1,200 million and students with an extra £900 million compared with the baseline system. This would cost taxpayers an extra £1,100 million and graduates would lose the £1,000 million they received under the baseline system. Around £400 million of the taxpayer contribution would be made by gifting the Student Loan Book to the universities.

3. Labour's proposals would provide the universities with an extra £1,100 million and students with an extra £1,500 million. This would cost both taxpayers and graduates £1,300 million, making graduates net contributors to the system.

4. The Liberal Democrat proposals would provide both universities and students with approximately an extra £1,100 million. The whole bill of £2,200 million would be picked up by taxpayers, funded by the introduction of a 49% income tax rate on all incomes in excess of £100,000. Graduates would remain net beneficiaries of the system, because of the loan subsidy they would receive.

5. The extra money provided to universities would be broadly similar under all three proposals. Students would gain most from Labour and least from the Liberal Democrats. The cost of the proposed reforms would be shared more or less equally

between taxpayers and graduates under Labour and the Conservatives, but would be borne entirely by taxpayers under the Liberal Democrats.

What would the reforms imply for university funding?

1. The baseline HE system in 2003–04 provided funding per student of around £5,900 in 2006–07 prices. This would rise to £7,600 under Labour, £7,600 under the Conservatives and £7,700 under the Liberal Democrats, an increase of roughly 30% in each case.

2. This would return funding per student to the levels seen in the early 1990s, but would leave it well below the peak of around £11,000 experienced in 1973.

3. If universities wished to raise funding levels under Labour, they may be allowed to set fees in excess of £3,000 after this limit expires in 2010–11. This would require an extra contribution from graduates and presumably an extra contribution from taxpayers to subsidise bigger loans to cover the higher fees.

4. Under the Liberal Democrats and the Conservatives, the money would have to come from the taxpayer, although the Conservatives are also proposing incentives to encourage universities to raise more income from endowments.

5. Labour's policy to require universities to pay bursaries to students from lower-income families would mean that universities with relatively large numbers of students from low-income families would receive less extra funding per student. Under the Conservatives, universities that are relatively successful at attracting endowments would receive more of the proceeds from the Student Loan Book.

6. The increase in student funding per head implied by the three parties' proposals would lift funding in the UK above the 2001 figures for Australia and Japan, but leave it below those for the Scandinavian countries and the USA. Funding per student in the UK already exceeds that in France, Ireland, Germany and Italy.

What would the reforms mean for students?

1. The National Union of Students (NUS) estimates that the basic cost of living for a student in year 1 or 2 of their degree, living away from home and outside London, is £6,890 in 2006–07 prices, excluding fee costs. None of the funding schemes proposed by the parties would provide students with this much income from maintenance loans, grants and bursaries alone.

2. Just how far the support packages would go towards meeting the cost of living would depend on take-up of debt. Under the Labour and Liberal Democrat systems, the loan subsidy would make it sensible for students to borrow the maximum amount they would be entitled to, regardless of the standard of living they seek to reach. However, because the Conservatives' loans would not be subsidised, it would not always make sense to borrow to the maximum under them, depending on family income and other circumstances.

3. If students wish to achieve (as far as possible) the same standard of living under the Labour, Conservative and Liberal Democrat systems, the poorest students would have maintenance loans of £3,555, £5,000 and £4,300 p.a. respectively. This would still leave them between £335 and £590 short of the NUS cost-of-living estimate. The richest students would have maintenance loans of £3,305, £3,305 and £3,225 p.a. respectively and this would leave them between £3,585 and £3,665 short of the NUS estimate. This assumes that students would not avail themselves of other sources of external finance.

4. These borrowing levels would mean that total debt on graduation under the Labour, Conservative and Liberal Democrat systems would be £19,340, £16,230 and £12,340 respectively for the poorest students, and £18,670, £10,730 and £9,250 respectively for the richest students. This assumes that students would borrow full fee loans of £3,000 p.a. under Labour.

What would the reforms mean for graduates?

1. How graduates fare under different parties' HE funding schemes depends on their lifetime earnings, how much debt they graduate with, and the interest rate and repayment conditions for their loans.

2. We have used innovative techniques to estimate the full distribution of likely future graduate and non-graduate lifetime earnings profiles, taking into account earnings mobility and periods of non-employment, in order to assess how different HE funding policies would affect graduates.

3. We estimate the median of the lifetime earnings distribution for male graduates to be around £325,000 higher than the equivalent figure for male non-graduates. For women, the lifetime earnings advantage of the median graduate over the median non-graduate is around £430,000.

4. However, there is considerable variability in total lifetime earnings across the population. Indeed, some graduates will earn less than some non-graduates over their lifetimes. For example, whereas 15% of male graduates will earn *less* than £900,000 over their lifetimes, 18% of male non-graduates will earn *more* than this amount. Similarly, 15% of female graduates are likely to earn *less* than £500,000 while 16% of female non-graduates will have lifetime earnings *greater* than £500,000.

5. Allowing for mobility and periods out of work results in lower estimates of within-education-group lifetime earnings inequality than conventional estimates, in which it is generally assumed that individuals are employed for every year of their working lifetimes and that they stay at the same point in the earnings distribution throughout their lives. The standard deviation of the lifetime earnings distribution for male graduates decreases by 60% when the effects of mobility and non-employment are taken into account.

6. Assuming that students take out loans so that their living standards while at university are the same (as far as possible) under all three systems:

- Under the Labour policy, the average taxpayer subsidy on loans ranges from 27.4% to 29.1% for men and from 41.2% to 45.7% for women, depending on the family income of the student while at university. Under the Liberal Democrat policy, the corresponding numbers are 21.0% to 23.3% for men and 26.3% to 30.9% for women.

- The average time to pay back loans, and the percentage of graduates not paying back their loans within 25 years of graduation, differ considerably between the three systems. Furthermore, even within systems, they are different for graduates from different backgrounds.

- Male graduates from the poorest families pay back debt on average for the shortest time under the Liberal Democrats' proposed system and for the longest time under the Conservative system. This is also the case for female graduates.

	Men		Women	
	Low-income family	High-income family	Low-income family	High-income family
Labour				
Years to pay debt	17.3	17.0	22.2	22.0
Percentage of graduates not paying off debt after 25 years	3.3%	3.1%	58.1%	54.6%
Conservatives				
Years to pay debt	20.9	15.2	23.2	20.9
Percentage of graduates not paying off debt after 25 years	18.8%	2.9%	81.4%	50.3%
Liberal Democrats				
Years to pay debt	13.3	11.3	18.2	15.2
Percentage of graduates not paying off debt after 25 years	1.3%	0.9%	21.9%	11.2%

7. Under the Conservative proposals, there is a potentially large adverse selection problem in the market for loans. This is because loan take-up is likely to be higher amongst graduates who are less likely to repay their debt in full. For example, for women who take an extended break from the labour force, the value of debt written off after 25 years is likely to be on average at least as large as the value of the debt on graduation. As banks are restricted in terms of the amount of repayment that they can demand of graduates each year, and as they are forced to write off outstanding debt after 25 years, the effectiveness of increasing interest rates, so as to cover the costs of debt default, is limited.

1. Introduction

In the run-up to the next general election, higher education (HE) funding policies will be a key election issue. This Commentary compares Labour's proposed reforms to the system of HE finance in England[1] and the alternative proposals outlined by the Conservative Party in September 2004[2] and the Liberal Democrats in January 2005.[3]

At their root, all of the parties' proposals aim to increase the level of funding per university[4] student. But the ways in which this will be achieved are very different. This has implications for how well off students will be and how well off future graduates will be and will also have implications for universities and the taxpayer. All of these issues are explored in this report.

Our Commentary brings together the facts relating to proposed reforms to HE funding and offers new insights into the HE funding debate in the run-up to the election, including:

- the economic arguments behind government intervention in the higher education market and what features a sound funding scheme should display;

- an exposition of the key features of the three parties' HE policy, and the main differences between them;

- how the numbers behind the different proposals add up, setting out the implications for taxpayers, universities, students and graduates;

- an assessment of what the reforms will mean for the living standards of students whilst at university, and what levels of debt students are likely to graduate with under different funding systems;

- an in-depth examination of the impact of different HE funding policies on graduates across the entire distribution of likely future graduate earnings paths, accounting for earnings mobility and time spent out of the labour market.

This research builds on earlier work at IFS in which we provided assessments both of the government's plans for reforming HE funding[5] and of previous Conservative and Labour proposals.[6]

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[1] Department for Education and Skills, 2003, 2004a, 2004b and 2004c.

[2] See Conservative Research Department (2004).

[3] See Liberal Democrats (2005).

[4] In line with Department for Education and Skills (2003) and for ease of reading, we use the word 'university' as a substitute for 'higher education institution'.

[5] See Dearden, Fitzsimons and Goodman (2004a).

[6] See Goodman and Kaplan (2003).

2. Economic principles behind government intervention in the HE market

2.1 Who should pay for the costs of tuition and living expenses?

The most fundamental way in which Labour's proposals and the proposals set out by the Conservatives and Liberal Democrats diverge is in who pays for the costs of tuition. They also diverge in their vision of who pays for costs of living whilst at university (see Chapter 4).

What economic principles underlie the question of who should pay for higher education fees and living costs? First, it is important to be clear that higher education is never free, whether the costs are met upfront by students, later in life by graduates or in an ongoing way by taxpayers in general (or indeed subsidised by the universities themselves). Altering the system of HE finance changes the timing of payments and might also change the incidence of payments, but does not change the fact that the cost of university education must be paid for in one way or another.

With no intervention in the market for higher education, all students would bear the full costs of their higher education – both fees and living costs – upfront and in full. Although there is clear evidence that individuals stand to gain financially from attending university[7] – both from an increased likelihood of employment and from higher earnings once in employment – at least five different sorts of problems might justify government intervention:

- **Capital markets** may not develop to allow students to borrow enough money to cover the costs of their tuition and maintenance. This could lead to an inefficiently low level of participation in higher education. Moreover, this inefficiency may be inequitable, affecting students from poorer families more than those from richer ones.

- Students may lack the **information** they require to make rational, informed choices.

- Young people may be too short-sighted or too debt-averse to make the choices that are likely to be best for them. This may lead to the government intervening to affect education choices for **paternalistic** reasons.

- Apart from the private benefits to a degree, there may also be **social returns** to higher education.[8] Young people may have a limited incentive to take these into account when deciding whether or not to go to university, so the government may intervene to affect choices.

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[7] For example, see Blundell et al. (2000) and Dearden, McGranahan and Sianesi (2004).

[8] For a discussion of the social returns to education, see Blundell, Dearden and Sianesi (2004) and the references therein.

- There may also be a case for intervention on **equity** grounds. A government may wish to influence the composition of participants in higher education in such a way as to reduce future inequalities.

Given these issues, one might expect the government to determine who should pay, how much and when, so as to generate what it regards as the optimal level of investment in education, both for the individuals who are investing and for society as a whole. In order to understand more fully the possible forms that intervention is likely to take, we now look more closely at issues relating to credit markets and to subsidising the cost of higher education.

2.2 Credit markets: helping students raise the money to pay for higher education

The first – and arguably the most important – aspect of the market for higher education is that the main benefits are not realised until some time after the costs of undergoing education are incurred. As such, it represents an investment, with at least part of the pay-off taking the form of higher earnings potential later in life. This renders it different from many other goods, from which the pay-offs accrue upon consumption. Of course, there are likely to be consumption benefits to attending university, such as enjoyment of learning and/or other aspects of student life, but in general these are secondary to the long-term benefits.

In the absence of government intervention, it is only if students themselves can somehow raise the money to pay for their higher education that they can make the investment. Some individuals may work part-time or may receive repayable and/or non-repayable contributions from parents, or they may study after a period of employment, in order to pay for university. However, in general, students – particularly those from lower-income families – must be prepared to borrow to finance the investment. If they rely on capital markets for loans, such markets must operate efficiently in order for an optimal level of investment in higher education to be realised.

Moreover, the returns to this investment are also uncertain. Some people stand to gain a great deal from their higher education, in terms of future income. Others stand to gain much less. The rewards for a particular individual cannot be known in advance with any degree of certainty. This means that there needs to be some form of insurance in operation, allowing people to pool their risks, in order for an optimal level of higher education to be realised.

In principle, even if the returns are uncertain, we might expect capital markets to develop to help individuals to pay for their higher education. This would allow an efficient level of educational investment to take place without the government stepping in. However, in practice, there are some common reasons why capital markets fail:

- **Lenders** are prone to problems relating to asymmetric information. If banks or other potential lenders lack sufficient information about the potential future earnings power of loan applicants, the market may deliver too few loans or may simply break down altogether (this problem is commonly referred to as *adverse selection*).

- If **borrowers** realise that they can avoid paying back their loans – for example, by not earning sufficient income to repay them or by declaring bankruptcy[9] – and lenders lack the information to monitor their behaviour closely enough, the market may break down for this reason (this problem is commonly referred to as *moral hazard*).

In many markets in which banks or other financial institutions provide loans, individuals are required to provide collateral to overcome these informational problems. However, in the case of loans for higher education, just as with other investments in human capital, there is no obvious collateral that an individual can put forward against the value of the loan – lenders do not have property rights over students' future earnings, and bonded labour is illegal.[10] This makes it even less likely that a fully effective credit market will develop without the government intervening.

What do these credit market failures suggest about who should pay for university tuition? One possible approach that a government could take is to remove the requirement for students to pay for their fees, as in the Conservative and Liberal Democrat proposals. This would certainly remove some short-term financial constraints that may deter students from attending university. Another approach is to remove any upfront fee requirement and to make fee payment deferrable until after graduation, as in the Labour proposals. However, it is important to remember that regardless of whether fees are payable or not, living costs are also likely to represent a significant deterrent to potential students, if capital markets are not perfect.

It is also important to remember that while the presence of credit market failures might justify action by governments to make it easier for students to borrow sufficient money to cover the cost (or to defer payment until later in life in some other way), it does not justify exempting them from all or part of that cost. In fact, credit constraints alone do not justify *any* subsidy; they only rationalise policies aimed at overcoming the capital and insurance market failures discussed. A more direct approach to alleviating credit constraints is to intervene in the credit market – for example, through providing loans at an economically efficient interest rate and/or through providing insurance by making loan repayments income-contingent.[11] Designing a tax system that could achieve the same effect is theoretically possible but would be much more difficult and complicated.

2.3 Subsidising the cost of higher education: lowering the price faced by students

As well as helping students to raise the capital they require, governments might also want to encourage more people to go to university than would otherwise choose to do so at the market

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[9] See 'Is going bankrupt the way to stay afloat?', *Guardian*, 14 June 2003, for evidence that some students have declared bankruptcy in order to avoid paying debts.

[10] This would not be a problem for some older students, who could borrow against assets, or students whose parents are prepared to underwrite a loan.

[11] However, students may still be reluctant to take out loans, even if they are income-contingent, and whilst this may justify some subsidy on cost–benefit grounds to deal with this credit-constraint problem, this is difficult to implement because of moral hazard problems (see Section 2.5 below).

price, by providing subsidies for tuition and/or living costs. This could be justified in the presence of externalities in the market for higher education and/or on paternalistic grounds:

- **Externalities:** An optimal policy approach would be to encourage more people to go to university than would choose to go at the market price, if there are social returns to higher education that individuals do not take into account when making their education choices. For example, the benefits to some forms of research and innovation facilitated by higher education may be large, with the benefits to society outweighing the amount that any individual or firm can privately capture. An example could be scientific research for which the benefits to society are larger than the financial benefits captured by patents. There may also be benefits to society from a better-educated population, such as lower crime rates. However, it is open to debate what the size of such externalities is likely to be, how widespread they are and how best to alter the market to capture them. For example, it may be more efficient to fund research, from which the biggest externalities are likely to arise, or to subsidise some subjects more than others, rather than to provide blanket subsidies for all HE study.

- **Paternalism:** Society might believe that young people will not make the right choices for themselves if they are liable for the full costs of their tuition and maintenance, even if they are able to borrow to cover the costs. For example, if individuals are too short-sighted or too averse to running up debt to take out loans to attend university, then intervention may be appropriate. One particular concern is that young people from lower-income backgrounds may both discount the future especially highly (i.e. be unprepared to forgo current income for future gains) and be more averse to borrowing in order to generate funds for living costs while they study. This may be in part due to them not understanding the implications of the different funding options open to them. This means young people should be provided with clear and comprehensive information about the likely implications of the different choices available.[12]

2.4 Equality, fairness and reducing inequality

All of the economic arguments discussed so far relate to how the government might intervene to ensure efficient HE outcomes and therefore an optimal level of HE investment. Some of the arguments discussed are likely to be more relevant for younger individuals from low-income backgrounds, who, compared with individuals from wealthier backgrounds or older students, may:

- be more likely to be credit-constrained if the market for loans fails, as parents are less likely to be able to fund their study;

- be more debt-averse, or more likely to discount the future more heavily[13] (this is especially so if there is a need to generate income at the earliest time possible to help support the family, or if the family cannot help out with future loan repayments if the expected returns to education fail to materialise);

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[12] Indeed, this is what the DWP's 'informed choice' is doing with respect to retirement savings decisions.

[13] See Blundell et al. (2004).

- not have as many close relatives who attended university, in which case they will have less information about the relative costs, benefits and risks of attending university than their better-off peers.

But all of these efficiency arguments to one side, the government may wish to pursue other objectives. In particular, it may seek to equalise the distribution of income, or to reduce the intergenerational persistence of income. It may thus intervene in the HE market on these grounds alone, and may indeed choose to trade efficiency off against equity (e.g. to set fees at an inefficiently low level) to achieve these goals.

2.5 Designing an attractive funding system

Referring to our discussion above, there are a number of principles we can draw out underlying the design of an ideal HE funding system.

- **Credit markets:** It is important to ensure that students are able to study now and pay later (both for fees and for costs of living), through a well-functioning market for loans or a carefully designed tax system. Students also need to be insured against future earnings risk. Again, this might be built into a system of loans or into the tax and benefit system.

- **Price:** The amount that students or graduates pay should be subsidised to reflect any externalities, or for paternalistic reasons. However, despite these reasons for subsidies, the benefits of undertaking higher education are on average high, as well as variable. The benefits vary by subject chosen, university and luck. There are good economic efficiency arguments why students who benefit from university should pay for it and those who benefit most should pay more than others.

- **Fairness:** Students should be able to make HE choices based on an assessment of the long-term benefits to them of attending, and not on the basis of short-term funding constraints, which will be largely determined by family income. Students should therefore have access to an acceptable level of living support whilst undertaking their course, regardless of family income (this is closely related to the credit market point, above). Ideally, family income should be assessed relative to family size for these purposes.

- **Administration:** The funding system should be simple, transparent and flexible, and as much information as possible about the costs and benefits of HE should be provided.

- **Quality:** If students are required to pay part of the costs of their education through fees, this may well drive up standards of provision or ensure that provision is more tailored to individual needs.

No one system can meet all of these aims for every student and there is no one ideal scheme. Students are different in ways that policy-makers cannot observe. For example, students coming from families with high incomes may, in most cases, receive direct support from their parents for living costs; but some students will not, and this is likely to affect their HE decisions. It is very difficult to devise a policy that can deal with this situation, since if exceptions were made for people whose parents did not help, then this would change the behaviour of parents who otherwise would have contributed to their child's maintenance. The

taxpayer would end up footing the bill for something that most high-income parents would otherwise have done willingly. This is the problem of moral hazard.

Some policies will be good at meeting some of the criteria we have set out at the expense of others, and ultimately how any one individual assesses the merits or otherwise of a particular system will in large part be a reflection of their particular priorities. However, often the full implications of a particular scheme are not obvious or the detail and operation of a proposed policy are not clear – even to the policy-makers themselves – and it is the aim of this Commentary to set out in a clear and comprehensive manner the full implications of the different funding schemes. In the Conclusion, we will briefly assess the policies of each of the three main political parties against these criteria in an attempt to verify whether the schemes that the parties put to the electorate actually achieve the outcomes that they have prioritised.

3. Details of the proposed reforms of the different parties

The main features of the proposed reforms to the higher education funding system are set out in Table 3.1. The first column shows the proposals under Labour, the second column shows the main features of the Conservative proposals and the third column shows the Liberal Democrat proposals.

Before proceeding, it should be noted that throughout this Commentary, we present all figures relating to the reforms in 2006–07 prices, *not* current 2004–05 prices.[14] The corresponding figures in today's prices are available from the authors.

3.1 The 2003–04 HE funding system

The HE funding system that we use as the base against which to assess the proposed changes is the system that applies to students who started their study in 2003–04. This is because we believe it is correct to include the re-introduction of the maintenance grant in 2004–05 as an element of Labour's reforms, as well as the increase in the loan repayment threshold in 2005–06. This was an element of the phased reforms first set out in the 2003 White Paper (Department for Education and Skills, 2003) and subsequently modified (Department for Education and Skills, 2004b). Academic year 2003–04 was the final year before any of the White Paper changes had begun to be implemented. The key features of the 2003–04 system are:

- Upfront fees of £1,200 per annum across all undergraduate courses and universities. Individuals from low-income families (annual parental income below £33,560) were entitled to a full or partial fee exemption, means-tested against parental income.

- No student grants.

- Means-tested maintenance loans of up to £4,305 per annum available to all students, repayable at a rate of 9% of any earnings above £10,000 each year.[15] The outstanding value of the loan would rise each year in line with inflation. There was no provision for debt write-off.

Full details of the 2003–04 funding scheme are contained in Appendix A.

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[14] This follows the government's own approach in its presentation of the key features of the reforms.

[15] This is the threshold that would apply to new students from 2003–04 who would graduate in 2006–07. In analysing debt repayment under the various policies for new students in 2006–07 (when the new policies would be implemented) in Chapter 7, the threshold under the 2003–04 system is £9,285. This is the threshold that would apply to the hypothetical situation of a new student in 2006–07 facing the 2003–04 system.

Table 3.1. Details of Labour's proposals 2004, the Conservatives' proposals 2004 and the Liberal Democrats' proposals 2005 (2006–07 prices)*

Measures	Labour's proposals**	Conservatives' proposals	Liberal Democrats' proposals
FEES UPFRONT FEES	No upfront fee.	No fee.	No fee.
DEFERRED FEES	Set by university. Initial cap of £3,000 p.a. No fee exemptions.	No fee.	No fee.
LOANS LOANS FOR FEES	Equal to fees charged by university. Not means-tested.	N/A	N/A
LOANS FOR MAINTENANCE Students living away from home outside London	£3,555 (£3,225)[a] p.a. if family income <£26,000 Loan of £3,555 (£3,225) p.a. is incrementally increased by up to £850 between family income of £26,000 and £33,560, so that for family income of £33,560 the loan is £4,405 (£4,070) p.a. Loan of £4,405 (£4,070) is tapered away between family income of £33,560 and £44,000 (£42,500) so that for family income above £44,000 (£42,500) the loan is £3,305 (£3,055) p.a.	£5,000 p.a. Not means-tested.[b]	£4,300 (£3,735) p.a. if family income <£33,560 Loan of £4,300 (£3,735) p.a. is tapered away between family income of £33,560 and £44,000 (£42,500), so that for family income above £44,000 (£42,500) the loan is £3,225 (£2,800) p.a.
REPAYMENT OF LOANS	9% of income above £15,375 (from 2005–06). £15,375 to be fixed in nominal terms until 2010–11.[c] Loans to be state-subsidised. Zero real interest rate. Debt forgiveness after 25 years.	9% of income above £15,375. To be fixed in nominal terms until 2010–11. Loans to be provided by a not-for-profit corporation financed by commercial banks. 4.0%–5.5% real interest rate (6.5%–8% nominal). Debt forgiveness after 25 years.	9% of income above £15,375. To be fixed in nominal terms until 2010–11. Loans to be state-subsidised. Zero real interest rate. Debt forgiveness after 25 years.

Table 3.1 continued

Measures	Labour's proposals[**]	Conservatives' proposals	Liberal Democrats' proposals
GRANT	Means-tested maximum of £2,700 p.a. comprised of: (a) £1,200 if family income <£22,560. Tapered to zero at family income of £33,560 *plus* (b) £1,500 if family income <£15,970. Tapered to zero at family income of £22,100.[d]	Means-tested maximum of £1,500 p.a. if family income <£15,970. Tapered to zero at family income of £22,100.	Means-tested maximum of £2,000 p.a. if family income <£15,970. Tapered to zero at family income of £22,100.
BURSARIES	Minimum of £300 p.a. if family income <£15,970 *and* university charges fees of £3,000 p.a.[e]	N/A	N/A

* Unless otherwise stated, all proposals relate to academic years from 2006–07. All figures have been converted to 2006–07 prices using an inflation rate of 2.5% per year.

** Not all of the proposed Labour reforms would affect existing students. Top-up fees, bursaries, grants and debt write-off would apply to *new* students only from 2006–07. Fee loans and maintenance loans would apply to *new and existing* students from 2006–07. The fee loan entitlement for existing students would be equivalent to the fees they are liable for (i.e. up to £1,200 p.a.). It is unclear whether the reduction in the maintenance loan for new students that some would incur due to the increased grant of £2,700 would also apply to existing students, none of whom would be entitled to the increased grant (see, however, www.dfes.gov.uk/studentsupport/students/200_2006_entry.shtml). Note further that the repayment threshold of £15,000 under the Labour system will apply to *all* borrowers from April 2005.

a. Throughout this table, non-parenthesised figures refer to first- and second-year students and parenthesised figures refer to final-year students. For more details of loan amounts in the government's proposed system, see Dearden, Fitzsimons and Goodman (2004a).

b. Conservatives have not yet finalised the loan differentials for first- and second-year and final-year students. Furthermore, it is likely that the value of maintenance loans under the Conservatives' system would vary by London/non-London student status and by whether the student lives at or away from home. Details yet to be finalised by the Conservative Party.

c. The threshold being fixed in nominal terms means that its real value would be eroded over time. Starting from a value of £15,375 in 2006–07 prices (£15,000 in 2005–06 prices), its value in 2009–10, based on an expected inflation rate of 2.5% per annum, is £13,925 in 2006–07 prices.

d. The exact details of the thresholds and tapers relating to the combined grant and maintenance loan are yet to be determined, but some indicative figures are provided in Department for Education and Skills (2004c).

e. Any university charging fees of over £2,700 would be obliged to provide bursaries to cover the remaining fee due above that level, for students from the poorest backgrounds.

Sources: Department for Education and Skills, 2003, 2004a, 2004b and 2004c; Conservative Research Department, 2004; Liberal Democrats Policy Briefing 4, 2005.

3.2 Labour Party proposed reforms

The Labour Party's reforms were set out in the White Paper (Department for Education and Skills, 2003) and the Higher Education Act 2004 (see column 1 of Table 3.1).[16] The reforms are now partially implemented, though many of the most substantial changes are not due to come into effect until academic year 2006–07.

The Labour funding system would see the abolition of upfront tuition fees for all students and the introduction of variable fees of up to £3,000 a year for new students from 2006–07. Graduates would be entitled to a subsidised Graduate Contribution Scheme loan equal to the value of their fees. Graduates from 2009–10 would contribute 9% of any earnings above £13,925[17] each year towards repaying the loan. The outstanding value of the loan would rise each year in line with inflation, with any sum remaining unpaid after 25 years to be written off.

While at college, students from the poorest backgrounds would receive a bursary of at least £300 a year if the university charged full top-up fees.[18] Students from families with incomes of up to £33,560 would receive a means-tested grant of up to £2,700 a year. Students would also be entitled to a means-tested loan of up to £4,405[19] (for those living away from home and outside London) to help cover living costs. The repayment terms for maintenance loans would be the same as those for fee loans.

The proposals give the poorest students the option to avoid incurring debt for any fees that universities may choose to charge, through providing a maintenance grant of £2,700 p.a. and requiring universities to pay out bursaries to cover any outstanding fees. However, this money need not be put towards fees, as all students would have the option of taking out subsidised loans to pay for fees. If students exercised this option, they would be left with more money to put towards living expenses. The upper parental income threshold at which entitlement ceases is £22,100 p.a. for the £1,500 element and £33,560 p.a. for the additional £1,200 grant.[20]

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[16] All of the proposals are brought together in the Regulatory Impact Assessment (RIA) (Department for Education and Skills, 2004b). From here on, we use the term 'Higher Education Act' to denote all of the proposals as laid out in the RIA.

[17] This is the value of a £15,000 threshold in 2009–10, expressed in 2006–07 prices (see note c to Table 3.1).

[18] This means that any university charging fees of over £2,700 would have to provide bursaries equivalent to the fee cost above that level, to students from the poorest backgrounds.

[19] However, this amount would only be available to students with parental income of exactly £33,560. For students with parental income below £26,000 or above £44,000, the maintenance loan would be £3,555 or £3,305 respectively. From parental income of £26,000, it would gradually increase from £3,555 up to £4,405 at parental income of £33,560. It would then gradually decrease to £3,305 at parental income of £44,000. This quirk in the tapering has arisen as a means of maintaining cost neutrality after the conversion of the £1,200 fee exemption into an upfront grant (for those eligible for the fee exemption).

[20] This upper threshold was brought about through the conversion of the fee exemption into an upfront grant (19 January 2004). The existing fee exemption thresholds would continue to apply to the £1,200 component of the grant.

3.3   Conservative Party proposed reforms

The way in which the Conservatives' system would operate is set out in column 2 of Table 3.1. The most notable aspect of the reforms would be the complete removal of all tuition fees – both the basic fee currently paid by university students and any top-up fees universities might choose to charge from 2006–07.

Since loans would no longer be required to cover tuition fees under the Conservatives, loans would be available to cover maintenance only. The borrowing limit would be lifted to £5,000 per year for all students, regardless of family income. Rather than government-backed zero-real-interest-rate loans, the loans would be available from a not-for-profit corporation financed by commercial banks at a market interest rate. The Conservatives presently estimate that the market loans would charge a nominal interest rate of between 6.5% and 8% (equivalent to around a 4% to 5.5% real interest rate), with 8% being the upper threshold for the lifetime of the next Parliament.[21] Further, banks would also be able to offer students the choice of a fixed or flexible rate.

Despite carrying a real interest rate, this new form of debt would differ from standard bank loans in so far as its repayment schedule would be income-contingent and outstanding debt would be written off after 25 years. Repayments would be scheduled at 9% of earnings above a threshold of £13,925 p.a.[22] Therefore monthly debt repayment amounts would be the same as under the Labour system, but the length of time to repay the same loan would be longer.[23]

The Conservative plans also include the introduction of a grant up to a maximum of £1,500 p.a. for the poorest students, i.e. those with annual parental income below £22,100.

3.4   Liberal Democrat Party proposed reforms

The Liberal Democrats also propose to remove all tuition fees. Students whose parental income is below £22,100 would receive a means-tested grant of up to £2,000 a year. Students would also be entitled to a means-tested loan of at least £3,225 (for those living away from home and outside London) to help cover living costs. Repayments would carry a zero real interest rate and would be fixed at 9% of earnings above a threshold of £13,925 p.a.[24] Outstanding debt would be written off after 25 years.

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[21] The Conservatives plan to take out insurance in the financial markets that will ensure that the interest rate charged to students cannot rise above 8% during the lifetime of the next Parliament, and they 'do not expect this to rise thereafter' (see Conservative Research Department (2004)).

[22] See footnote 17.

[23] This assumes that graduates choose to repay no more than the minimum 9% repayment required. However, as the loan is not subsidised, there is more incentive for graduates to make voluntary repayments.

[24] See footnote 17.

Before proceeding, it is worth pointing out that the key ways in which the three sets of proposals differ from each other relate to fundamental principles concerning fees and loans. Grants on the other hand, are included in all proposals and differ across systems only in their generosity. The complete abolition of tuition fees – as in the Conservative and Liberal Democrat systems – would essentially close down the market for university courses, which would be allowed to operate under a Labour system through the variable element inherent in the fee proposals.[25]

Before we consider the likely effects of the various proposals on students and graduates (Chapters 6 and 7), we first provide more details of the costs of these reforms and who will pay for them (Chapter 4) and discuss the funding implications for universities (Chapter 5).

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[25] The Office for Fair Access in a press release on 17 March 2005 has estimated that 91% of Higher Education Institutions and Further Education Colleges are planning to charge the full tuition fee of £3,000 (www.offa.org.uk/news/2005/acc_agr.asp).

4. What the reforms would cost, and who would pay

4.1 What do the reforms mean for the taxpayer?

Relative to the £6.3 billion cost to the taxpayer of the 2003–04 system, the Conservative plans would cost an extra £1.1 billion, Labour's an extra £1.3 billion and the Liberal Democrats' an extra £2.2 billion.

We first set out the composition of the taxpayer costs of the 2003–04 system, for reference, before outlining the details of the public spending implications of each party's reforms. We then look more broadly at what the reforms would cost and who would pay for them.

How much does the taxpayer contribute to the 2003–04 (base) system?

The base system, if in place in 2006–07, would cost the taxpayer approximately £6.3 billion per year, restricting our analysis to the costs of teaching and to higher education institutions in England only. These costs are made up of approximately:

- £4,800 million in subsidies for teaching;
- £450 million in fee remissions;
- £1,000 million in maintenance loan subsidies.

(See Table 4.1, and accompanying notes, for sources.)

4.2 Labour's proposals

The additional spending implied by Labour's plans compared with the 2003–04 system all arises from increases to student and graduate support, and none arises from giving more subsidies direct to universities (see Table 4.1):

- The most significant additional public spending contained in Labour's plans is the cost of new fee loan subsidies. Although official government estimates of this cost are now out of date,[26] the Liberal Democrats estimate the cost at around £800 million, under plausible assumptions (see notes to Table 4.1, and Appendix B).

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[26] The latest published government estimates put this cost at around £670 million. This costing has been made on the assumption that only 75% of universities charge the full top-up fee. However, the latest evidence we have suggests that around 91% of universities now plan to charge the full top-up in 2006–07 (see footnote 25); it is also likely that student numbers will have increased by 2006–07, making this an underestimate of the true cost of fee loan subsidies. Revised government costings have not yet been made at the time of writing.

- Labour's plans also include increasing the maximum maintenance loan, which the Department for Education and Skills has costed at £70 million.[27]

- Approximately £420 million additional spending would be paid out in grants. This covers the £1,500 grant introduced in 2004–05. The additional grant that would come into effect in 2006–07 when top-up fees become payable (the 'Single Combined HE Grant') has been designed to cost the same to the taxpayer as the current fee remission already included in the 2003–04 system, and so no additional costs for this are included here.

➤ In total, Labour's plans imply additional public expenditure compared with the 2003–04 system of around £1.29 billion per year. The overall cost of the system to the taxpayer would rise to around £7.6 billion per year.

It is also worth pointing out that Labour's plans also include raising the repayment threshold on maintenance loans from £10,000 to £15,000.[28] According to the Regulatory Impact Assessment for the Higher Education Bill and White Paper proposals (Department for Education and Skills, 2004b), 'from 2005 we will raise the threshold at which loans start to be paid back from £10,000 to £15,000 per year, to make repayment less burdensome'.

However, the same document also suggests that this will be at *no additional cost to the exchequer*:

> Raising the threshold from £10,000 to £15,000 will increase the cost of student loans to Government. From April 2010 it is intended that it should increase in line with inflation. However, since the cost of the current loans is assessed on the basis that the threshold will rise in line with earnings growth, there are offsetting savings associated with up-rating by inflation instead. The combined effect of the two is expected to be a small net saving in cost to Government over the period during which variable fees will be introduced.
>
> Department for Education and Skills, 2004b

These statements suggest that in raising the repayment threshold, there are in fact two separate policy reforms being introduced:

- The repayment threshold is being raised from £10,000 to £15,000, at a cost to the exchequer (since students spread their repayments over a longer period of time and at zero real interest, gaining a bigger subsidy).

- The default method of indexation is being changed from earnings indexation to price indexation. This will mean an overall gain to the exchequer (since above-inflation earnings growth will mean that students will repay their loans faster, gaining a smaller subsidy).

According to the government's calculations, the overall revenue effects of these two policy measures should cancel each other out.

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[27] This additional maintenance loan subsidy cost estimate is based on DfES costings produced before the announcement of the conversion of the fee remission into the Single Combined HE Grant, and the subsequent rescaling of fee and maintenance loans to ensure that the conversion would be cost-neutral. Such rescaling will affect the balance of costs between fee and maintenance loan subsidies, but not their overall cost to the taxpayer.

[28] In 2006–07 prices, this is £13,925.

Two points need to be raised about this issue. First, the repayment threshold has remained fixed in nominal terms at £10,000 since the introduction of income-contingent loans in 1998. This means that the threshold has not been uprated even with inflation, let alone earnings, at an annual saving to the exchequer. This apparent deviation from 'default' indexation has not, as far as we are aware, been accompanied by any policy announcements.

Second, it is highly misleading to describe the policy as one that 'make[s] repayment less burdensome', since its overall revenue neutrality would suggest that this is not the case.

4.3 The Conservatives' proposals

The Conservatives incur some extra public spending compared with the 2003–04 system, but also make some savings. In Table 4.1, we set out the Conservative estimates of the costs that they would incur:

- The majority of the new expenditure is incurred as a result of increasing the taxpayer subsidy to universities, in order to guarantee 'fee replacement'; this is designed to cover the revenue that universities would lose from the removal of basic tuition fees, and the revenue they would have gained if top-up fees were introduced. The overall cost of fee replacement is estimated by the Conservatives at around £1.8 billion per year. Since the taxpayer already contributes around £450 million in fee remission, this implies a net addition of £1.35 billion. It is important to note that this level of fee replacement would only be enough to replace the revenue raised if:

  - three-quarters of all universities charged the full top-up and a quarter charged only the basic fee; and

  - the number of students assessed for fees remains the same as in 2003–04

  (See illustrative costs set out in Department for Education and Skills (2004b).)

  However, it seems that 91% of universities now plan to charge the full top-up in 2006–07;[29] it is also likely that student numbers will have increased by 2006–07, making this level of fee replacement a partial, rather than full, fee replacement.[30] If the Conservatives wanted to guarantee full fee replacement (and they have made no announcements that they would), this would imply additional public expenditure – of up to £330 million – according to the latest available estimates. This estimated addition, however, does not take into account the effect of increased student numbers on the required level of fee replacement.

- In addition to (possibly partial) fee replacement, the taxpayer would provide new money to universities by gifting the outstanding value of the Student Loan Book to the university sector, a public asset estimated by the Conservatives to be worth £380 million per year if kept in public hands.[31] We include the total annual equivalent here, though some is likely

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[29] See footnote 25.

[30] For example, if student numbers remain the same, but all universities charge full top-up fees, then the Conservatives would provide 84% of full fee replacement with this public expenditure allocation.

[31] We have not independently verified this costing. However, it appears within a plausible range, given the likely value of outstanding student loans by 2006 and the likely provisions against these loans.

to be tied to capital rather than teaching expenditure (see Conservative Research Department (2004)).

- The Conservatives would also continue to pay out the £1,500 grant that was introduced by Labour in 2004–05, at an estimated cost of £420 million.

Offsetting these costs are the following savings relative to the 2003–04 system:[32]

- The Conservatives would completely remove maintenance loan subsidies, worth around £1 billion per year.

➤ In total, the Conservatives' plans imply additional public expenditure compared with the 2003–04 system of around £1.1 billion per year. The overall cost of the system to the taxpayer would rise to around £7.4 billion per year.[33]

4.4 The Liberal Democrats' proposals

The additional public expenditure implied by the Liberal Democrats' plans relative to the 2003–04 system amounts to:

- Fee replacement of £2.13 billion, less £450 million in fee remissions already in place, amounting to £1.68 billion. This is more than in the Conservatives' plans, above, since the Liberal Democrats assume that all universities would charge the full top-up fees for all courses, and have designed their level of funding to compensate universities fully for this. However, the funding level is based on what university revenue would have been in 2003–04 if top-up fees were charged then, and therefore does not take into account any increases in student numbers since 2003–04.

- Around £560 million in grant expenditure, to cover a £2,000 grant (assuming a cost 33.3% higher than the cost of a £1,500 grant).

➤ In total, the Liberal Democrat plans imply additional public expenditure compared with the 2003–04 system of around £2.2 billion per year. The overall cost of the system to the taxpayer would rise to around £8.5 billion per year.

It should be noted that the Liberal Democrats also plan for an extra £200 million additional spending in Wales, Scotland and Northern Ireland, which would be required by the Barnett Formula rules. These dictate how additional public expenditure in England must be matched in the devolved authorities (sometimes referred to as the Barnett Consequential). However, we consider only the funding implications of changes to English universities and so do not include this cost here.

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[32] The Conservatives argue that they would make savings of £40 million in administrative costs from handing all student loans to the private sector. However, it is not clear to us that this is not already included in the £1 billion loan subsidy outlined below, so we do not include it as an additional saving.

[33] In order to guarantee full fee replacement, these figures would rise to £1.4 billion and £7.7 billion respectively.

Table 4.1. Taxpayer costs of Labour, Conservative and Liberal Democrat proposals (relative to 2003–04 baseline, in 2006–07 prices)

2003–04 base system	
Public funding for teaching at English universities	£4,820m[a]
Fee remission	£450m[b]
Maintenance loan subsidies	£1,030m[c]
Total taxpayer cost of 2003–04 system in 2006–07	***£6,300m***
Costs of the Labour plans	
New fee loan subsidies	£800m[d]
Increased maintenance loan subsidies	£70m[e]
Introduction of £1,500 grant	£420m[f]
Net additional costs of the Labour plans	***£1,290m***
Total costs of Labour system in 2006–07	***£7,590m***
Costs of the Conservative plans	
Additional allocation towards fee replacement	£1,350m[g]
Introduction of £1,500 grant	£420m[h]
Gifting the Student Loan Book	£380m[i]
Savings from the Conservative plans	
Scrapping maintenance loan subsidies	–£1,030m[j]
Net additional costs of the Conservative plans	***£1,120m***
Total costs of Conservative system in 2006–07	***£7,420m***
Costs of the Liberal Democrat plans	
Additional allocation towards fee replacement	£1,680m[k]
Introduction of £2,000 grant	£560m[l]
Net additional costs of the Liberal Democrat plans	***£2,240m***
Total costs of Liberal Democrat system in 2006–07	***£8,540m***

Note: Figures are for public spending per year and are rounded to nearest £10 million.

a. Total taxpayer contribution in 2006–07 is based on Higher Education Funding Council for England (HEFCE) grant letter 2005, which allocates £4,817 million to HEFCE and the Teacher Training Agency (TTA) in recurrent resources in 2006–07 (i.e. does not include research or capital funding).

b. HEFCE grant letter 2005 shows expected public contribution to fees in 2005–06 was £434 million; we have uprated this to £450 million in 2006–07 prices (in line with inflation of 2.5%).

c. Based on student loans Resource Account Budget (RAB) charge of £1,026 million in 2005–06 from Department for Education and Skills (2004d, p. 26).

d. Costs estimated by Liberal Democrats at £800 million. The Liberal Democrats assume that all universities charge full top-up fees, resulting in total fee revenue of £2.13 billion. They assume 90% take-up of loans, and an average 40% subsidy, resulting in £770 million in fee loan subsidy. They estimate an additional £30 million for debt write-off after 25 years. See Appendix B for more details.

e. DfES estimate; see Appendix B.

f. Cost of £1,500 grant estimated by DfES at £420 million. Note that conversion of fee remission into Single Combined HE Grant, maximum value £2,700, is revenue-neutral compared with the 2003–04 system, so is not included here.

g. Authors' calculation based on Conservative estimate, source below. This figure matches the £1.8 billion estimated revenue that would have been raised in 2003–04 if 75% of universities charged £3,000 and 25% charged just the basic fee, which was £1,125 in 2003–04, as set out in Department for Education and Skills (2004b, point 50), less approximately £450 million in fee remission which is already paid in the 2003–04 system (see note b).

h. Conservative estimate, source below. Conservative estimate of £420 million matches DfES costing (see note f).

i. Conservative estimate, source below.

j. Matches student loans Resource Account Budget (RAB) charge of £1,026 million in 2005–06 from Department for Education and Skills (2004d, p. 26).

Notes to Table 4.1 continue on next page.

Notes to Table 4.1 continued

k. Provided by Liberal Democrats, source below. Calculated on same basis as Conservative allocation (see note g) but on the assumption that 100% of universities charged £3,000 as set out in Department for Education and Skills (2004b, point 50), less £450 million fee remission.

l. IFS calculation based on scaled-up cost of £1,500 grant (see note f): £560 million = 1.33333×£420 million.

Sources:

Conservatives: Conservative Research Department (2004). Key figures set out in Appendix B.

Labour: DfES costings given to IFS in January 2004 and set out in Appendix B.

Liberal Democrats: Liberal Democrats (2004) and private correspondence with Liberal Democrats. See Appendix B.

Summarising the differences between the parties, this suggests that Labour's and the Conservatives' plans would cost a similar amount to the taxpayer, at around £1.1 billion per year under the Conservatives and around £1.3 billion under Labour, whilst the Liberal Democrats' plans would cost about £1 billion more than this.

4.5   A circular flow of payments

Another way of understanding how the parties' systems differ is to consider flows of payments from taxpayers and other parties to universities, students and graduates. We first set out the implied payments to and from universities, students, taxpayers and graduates of each of the systems (in Tables 4.2–4.5), before going on to examine the differences between them (Table 4.6).

Under the base system, set out in Table 4.2, universities are net gainers, both from direct taxpayer subsidies and fee remissions (around £5.3 billion) and from direct student contributions (around £500 million). Graduates also gain, from subsidies on maintenance loans, worth around £1 billion per year (these subsidies compare with total maintenance loan borrowing of around £2.7 billion each year, not shown on this table).

Taxpayers contribute the most to these gains, at around £6.3 billion, whilst student contributions make up just a small part of the total.

Table 4.2. Flows of funding between universities, students, taxpayers and graduates under the 2003–04 (base) system

Payment to → Payment from ↓	**Universities**	**Students**	**Taxpayers**	**Graduates**	*Gross payments from*
Universities	-	-	-	-	-
Students	£520m[a]	-	-	-	*£520m*
Taxpayers	£5,270m[b]	-	-	£1,030m[c]	*£6,300m*
Graduates	-	-	-	-	-
Gross payments to	*£5,790m*	-	-	*£1,030m*	
Net payments to	**+£5,790m**	**−£520m**	**−£6,300m**	**+£1,030m**	

Notes: Figures rounded to nearest £10 million and in 2006–07 prices.

a. Based on Higher Education Funding Council for England (HEFCE) grant letter 2005. Expected student contribution to fees in 2005–06 was £508 million; uprated to £520 million in 2006–07 prices (in line with inflation of 2.5%).

b. Based on taxpayer funding to English universities only, and considers only funding for teaching, not capital or research. Total taxpayer contribution in 2006–07 (if the 2003–04 system were still in place) is based on HEFCE grant letter 2005, which allocates £4,817 million to HEFCE and the Teacher Training Agency in recurrent resources in 2006–07 (i.e. does not include research or capital funding); in addition, the expected public contribution to fees in 2005–06 was £434 million; we have uprated this to £450 million in 2006–07 prices (in line with inflation of 2.5%).

c. Cost of maintenance loan subsidy (see note c to Table 4.1).

Table 4.3. Flows of funding between universities, students, taxpayers and graduates under Labour's system

Payment to → Payment from ↓	Universities	Students	Taxpayers	Graduates	*Gross payments from*
Universities	-	£70m[a]	-	-	*£70m*
Students	-	-	-	-	*-*
Taxpayers	£4,820m[b]	£870m[c]	-	£1,900m[d]	*£7,590m*
Graduates	£2,130m[e]	-	-	-	*£2,130m*
Gross payments to	*£6,950m*	*£940m*	*-*	*£1,900m*	
Net payments to	**+£6,880m**	**+£940m**	**−£7,590m**	**−£230m**	

Notes: Figures rounded to nearest £10 million and in 2006–07 prices.
a. Cost of bursaries estimated at £300×0.33333×720,000 = £72 million, based on assumptions that all universities charge the full top-up and that one-third of students assessed for fees, or around 240,000, are eligible.
b. Total taxpayer contribution in 2006–07 of £4,817 million (as in note a to Table 4.1).
c. £420 million cost of £1,500 grant (see note f to Table 4.1), plus £450 million value of fee remission (see note b to Table 4.1) to be converted into grant.
d. Value of maintenance loan subsidy at £1,030 million (see note c to Table 4.1), plus estimated cost of new fee loan subsidies at £800 million and higher maintenance loans at £70 million.
e. Fees payable to universities if 100% charge full top-up, calculated on the same basis as note k of Table 4.1 but without subtracting fee remission.

The flows of funds implied by Labour's proposed system are set out in Table 4.3. Universities again are net gainers in this system, but this time their income is made up of contributions from graduates and taxpayers rather than students and taxpayers, since all fees are now deferred. Students are also net gainers from this system, due to new bursaries and grants and the conversion of fee remissions into grants.

Graduates become net payers into this system, since they must now pay up to £2.1 billion in deferred fees (based on the assumption that all universities charge the full top-up). The taxpayer contribution to this system is around £7.6 billion, comprised of direct payments to universities and payments to students (grants) and graduates (loan subsidies).

Table 4.4. Flows of funding between universities, students, taxpayers and graduates under the Conservatives' system

Payment to → Payment from ↓	Universities	Students	Taxpayers	Graduates	*Gross payments from*
Universities	-	-	-	-	*-*
Students	-	-	-	-	*-*
Taxpayers	£7,000m[a]	£420m[b]	-	-	*£7,420m*
Graduates	-	-	-	-	*-*
Gross payments to	*£7,000m*	*£420m*	*-*	*-*	
Net payments to	**+£7,000m**	**+£420m**	**−£7,420m**	**-**	

Notes: Figures rounded to nearest £10 million and in 2006–07 prices.
a. Total taxpayer contribution in 2006–07 of £4,817 million (as in note a to Table 4.1), plus £1,350 million Conservative additional fee replacement (see note g to Table 4.1), plus £450 million existing fee remission (see note b to Table 4.1) and £380 million per year through gifting of Student Loan Book (see note i to Table 4.1).
b. Based on estimated cost of £1,500 student grant (see note h to Table 4.1).

Table 4.4 shows the flows of funds implied by the Conservative system. Universities are net gainers, but in this system all their payments come directly from the taxpayer. Students gain from the payment of the maintenance grant, but graduates no longer receive maintenance loan subsidies and so do not pay in, nor do they take money out of this system.

Table 4.5 shows that in the Liberal Democrat system, university funding again comes entirely from the taxpayer. Students gain from the payment of the maintenance grant, whilst graduates also receive maintenance loan subsidies; the taxpayer is hence the only net contributor to this system.

Table 4.5. Flows of funding between universities, students, taxpayers and graduates under the Liberal Democrats' system

Payment to → Payment from ↓	Universities	Students	Taxpayers	Graduates	*Gross payments from*
Universities	-	-	-	-	-
Students	-	-	-	-	-
Taxpayers	£6,950m[a]	£560m[b]	-	£1,030m[c]	*£8,540m*
Graduates	-	-	-	-	-
Gross payments to	*£6,950m*	*£560m*	-	*£1,030m*	
Net payments to	**+£6,950m**	**+£560m**	**−£8,540m**	**+£1,030m**	

Notes: Figures rounded to nearest £10 million and in 2006–07 prices.
a. Total taxpayer contribution in 2006–07 of £4,817 million (as in note a to Table 4.1), plus £1,680 million Liberal Democrat additional fee replacement (see note k to Table 4.1), plus £450 million existing fee remission (see note b to Table 4.1).
b. Based on estimated cost of £2,000 student grant (see note l to Table 4.1).
c. Cost of maintenance loan subsidy (see note c to Table 4.1).

Table 4.6 further synthesises the figures from Tables 4.2–4.5, comparing net payments under all three systems with the net payments in the base system (i.e. the bottom rows of Tables 4.2–4.5). This allows us to see more clearly how net flows to universities, taxpayers, graduates and students compare under all three systems. Reading along the rows, we can see that:

- **Universities**' net position would improve under all three systems, by a very similar amount, rising by between £1.1 billion and £1.2 billion under the proposed reforms, from £5.8 billion under the base system to around £6.9–£7 billion. For more on the implications for universities, see Chapter 5.

- In all three parties' proposed systems, the overall **taxpayer** contribution to the costs of HE would rise compared with the base system. Compared with the taxpayer contribution of £6.3 billion under an unchanged 2003–04 system, the Conservatives' proposals would require an additional £1.1 billion, or around £7.4 billion of taxpayer funds, Labour's an additional £1.3 billion, or around £7.6 billion, and the Liberal Democrats' an additional £2.2 billion, or around £8.5 billion (this was also shown in Table 4.1).

- **Students** would also be better off under the proposed systems – by the most under Labour, where their net position would improve by almost £1.5 billion as a result of grants and fee deferral. The position of students would improve the least under the Conservatives. For more on the implications for students, see Chapter 6.

Table 4.6. Net gainers and losers from the three parties' proposals, compared with the 2003–04 system

	Labour	**Conservatives**	**Liberal Democrats**
Universities	+£1,090m	+£1,210m	+£1,160m
Students	+£1,460m	+£940m	+£1,080m
Taxpayers	–£1,290m	–£1,120m	–£2,240m
Graduates	–£1,260m	–£1,030m	-
Sums of gains and losses	*£0*	*£0*	*£0*

Source: Authors' calculations based on Tables 4.2–4.5.

- One major difference between the parties' proposals is the position of **graduates**. They would be asked to contribute more both under Labour and under the Conservatives, by more than £1 billion in each case, but not under the Liberal Democrats. For more on the implications for graduates, see Chapter 7.

Table 4.6 also allows us to see who would pay for any gains within each party's proposed system. Reading down the columns, the table shows that under all three parties, both universities and students are set to gain from the proposals, by varying amounts. However, who pays for these gains differs across the parties:

- Under **Labour**, the gains would be paid for in part by graduates, through higher fees, and in part by the taxpayer, through increased loan subsidies. These loan subsidies benefit lower-earning graduates the most.

- Under the **Conservatives**, the gains would again be paid for in part by graduates, this time through reduced loan subsidies (with their removal affecting the lowest-paid graduates the most), and in part by taxpayers, through bigger payments direct to universities.

- Under the **Liberal Democrats**, all the gains would be paid for by taxpayers, with no additional contributions from graduates at all.

Table 4.7. The balance between public and private contributions to tuition costs under the different systems

	2003–04 base system	**Labour**	**Conservatives**	**Liberal Democrats**
Taxpayers	£5,270m	£5,620m[a]	£6,970m	£6,950m
%	91%	81%	100%	100%
Students	£520m	-	-	-
%	9%	-	-	-
Graduates	-	£1,330m	-	-
%	-	19%	-	-
Total	*£5,790m*	*£6,950m*	*£6,970m*	*£6,950m*

a. This consists of £4,820 million in direct taxpayer contributions and £800 million in fee loan subsidies.
Source: Authors' calculations based on Tables 4.2–4.5.

A final analysis allowed by these figures is of how the student, graduate and taxpayer contributions to HE funding would differ in each of the systems proposed. Here, we only consider contributions to the costs of tuition, although it should also be noted that the reforms also imply equally important changes in the balance between taxpayer and private funding of living costs.

Table 4.7 shows that under the present system, the taxpayer funds 91% of the total cost of tuition, with the remaining 9% paid by students. Under Labour's proposals, the taxpayer's proportion would go down to 81% (taking both direct taxpayer contributions to universities and subsidies to fee loans into account), with the remaining 19% made up by graduate contributions. Both the Liberal Democrats and the Conservatives would increase the public contribution to 100%.

5. What the reforms mean for university funding

All three parties aim to increase university revenues and reverse the decline in funding per head, which has been a feature of HE funding since the early 1970s (see Figures 5.1a and 5.1b). As discussed in Chapter 4 above, each of the parties aims to ensure a similar amount of resources is channelled to universities in 2006–07, though its mode of delivery would differ substantially between the Conservatives and the Liberal Democrats, who would abolish fees, and Labour, who would raise them.

5.1 Funding per head

Whichever party is in power, the planned level of resources would allow funding per head to rise in 2006–07 by around 30% in real terms – bringing funding per head up to approximately £7,600 per year under Labour and the Conservatives and to around £7,700 per year under the Liberal Democrats. This is the same as the value of funding per student seen in the early 1990s, but falls considerably short of the unit funding of £10,000 per year or more seen in the early 1970s.[34]

The relatively small differences in likely funding per head in 2006–07 arise between the three parties for three reasons:

- Universities would have to pay for bursaries under Labour's system but not under the other parties' systems (we estimate this would cost, on average, about £100 per head in forgone teaching funding per student).[35]

- The Conservatives' fee replacement is designed to cover an increase in funding per head equivalent to that generated if three-quarters of universities charged the full top-up, resulting in an average £1,350 per student increase in funding;[36] the Liberal Democrats' fee replacement is designed on the basis that all universities charge the full top-up, and so would lead to an increase of £1,800 in funding per student; the resulting difference between these is around £450 per head.

- The Conservatives would transfer a small addition to funding per head through the gifting of the Student Loan Book (an effective increase of around £300 per head if shared equally amongst all 1.2 million full-time-equivalent students).

(See Notes to Figure 5.1.)

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[34] The figures have been calculated on somewhat different bases pre-1989 and post-1989, so these comparisons are illustrative. See notes to Figure 5.1.

[35] This assumes that universities charging fees of £3,000 will provide low-income students with the minimum mandated bursary of £300. The Office for Fair Access in a press release on 17 March 2005 has estimated that a typical bursary will be around £1,000 (www.offa.org.uk/news/2005/acc_agr.asp).

[36] Calculated as £1,800×0.75 = £1,350.

Figure 5.1a. Public funding per head, plus fee contributions: actual 1948–49 to 2005–06; authors' projections under a Labour government 2006–07 to 2018
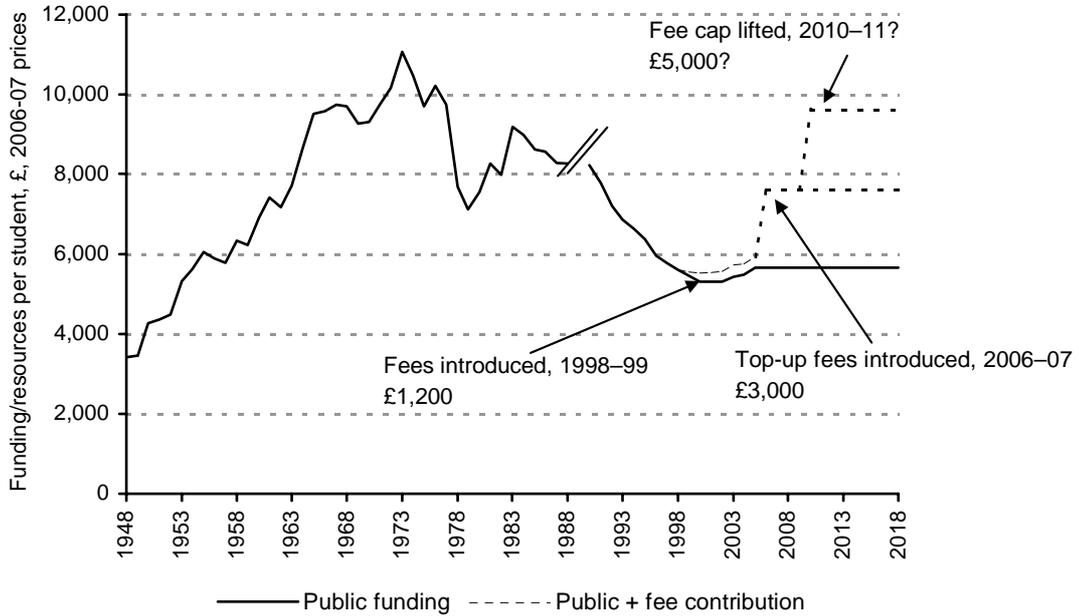

Figure 5.1b. Public funding per head, plus fee contributions: actual 1948–49 to 2005–06; authors' projections under a Conservative or Liberal Democrat government 2006–07 to 2018
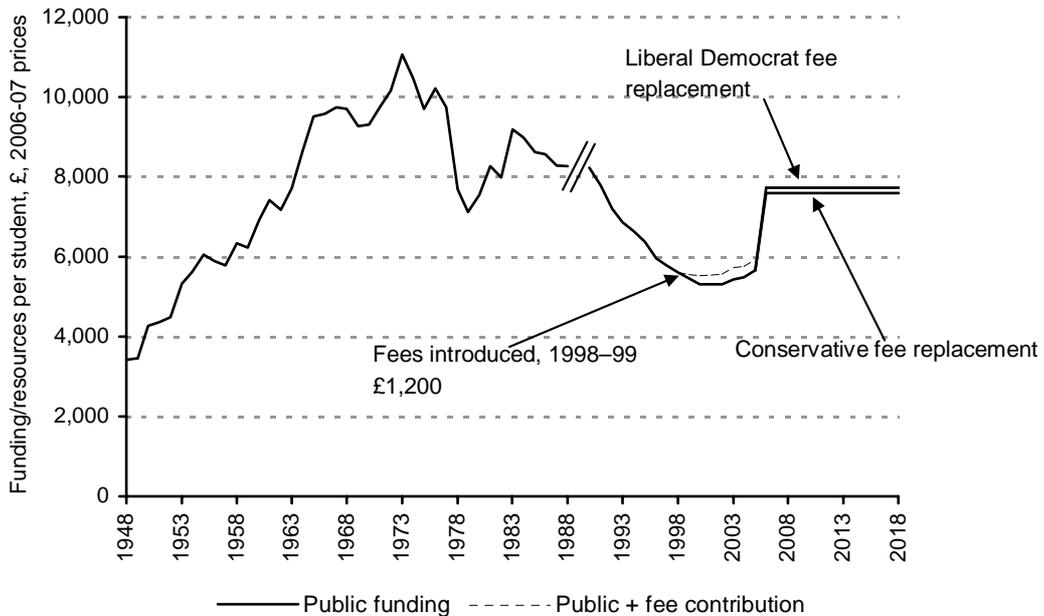
Notes and sources: See next page.

Notes to Figure 5.1:

Pre-1989 public funding is total public funding excluding capital grants per full-time home student. Figures cover Great Britain 1948–50 and United Kingdom 1951 onwards. Former polytechnics not included. Figures are converted to 2006–07 prices using RPI index 1948–55 and GDP deflator thereafter.
Source: Authors' calculations based on Carpentier (2004).

1989–90 to 2005–06 public funding based on DfES series on public funding per full-time-equivalent student in England, including HEFCE and TTA grants; includes the public contribution to fee remission from 1998–99 onwards.
Source: DfES and Universities UK, http://www.universitiesuk.ac.uk/statistics/funding/UnitFundingTrendsChart89-90To03-04.pdf.

1989–90 to 2005–06 public funding + fee contribution based on DfES series on publicly planned funding per full-time-equivalent student in England. This includes block grants from HEFCE and TTA and public and private contributions to tuition fees.
Source: Department for Education and Skills, 2004d, table 2.7.

2006–07 onwards: authors' projections.
Public contribution under Labour assumed to remain constant in real terms, based on Spending Review 2004: 'The Government will maintain per student spending levels in real terms over the 2004 Spending Review period' (HM Treasury, 2004). We have assumed this remains the government position thereafter. We do not, however, take into account the switch from fee remissions to grants, which would reduce the public contribution to tuition but increase the public contribution to student support.
Public contribution under Conservatives: fee replacement assumed at value of £1.8 billion; in addition, the extra £380 million per year diverted to universities through the gifting of the Student Loan Book is also included (although in part some of this is earmarked for capital spending, so our series may overstate the funding per head).
Fee replacement under the Liberal Democrats assumed at £2.13 billion.
Public funding + fee contribution under Labour assumes all universities charge full top-up fees, but that a small proportion of top-up fee income is diverted towards compulsory bursaries rather than to funding per student – equivalent to around £100 per head. This average bursary amount is assumed unchanged under either a £3,000 or £5,000 maximum fee.

Although all parties would increase funding per head by roughly the same amount, the mode of delivery of this increase would be different depending on which party is in power after the election. Figure 5.1a illustrates that additional funding per head would be raised through increased student contributions under Labour (though it should be remembered that these student contributions would also be heavily publicly subsidised through the loan and grant system; see Chapter 4). By contrast, the Conservatives and Liberal Democrats would instead increase public funding, abolishing all student contributions (Figure 5.1b).

It should also be noted that should universities want to raise revenue over and above the amounts guaranteed by these plans – either to increase funding per head further, or to hold it constant if student numbers continued to rise – then under the Liberal Democrats and the Conservatives, the total amount would have to be funded by the taxpayer (unless tuition fees were reintroduced). Under Labour's plans, additional revenues could also come from graduates or students, if parliament agreed to raise the present £3,000 fee cap.[37] Figure 5.1a illustrates that if parliament raised the fee cap to £5,000 in 2010–11,[38] funding per head would rise to almost £10,000 per year. This is perhaps one reason why many universities favour the retention and raising of fees in 2006–07, rather than reverting to a system where the taxpayer is the sole funder for domestic students.[39]

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[37] Although additional taxpayer contributions would still be required to pay for additional fee loan subsidies.

[38] The government has pledged that if it remains in power beyond the next election, the fee cap is guaranteed to remain at £3,000 at least until 2010. This is written into the Higher Education Act 2004, Chapter 8, Part 3, section 26, 2. b) ii).

[39] See, for example, Universities UK (2005), where support for the principle of variable fees is expressed.

5.2 Distributional implications for universities

As well as increasing funding levels to universities, the proposals of each of the parties could have implications for the *distribution* of funding going to different universities. For example:

- Labour's policy to introduce variable fees could mean more funding going to universities charging higher fees. However, it is now expected that all universities will charge the full fee, so this will not be the case.

- Labour's policy requiring universities to pay bursaries to lower-income students if they charge a fee above £2,700 would cost more to universities that admit a larger number of entrants from low-income backgrounds. This was noted in the Coalition of Modern Universities' (CMU) evidence to the Education and Skills Select Committee of 23 February 2005.

- The Conservatives' policy to distribute the proceeds from the gifting of the Student Loan Book to universities only if they can raise matching funds would benefit universities that are well endowed or can otherwise attract matching funds.

5.3 International comparisons

Figure 5.2 sets out some international comparisons, showing how spending per head on higher education (both public and private) differed across a number of different OECD countries in 2001.[40] It shows that the UK was around the middle in terms of spending per head amongst the countries shown here, with higher spending than some European countries, such as Germany, Ireland, France and Italy, but lower spending than Japan, the Scandinavian countries, Australia and the USA. Figure 5.2 also shows the likely size of the increase in the UK in 2006–07, whichever party is in power. It shows that if all other countries' spending remained constant from 2001, the UK would move above Australia and Japan in the international rankings, but would still remain below the Scandinavian countries and the USA.

It is also of interest to take account of differences in overall national incomes in order to get a sense of the relative priority given to higher education spending. Table 5.1 shows spending per student relative to the UK, both in pounds per head (as in Figure 5.2) and once differences in national income per head are controlled for. Although the ranking is altered somewhat after considering differences in national income (with Japan and Norway now on an equal footing with the UK), the USA, Sweden, Australia and Denmark all currently spend more per student as a proportion of GDP per capita than the UK.

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[40] The figures are calculated on a different basis from the ones shown in Figures 5.1a and 5.1b, and include a number of items, such as research and other funding, that are not included in those graphs. See notes to Figure 5.2.

Figure 5.2. Public and private expenditure on higher education per full-time-equivalent student in selected OECD countries, 2001
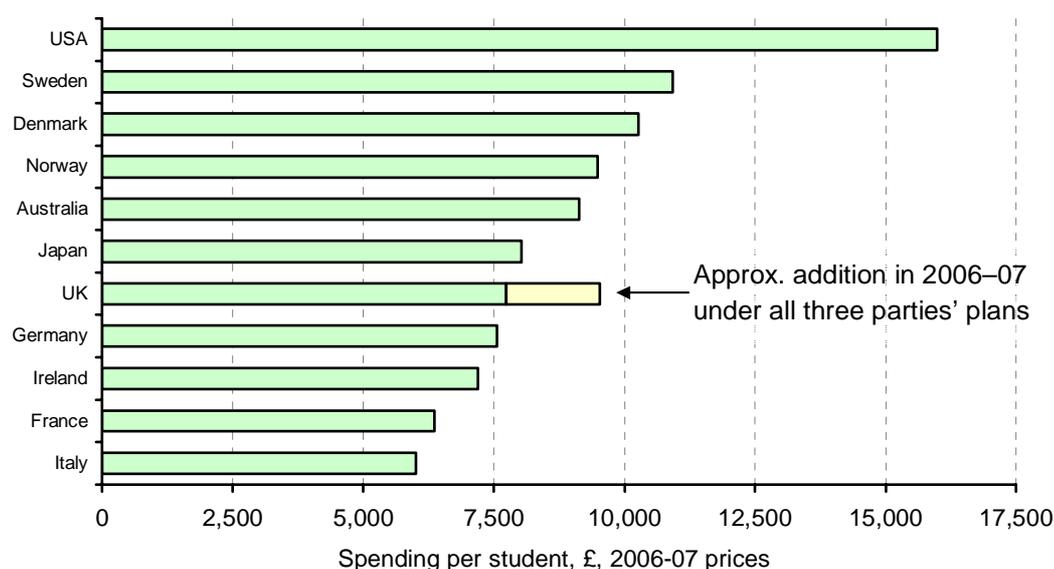
Notes: Covers both public and private spending on educational institutions, including teaching, research and other education services. Figures converted from US$PPP to £ using 2001 UK/US$PPP rate of 0.624, and uprated to 2006–07 prices using the GDP deflator. Addition in 2006–07 assumes all universities charge full top-up fees to all students, and that Wales, Scotland and Northern Ireland see similar increases to England.
Sources: OECD, 2004, table B1.1; authors' calculations.

Table 5.1. Public and private expenditure on higher education per full-time-equivalent student in selected OECD countries, 2001

	£ per student 2006–07 prices		£ per student / per-capita GDP	
		% of UK spend		% of UK spend
Italy	6,003	78	0.34	76
France	6,356	82	0.37	83
Ireland	7,195	93	0.31	69
Germany	7,555	98	0.42	93
UK	**7,734**	**100**	**0.45**	**100**
Japan	8,030	104	0.45	100
Australia	9,126	118	0.50	112
Norway	9,486	123	0.45	100
Denmark	10,271	133	0.50	111
Sweden	10,924	141	0.63	141
USA	15,992	207	0.65	146

Notes: Covers both public and private spending on educational institutions, including teaching, research and other education services. Figures for HE spending and GDP per head converted from US$PPP to £ using 2001 UK/US$PPP rate of 0.624, and uprated to 2006–07 prices using the GDP deflator.
Sources: OECD, 2004, table B1.1; authors' calculations.

6. What the reforms mean for students from 2006–07

6.1 How much support would be available to students?

The maintenance support that is available for students upfront comprises maintenance loans and grants. Figures 6.1, 6.2 and 6.3 show the *maximum* support available for maintenance under the Labour, Conservative and Liberal Democrat proposals respectively.[41]

The graphs show how the total maintenance support available varies depending on the parental income of the student. Grants – both entitlement to and the level of – are means-tested under all three systems. Grants are most generous under Labour's proposed scheme. Furthermore, entitlement covers a higher proportion of students than under the Conservative or Liberal Democrat proposals, as they are tapered to zero at parental income of £33,560 rather than at £22,100, as under the other two systems. Maintenance loan amounts also vary between the systems. Both Labour and the Liberal Democrats propose to retain means-testing of the amount, up to an annual maximum of £4,405 and £4,300 respectively,[42] whilst the Conservatives propose to scrap the means-testing and to make maintenance loans of £5,000 per annum available to all students. The means testing of the Labour maintenance loan,

Figure 6.1. Maximum maintenance support under Labour's proposals

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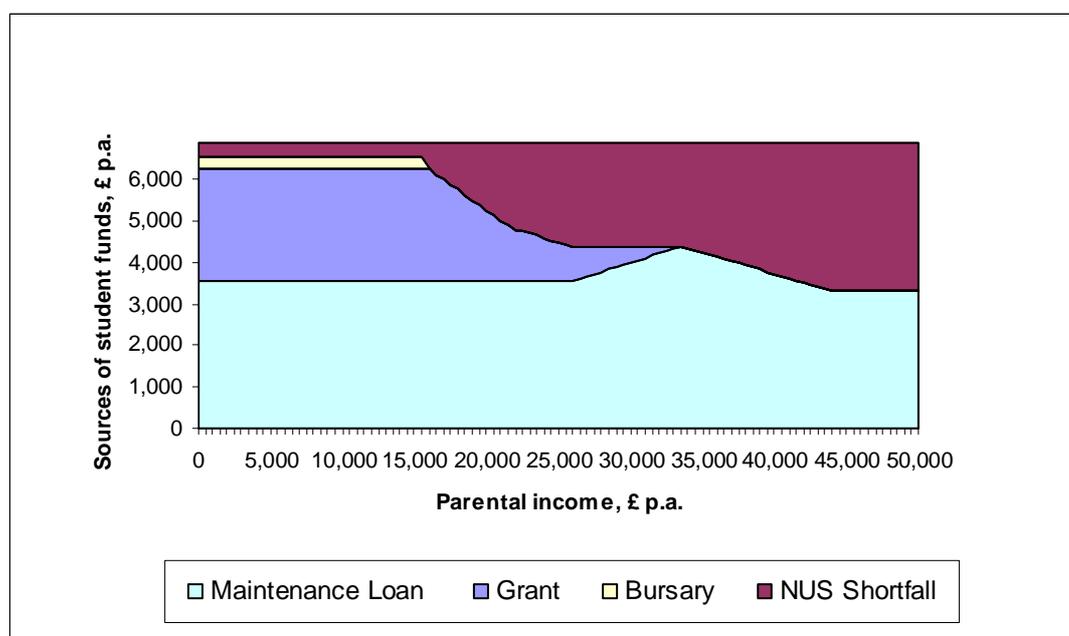
[41] Note that these graphs are based on a student in year 1 or 2 of university, living away from home outside of London and attending a university that charges the maximum amount in top-up fees.

[42] These figures are for a first- or second-year student living away from home outside London.

however, is complex.[43] In reality, relatively few students would be able to obtain this maximum.[44]

Figure 6.2. Maximum maintenance support under the Conservatives' proposals
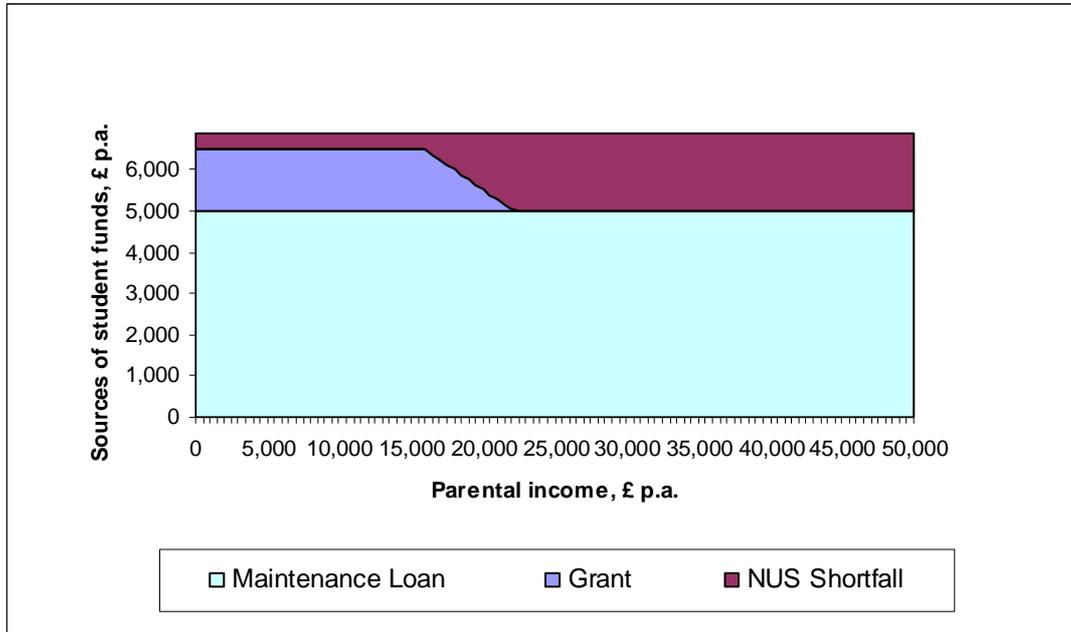

Figure 6.3. Maximum maintenance support under the Liberal Democrats' proposals

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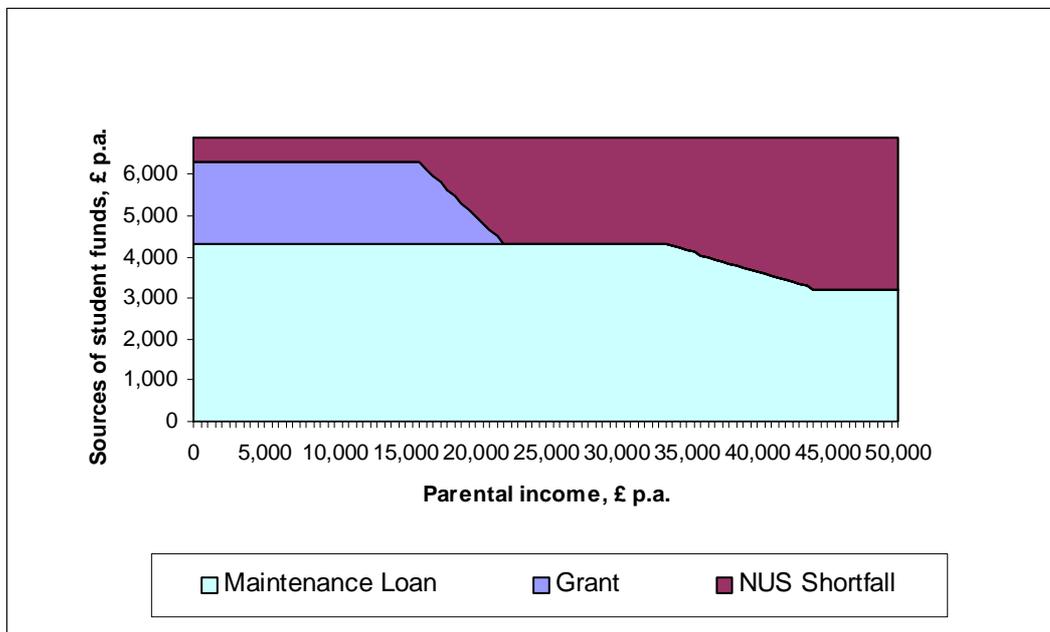
[43] See footnote 19.

[44] In previous work, Dearden, Fitzsimons and Goodman (2004b) analysed ways of reducing the complexity of the Labour proposals.

The graphs also show the amount by which total income from loans and grants falls short of the National Union of Students (NUS) estimate of the basic cost of living for a student living away from home outside of London. This NUS estimate is £6,890 p.a.[45] These shortfalls are based on the assumption that students would not need to spend any of the upfront grant or maintenance loan on fees under the Labour system. This is because *all* students would be entitled to a loan to cover the full cost of tuition, thus rendering the payment of fees entirely deferrable until after graduation. This means that students would not need to use any of the maintenance support to which they would be entitled to pay for fees. Indeed, since the fee loans would be fully subsidised, it would be an irrational economic choice to borrow anything less than the entire amount.[46]

Assuming maximum debt take-up, the ensuing annual shortfalls under all three systems are very similar – between £335 and £590 – for students with parental income of less than £15,970. From this point on, annual shortfalls start to increase under all three systems. Under the Labour and Liberal Democrat systems, the shortfalls gradually increase[47] up to parental income of £44,000 per annum, after which point they are £3,585 p.a. and £3,665 p.a. respectively at all levels of parental income. Under the Conservative system, the shortfall reaches £1,890 at parental income of £22,100, and remains at this level for all income levels higher than this.

The fact that the shortfall is generally lowest[48] under the Conservative system *if students avail themselves of their maximum debt entitlement* means that under the Conservative system, fewer prospective students whose parents will not support them would face the choice of working part-time while studying, postponing HE until they have saved enough to pay for it or borrowing for HE in other more expensive forms. It is also worth noting that all parties assess eligibility on the basis of parental income only, and take no account of other family circumstances, such as family size.

6.2   How much would students borrow?

Maintenance loans

Under the Labour and Liberal Democrat systems, the loan subsidy makes it sensible for students to borrow the maximum amount they are entitled to, regardless of the standard of living they seek to reach. However, because the Conservatives' loans would not be subsidised, it would not always make sense to borrow the maximum, regardless of family income and other circumstances. In order to make debt comparisons between the systems meaningful, we assume that under the Conservative system, students borrow the amount

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[45] See National Union of Students (2003). Note that this figure excludes any fee costs.

[46] Even students who could afford not to take out loans would be well advised to avail themselves of the maximum loans and to invest surplus funds in an interest-bearing account instead, thus making a profit equal to the amount of real interest accrued.

[47] It should be noted that between annual parental income of £26,000 and £33,560, the annual shortfall remains constant at £2,485 p.a. under the Labour system. This is a consequence of the conversion of the £1,200 fee exemption into an upfront grant: maintenance loan amounts were adjusted (non-uniformly) so as to ensure cost neutrality.

[48] The exception is for parental incomes below £15,970, across which the annual shortfall is £55 higher under the Conservative system than under the Labour system.

required to achieve (as far as possible) the same standard of living as a student under the Labour system.[49] Given that each system offers a different level of grant, this means that the amount needed to be raised through borrowing will differ.

Under the Conservative system, only the poorest students would need to borrow the maximum (£5,000 p.a.) in order to be as well off as under the Labour system. Figures 6.1 and 6.3 show the level of borrowing under Labour and the Liberal Democrats respectively across the parental income distribution (the maximum available), and Figure 6.4 shows the level of borrowing under the Conservatives to achieve a standard of living equal to that under the Labour system.

Figure 6.4. Maintenance support under the Conservative proposals (equivalising the amount of maintenance support to that under Labour's system)
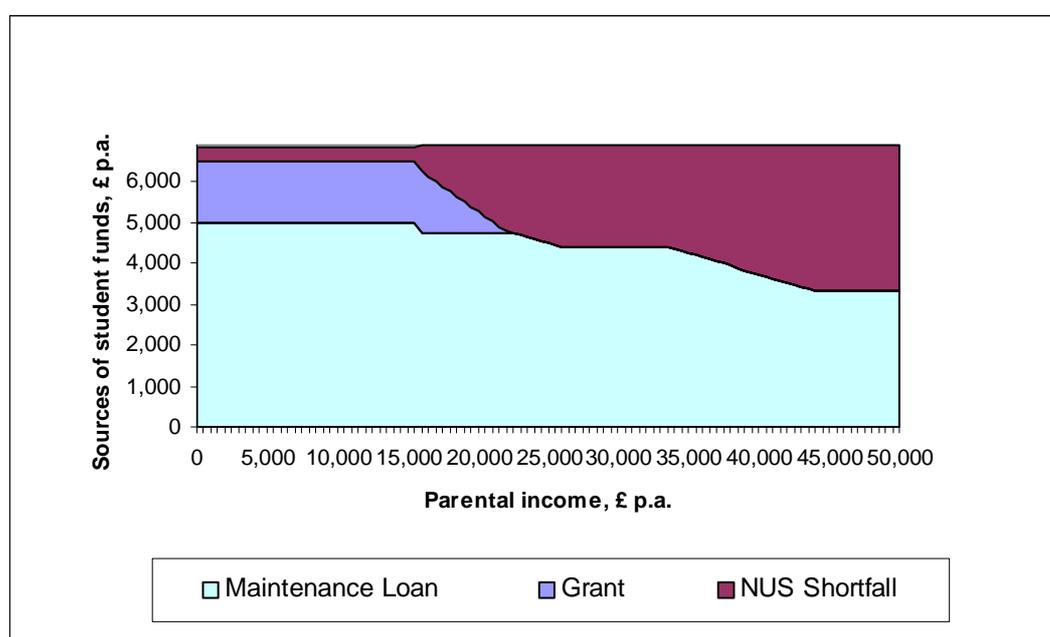
Summarising what these graphs show:

- Students from the *poorest backgrounds* (parental income below £15,970 p.a.) would need to take out the maximum maintenance loans of £5,000 p.a. under the Conservative system, and this would still leave them £55 short per annum compared with the Labour system. This is despite the fact that they would borrow less for maintenance under the Labour system, at £3,555 p.a. The higher borrowing requirement under the Conservative system would come about through having to make up for lower grants (£1,500 p.a. as opposed to £2,700 p.a.) and zero bursaries.

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[49] Maximum borrowing under Labour and the Liberal Democrats, together with grants, would mean that students would generally be less well off under the Liberal Democrat than under the Labour system, by up to £455 p.a. for students whose parental income is between £22,100 and £22,560 p.a. This is because even though loans are more generous across this income range under the Liberal Democrat system, grants are less generous, and the combined effect is to leave students with less to live on under a Liberal Democrat system.

- Students from *low-income backgrounds* (parental income between £15,970 and £22,100) would need to take out higher maintenance loans under the Conservative than under the Labour system, in order to enjoy the same upfront support for living. Again, this is due to the availability of a higher grant under the Labour system. The extra amount that the student would have to borrow for maintenance under the Conservative system would be equivalent to the difference between the Labour grant and the Conservative grant.[50]

- Students from *middle-income backgrounds* (parental income between £22,100 and £33,560) would be entitled to a grant (of up to £1,200 p.a.) under the Labour system only. They would need to take out the equivalent amount in a maintenance loan under the Conservative system, in order to enjoy the same upfront support for living.[51]

- Students from *high-income backgrounds* (parental income above £33,560) would not be entitled to a grant under any of the systems, and upfront maintenance support for these students would come entirely in the form of maintenance loans. Borrowing the same amount in maintenance loans under both the Labour and Conservative systems would endow them with the same upfront living support.

Total debt on graduation

Figure 6.5 shows total expected debt upon graduation, based on the borrowing for maintenance set out above and assuming that there would be full take-up of fee loans under

Figure 6.5. Total debt on graduation

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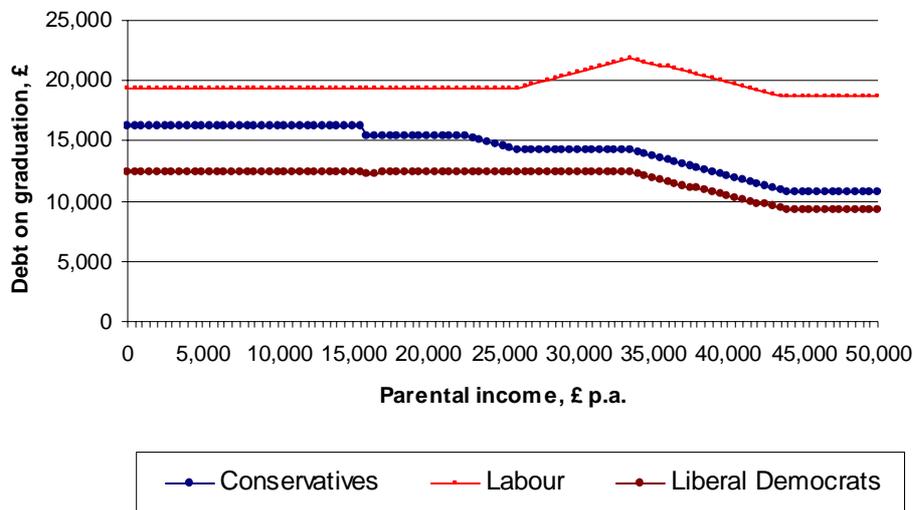
[50] For example, a student whose parental income is £20,000 would be entitled to a grant of £1,714 and a maintenance loan of £3,555 under the Labour system, leaving him/her with total upfront funds of £5,269 for living costs. In order to have this amount for living costs under the Conservative system, £4,755 would have to be borrowed, as his/her grant entitlement would be £514. Total borrowing would thus be £1,200 higher than under the Labour system, i.e. the difference between the values of the two grants.

[51] For example, a student whose parental income is £25,000 would be entitled to a grant of £934 and a maintenance loan of £3,555 under the Labour system, leaving him/her with total upfront funds of £4,489 for living costs. In order to have this amount for living costs under the Conservative system, £4,489 would have to be borrowed. Total borrowing would thus be £934 higher than under the Labour system.

Table 6.1. Expected* levels of debt on graduation

Year of HE entry:	2003–04	2006–07	2006–07	2006–07
Funding system:	As in 2003–04	Labour	Conservative	Liberal Democrat
Student's parental income				
Low (up to £15,970 p.a.)	£12,340	£19,340	£16,230	£12,340
Middle (around £25,000 p.a.)	£12,340	£19,340	£14,580	£12,340
Upper middle (around £35,000 p.a.)	£11,910	£21,440	£13,810	£11,910
High (above £44,000 p.a.)	£9,250	£18,670	£10,730	£9,250

* Expected debt levels are equal to maximum debt levels under the 2003–04, Labour and Liberal Democrat systems. Expected debt levels under the Conservative system are calculated so as to equate the amount of upfront living funds in university to that under the Labour system.

Notes: The figures relate to students living away from home outside London on a three-year course for which the maximum top-up fee is charged. All amounts are expressed in 2006–07 prices. Total debt comprises fee and maintenance loans under the Labour system. It comprises maintenance loans only under all other systems.

Labour's proposed system.[52] Total debt levels upon graduation under the Labour system are therefore the sum of fee loans and maintenance loans; under the Conservative and Liberal Democrat systems, total debt comprises maintenance loans only.

Table 6.1 shows total debt upon graduation for four example graduates, as a function of parental income. Debt would be highest under the Labour system, largely due to the extra £9,000 in fee loans. However, debt repayment would be subsidised, as under the Liberal Democrat proposals. The repayment of debt will vary depending on subsequent graduate earnings. Chapter 7 considers the implications of this debt for graduates.

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[52] The numbers are based on the experience of a graduate having undertaken a three-year degree course, living away from home outside London and, under a Labour system, attending a university in which full top-up fees were charged. Maintenance loan take-up under the Conservative proposals is calculated as in the previous section.

7. What the reforms mean for future graduates

7.1 Introduction

Concerns have been raised that the level of debt students may incur during their studies will create a significant financial burden on them throughout their working lives and that this may affect their HE decision. In this chapter, we analyse the implications of the three parties' funding proposals for graduates. We have seen already (Table 6.1) that depending on the funding system, students are likely to have different debt levels when they graduate. Furthermore, the systems impose different interest rates on debt: Labour and the Liberal Democrats propose a zero real interest rate, whilst the Conservatives propose a positive real interest rate. This has important implications for the amount of debt subsidy paid, the length of time it will take graduates to repay debt, and the amount of outstanding debt in the event of loans being written off after 25 years. We compare these debt-related outcomes for graduates, across all three systems.

But of course all of this depends to a large extent on how graduates fare in the labour market, in terms of employment and earnings. This is for at least two reasons. First, debt repayment is income-contingent. This means that graduates whose income is below the repayment threshold, whether due to being low earners or due to not being in paid employment, will be exempt from making loan repayments in the relevant periods, and may eventually see their debt written off. Second, loan repayments are scheduled at 9% of surplus income above the repayment threshold. This means that high earners will have to repay loans much faster than low earners because they will repay a higher amount in each period.

This points to the importance of considering a range of graduate earnings paths. This is what we undertake in this chapter.[53] We use highly innovative statistical techniques to estimate the complete range of potential earnings for graduates, from which we construct earnings paths for a large number of graduates. In constructing earnings paths, we incorporate two key features of the labour market: first, that people's relative earnings positions may change through time (but that nonetheless there is likely to be some degree of predictability) and second, that graduates may move in and out of employment. Armed with these, we assess how HE debt affects graduates who have different earnings paths, for all parties' funding proposals.

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[53] In previous analysis of HE funding policies, we have focused on the following example graduates: the median graduate, a typical high-flying male graduate, a low-earning female graduate who takes five years out of the labour market, and a female doctor (see Dearden, Fitzsimons and Goodman (2004a)).

7.2 Methodological approach

Before proceeding, we outline in more detail the methodology underlying the construction of lifetime earnings paths for graduates and non-graduates.[54] These earnings paths form the basis of the analysis of graduate debt repayment that we turn to in Section 7.4.

There is in general much uncertainty surrounding future earnings. Throughout the working lifetime, not only are there elements of luck and ability involved in job offers and earnings, but people may also make choices that affect the timing and amount of their earnings, such as opting for careers in which high growth and promotion prospects are obtained partially at the expense of low early earnings, or in which higher earnings are sacrificed for non-pecuniary benefits, job flexibility, job satisfaction and so on. This suggests that the rank of a person's earnings relative to the earnings of his/her peers is likely to change through time. For example, a female graduate's earnings may be such that 50% of her peers have lower earnings than her at age 22, but 20 years later her earnings may have moved up to the top 5%, so that 95% of her peers have lower earnings than her. In more formal terms, one would say that she has moved from the median to the 95th percentile of the female graduate earnings distribution. Indeed, such mobility is not uncommon and would be completely overlooked if one were to assume that an individual always remained at the same point of the earnings distribution (e.g. always at the median).

But how does one account for the degree of mobility through time? One way is to use information on earnings paths for individuals from when they start working through to retirement, based on data that follow the same individuals through time (referred to as 'panel data'). Being based on actual experience, they would fully measure the observed degree of mobility. But such long time series of data for the same individuals are hard to come by. Furthermore, even if they were available, they may be criticised on the grounds of being 'rooted in the past',[55] covering a span of say, the previous 40 years of earnings growth.

An alternative is to use the observed earnings of different individuals, across all ages, in a particular period (referred to as 'cross-section data'). These could be combined so as to form earnings paths for a 'notional' individual – for example, an individual who remains at the median throughout time. However, to do this we need to make strong assumptions; one possible assumption that could be made is that earnings at each age are independent of each other, i.e. that earnings at one age are not informative about earnings at the following age. Alternatively, a common assumption that could be made, and that we have made in our previous work, is that there is no earnings mobility, i.e. that individuals' relative earnings positions amongst their peers remain the same through time. In reality, however, although we know that there is some dependence in people's wages between one age and the next, the assumption of complete immobility is overly restrictive.

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[54] See Appendix C for more technical details of the methodology.

[55] See Hoare (2002). It is important to note that even if recent data are used, they will ignore the impact of potential changes in the structure of earnings distribution over the next 40 years (the typical length of a working lifetime). This is an important limitation of the current analysis, particularly if the policies being examined have effects on the future choices of current graduates.

In order to construct earnings paths that are more representative of reality, we use statistical techniques that allow us to account for dependence in wages between adjacent ages.[56] We draw on information from the Labour Force Survey (LFS), in which we observe earnings at most twice (in adjacent years) for every person. We use this information to construct a measure of the degree of dependence in earnings between two adjacent periods, using what is called a 'copula function'. We do this for all pairs of ages from age 19 (22 for graduates) through age 59, separately by gender and graduate status. This allows us to construct a range of possible earnings that a person may face at each age, with more weight given to earnings that are observed more frequently in the data (e.g. average earnings), compared with those that are observed less frequently (e.g. very high and very low earnings). Putting these together across all ages gives us a joint distribution of earnings over the lifetime, i.e. a range of possible earnings paths, with differing probabilities associated with each.

For every education and gender group, we then take 10,000 random draws ('simulations') from this entire lifetime distribution. One can think of each draw as representing the lifetime earnings path of a particular individual, so this gives us paths for 10,000 individuals. Importantly, by drawing from the distribution of lifetime earnings paths, our simulations are realistic indications of people's movements in the wage distribution over time.

Another important feature of the labour market that we incorporate in constructing these lifetime earnings paths is non-employment. We use the British Household Panel Survey (BHPS) to model employment probabilities at each age (again, separately by education and gender). Our models estimate the probability of leaving employment, a probability of re-entering employment after a spell of non-employment and a re-entry rank in the age–gender earnings distribution following a spell of non-employment. Therefore of the 10,000 individuals, at every age a certain proportion of them (which varies by age, gender, earnings rank and education) will not be employed. In periods in which individuals are not employed, we assign them zero earnings.

Although estimated using different data-sets, our employment and wage models are highly interrelated. This is because we allow the probability of leaving employment to be a function of current wages, and the probability of re-entry into employment and new wages upon re-entry to both be functions of individuals' last employed wages. As a result, our models do very well at matching observed employment rates (see Appendix C).

7.3 Earnings profiles of graduates and non-graduates

In this section, we compare earnings profiles between graduates and non-graduates.[57] We consider two scenarios. First, we present a benchmark analysis that follows the strategy adopted in previous IFS work and virtually all other studies of differences in lifetime earnings between graduates and non-graduates in not allowing for either earnings mobility or periods

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[56] The techniques that we use have seen widespread application in financial economics, but have seen little use in modelling earnings dynamics. A recent exception is Bonhomme and Robin (2004).

[57] None of the qualitative conclusions is affected when we restrict the sample of non-graduates to those holding at least a level 2 qualification. This analysis is available upon request from the authors.

of non-employment over a lifetime. Next, we present our preferred estimates, which account for both mobility and periods of non-employment.

In the traditional approach, the key assumption is that there is *no* earnings mobility through the working lifetime. In other words, we assume that an individual's relative position in the earnings distribution does not change over time. To take an example, this means that a person who is in the top quintile[58] of cross-sectional wages at one age will be in that quintile at all other ages – indeed, they will be in exactly the same position within the top quintile at every age. Thus we estimate the earnings of individuals in the top quintile at every age (by gender and education level) and piece these together to form a lifetime earnings path of a person who will always remain in the top quintile. Furthermore, we do not account for periods of non-employment and thus assume that individuals make positive earnings in all years of their working lifetime.

In our preferred approach, we relax both of these assumptions.[59] In other words, we allow for individuals' relative positions in their gender–education earnings distribution to change through time, and we allow individuals to experience spells of non-employment and therefore to have zero earnings (see Section 7.2 and Appendix C for methodological details). Under this scenario, being in the top quintile refers to the overall lifetime earnings of the individual being in the top quintile,[60] even though the individual's earnings may move across quintiles through their working lifetime.

In what follows, we first assess the difference between (non-discounted)[61] lifetime earnings of graduates and non-graduates by examining the shapes of the simulated distributions and some summary statistics relating to them, under the two different assumptions outlined above. We then look at differences in the possible earnings paths that graduates and non-graduates are likely to experience over the course of their working lifetimes. We assume throughout that non-graduates enter the labour market at 19 and graduates at 22.[62] All earnings are based on LFS data from 1994 to 2002, and we model employment using the BHPS.

Lifetime earnings distributions

Table 7.1 shows the mean, median and standard deviation of total lifetime earnings by education and gender under the two different assumptions about earnings mobility and non-employment. To give a fuller picture of these total lifetime earnings distributions, Figures

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[58] A quintile divides the population into five earnings groups (from lowest to highest earnings) such that 20% of the population is in each group.

[59] An analysis for the case of full employment but allowing for earnings mobility is available from the authors upon request. Virtually all of the difference between the two cases shown in the text is driven by mobility rather than by non-employment.

[60] In the approach that assumes that there is no mobility, being in a particular quintile of the distribution of total lifetime earnings and being in a particular quintile at a given age are equivalent. Once we allow for mobility and non-employment, the position of an individual in the earnings distribution will vary over their lifetime, so the relevant distribution is that of overall lifetime earnings.

[61] An analysis in which earnings in different periods are discounted and summed into net present values is available from the authors upon request. The level of lifetime earnings is sensitive to the discount rate used (although the relative advantage of graduates is unaffected). To avoid complications due to heterogeneity and the choice of the relevant welfare criteria, we do not present discounted values in this report.

[62] Note that we estimate that the median starting salary at age 19 for a female non-graduate is around £8,500 and for a male non-graduate is around £9,700. The median starting salary at age 22 for a female graduate is around £14,300 and for a male graduate is around £14,100 (all in 2006–07 prices).

7.1–7.4 show our estimates of the distributions by education and gender for each of the two models.

Table 7.1. Mean, median and standard deviation of total lifetime earnings (£, 2006–07 prices)

	Graduates	Men Non-graduates	*Difference*	Graduates	Women Non-graduates	*Difference*
No mobility, full employment						
Mean	1,244,400	911,900	*332,500*	868,100	499,300	*368,800*
Median	1,186,300	837,000	*349,400*	842,300	444,900	*397,400*
Standard deviation	519,100	426,900	*92,300*	456,800	324,800	*132,100*
Mobility, employment transitions						
Mean	1,084,900	752,700	*332,200*	766,600	352,200	*414,400*
Median	1,111,700	786,600	*325,100*	754,100	324,100	*430,000*
Standard deviation	206,300	199,300	*6,900*	281,700	217,600	*64,100*

Figure 7.1. Distribution of lifetime earnings for male graduates and non-graduates, not incorporating earnings mobility or non-employment (2006–07 prices)
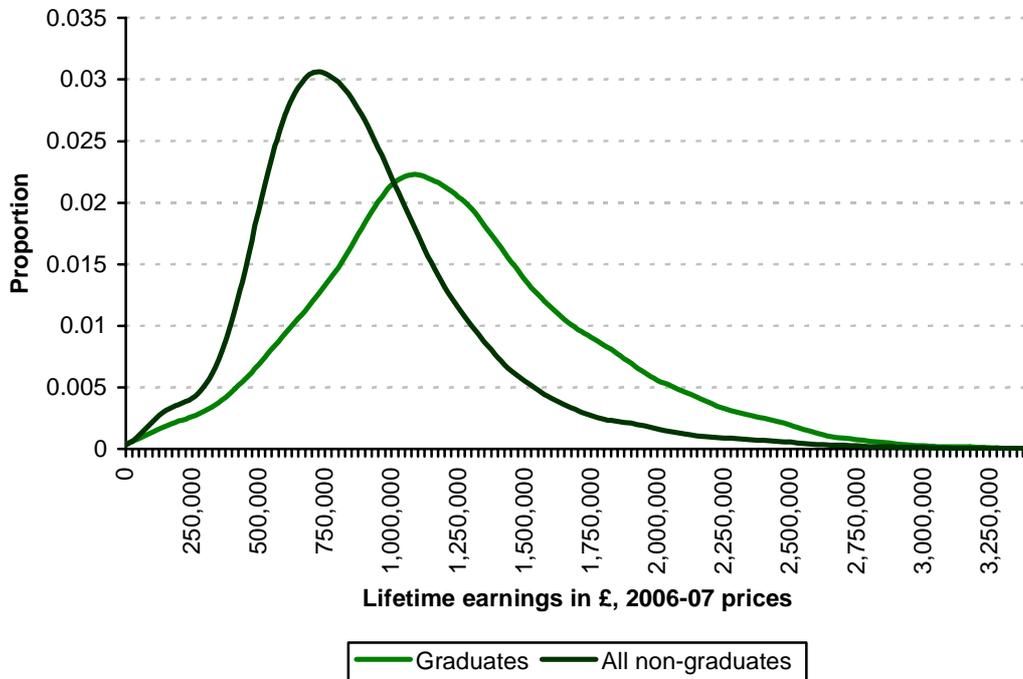
Figure 7.2. Distribution of lifetime earnings for female graduates and non-graduates, not incorporating earnings mobility or non-employment (2006–07 prices)
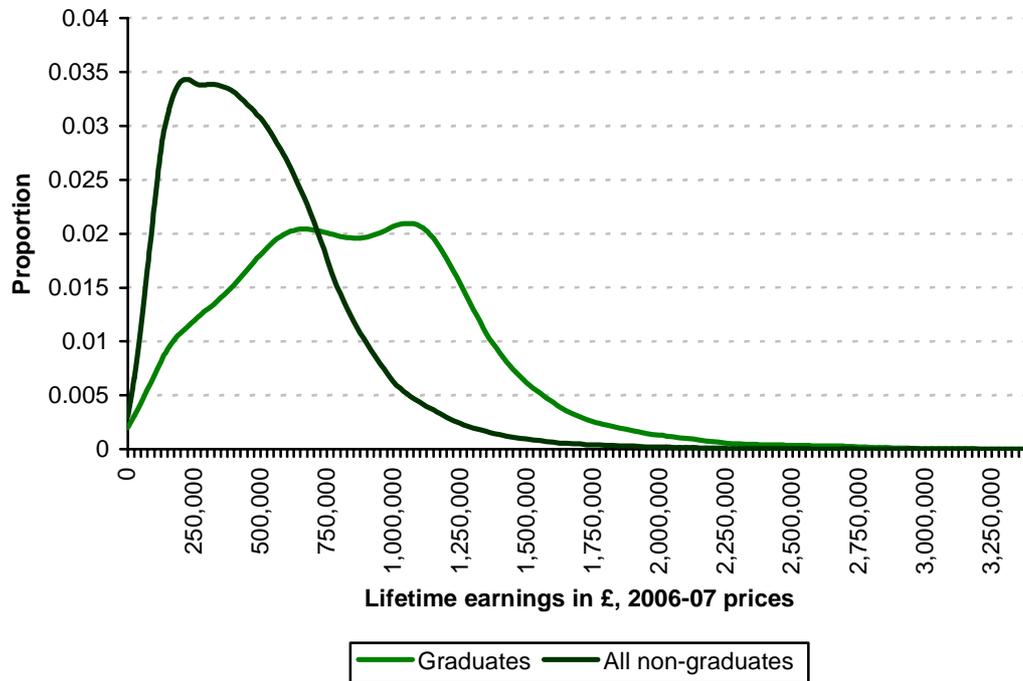

Figure 7.3. Distribution of lifetime earnings for male graduates and non-graduates, incorporating earnings mobility and non-employment (2006–07 prices)
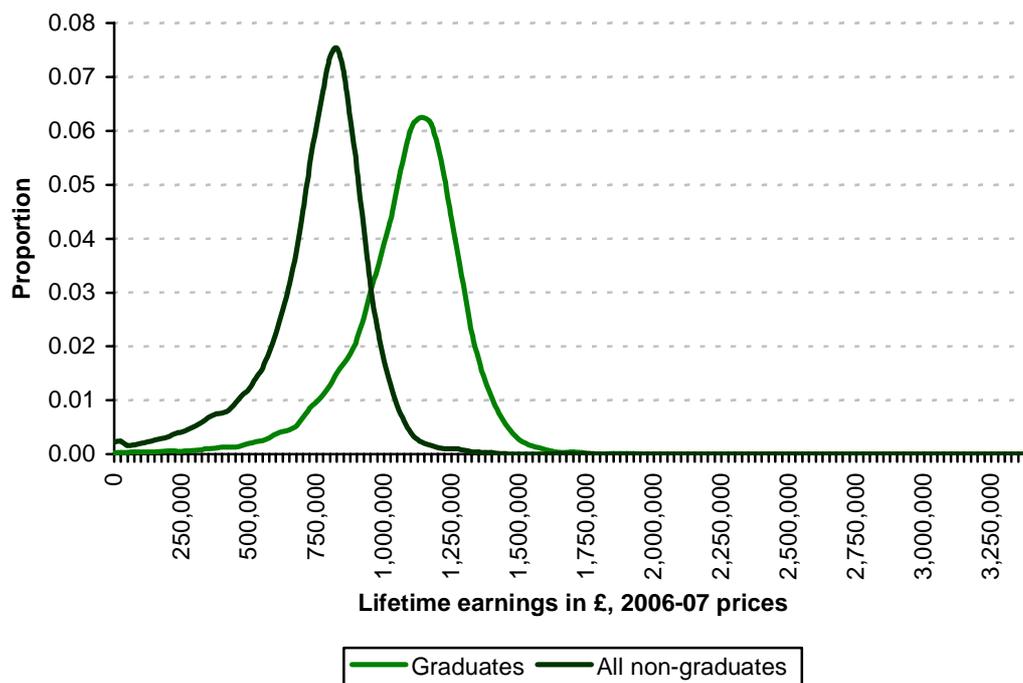
Figure 7.4. Distribution of lifetime earnings for female graduates and non-graduates, incorporating earnings mobility and non-employment (2006–07 prices)
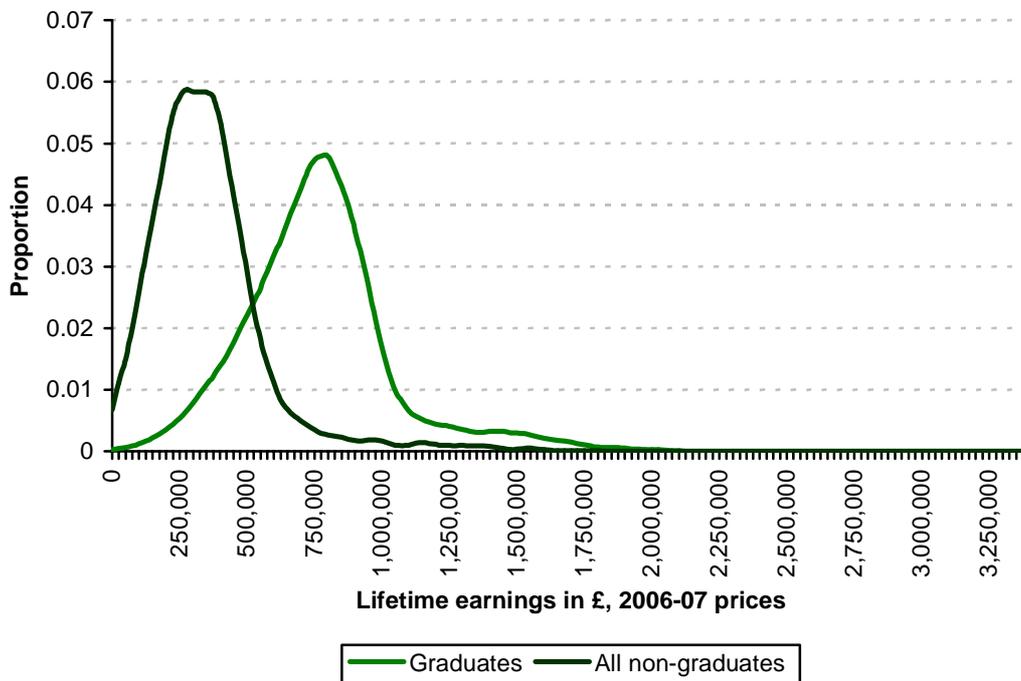
Table 7.1, along with Figures 7.1–7.4, illustrates clearly both the high variability in lifetime earnings outcomes for graduates and non-graduates and the importance of taking into account the effects of earnings mobility and non-employment when comparing lifetime earnings outcomes across education groups.

The first point to note is that the distribution of lifetime earnings outcomes for all groups is wide, regardless of the model used. The standard deviation of total earnings in our preferred model is around £200,000 for men and slightly higher for women. It is even larger when mobility is ignored. In simple terms, this means that graduates and non-graduates experience a wide variability of labour market outcomes. It also means that is extremely difficult to predict an individual's future total earnings with any degree of certainty, without further information about the ability or other unobserved characteristics (which may affect earnings) of a young person entering the labour force.

One summary statistic that is commonly considered is the difference in median total lifetime earnings between graduates and non-graduates. Our results suggest that this difference is around £325,000 for men and £430,000 for women. When we only compare the median (which represents only the exact middle point of the distribution), these numbers are largely unchanged if mobility and employment dynamics are ignored. However, in light of the large variability in possible earnings outcomes, these point estimates should be treated cautiously. Just how informative estimates of earnings differentials at the median are depends on how spread out the distribution of lifetime earnings is – the higher the standard deviation, the more important it is to consider outcomes across the entire distribution.

Moreover, the region of overlap between the two distributions in each of Figures 7.1–7.4 provides direct evidence that indeed some graduates can expect to end up with *lower* lifetime earnings than a substantial fraction of the non-graduate population. The proportionate size of the region of overlap in these graphs is a direct measure of the probability of this outcome being realised. Although the mean of the lifetime earnings distribution for male graduates is £1,084,900 compared with £752,700 for non-graduates, 15% of graduates will end up earning *less* than £900,000 and 18% of non-graduates will end up earning *more* than this amount. Similarly, for women, 15% of graduates will have total lifetime earnings *less* than £500,000 and 16% of non-graduates will earn *more* than £500,000. This is an important point that is often overlooked when analysing the lifetime earnings advantage of graduates over non-graduates in terms of one number only. The amount of overlap in the distributions is reduced when we allow for earnings mobility, for two reasons. The first is that the variance of lifetime earnings is decreased due to mobility. The second is that, at least for men, this effect is more pronounced for non-graduates than graduates.

Table 7.1 gives an indication of the importance of incorporating mobility and time out of work. The standard deviation of total lifetime earnings is 50–150% larger when mobility is ignored. The intuition is simple: the presence of earnings mobility means that individuals are likely to fall in different parts of the earnings distribution over the working life; accounting for spells of non-employment means that individuals are likely to experience zero earnings in at least some periods. Both of these effects serve to reduce the variability in the sum of lifetime earnings across individuals, since the person at the top of the income distribution receiving the highest wage will differ from year to year. This means that lifetime earnings inequality within education groups is substantially lower than standard cross-sectional estimates would lead us to believe.

The level of earnings mobility is hence a direct indicator of the variability in lifetime earnings. One way to give an indication of the level of wage mobility present in the data is to calculate the correlation between the ranks of individuals' wages at adjacent ages. In Appendix C, Figures C.1 and C.2 show how mobility, measured in this way, varies with age. We find that the correlation increases with age, from around 0.8 to 0.95 over the course of a working life for male graduates and from around 0.7 to 0.9 for male non-graduates. For female graduates and non-graduates, the increase is from around 0.75 to 0.95. The fact that these numbers are less than 1 and are lower for male non-graduates than graduates indicates that mobility is indeed important, particularly for male non-graduates compared with male graduates.[63]

Lifetime earnings paths

Figure 7.5 shows the lifetime earnings paths for men, assuming no mobility and no spells of non-employment. Figure 7.6 shows the earnings paths obtained when we relax both of those assumptions. Each graph shows average earnings profiles in the 1st (bottom), 3rd (middle) and

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[63] These numbers refer to estimates of the correlation parameter in the t copula that we use to model mobility. They capture linear dependence in wage rank only, although the model also allows for non-linear wage mobility and differences in mobility in different parts of the distribution. See Appendix C for details.

Figure 7.5. Annual earnings profiles for male graduates and non-graduates by quintile, not incorporating earnings mobility or non-employment (2006–07 prices)
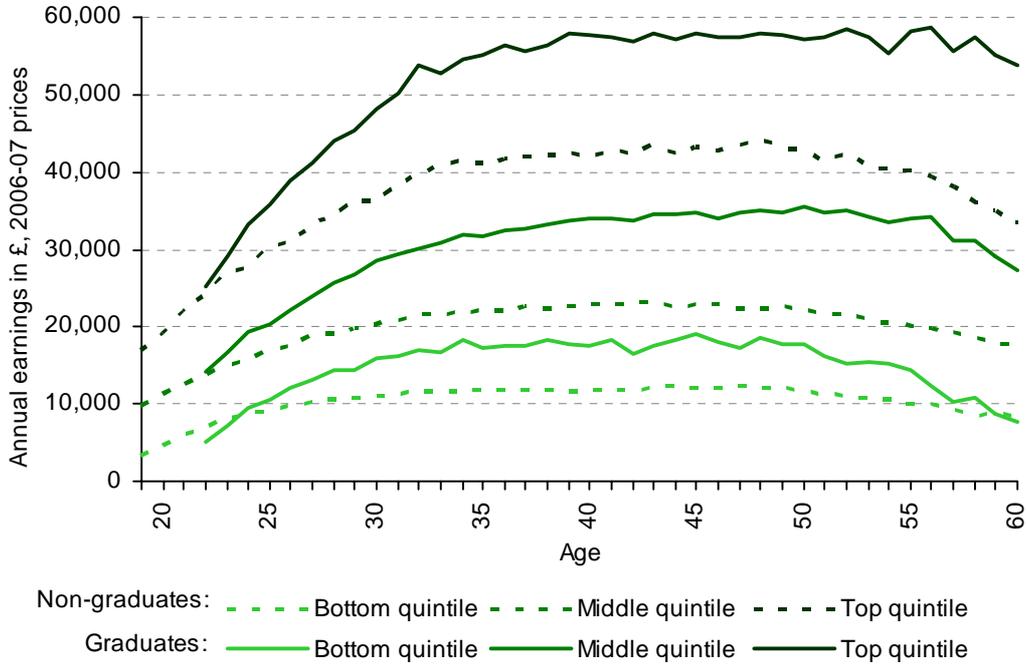
Figure 7.6. Annual earnings profiles for male graduates and non-graduates by quintile, incorporating earnings mobility and non-employment (2006–07 prices)
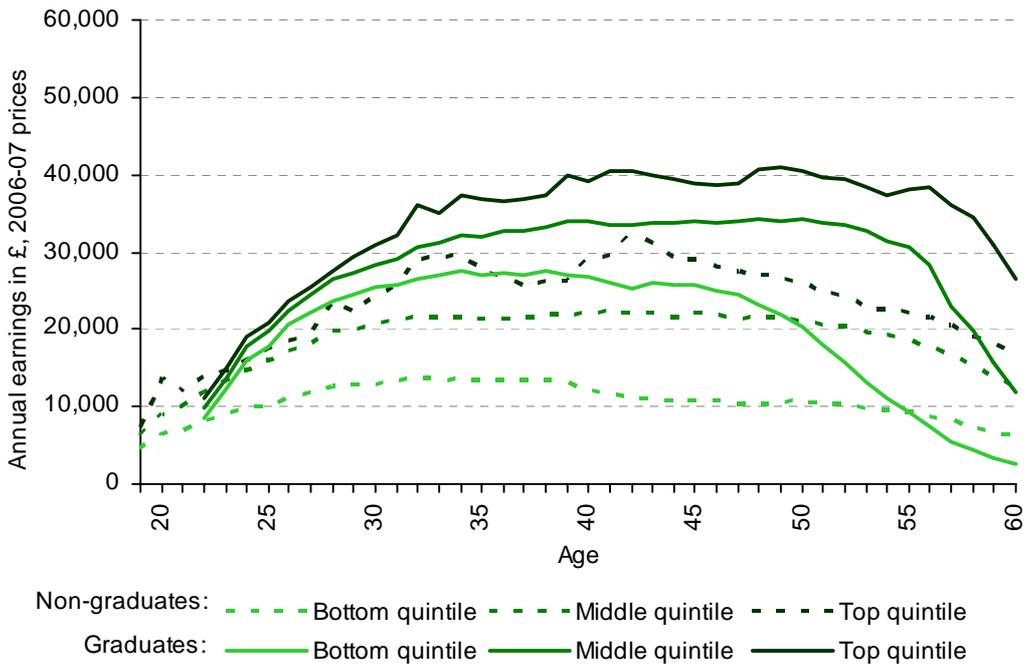
Figure 7.7. Annual earnings profiles for female graduates and non-graduates by quintile, not incorporating earnings mobility or non-employment (2006–07 prices)
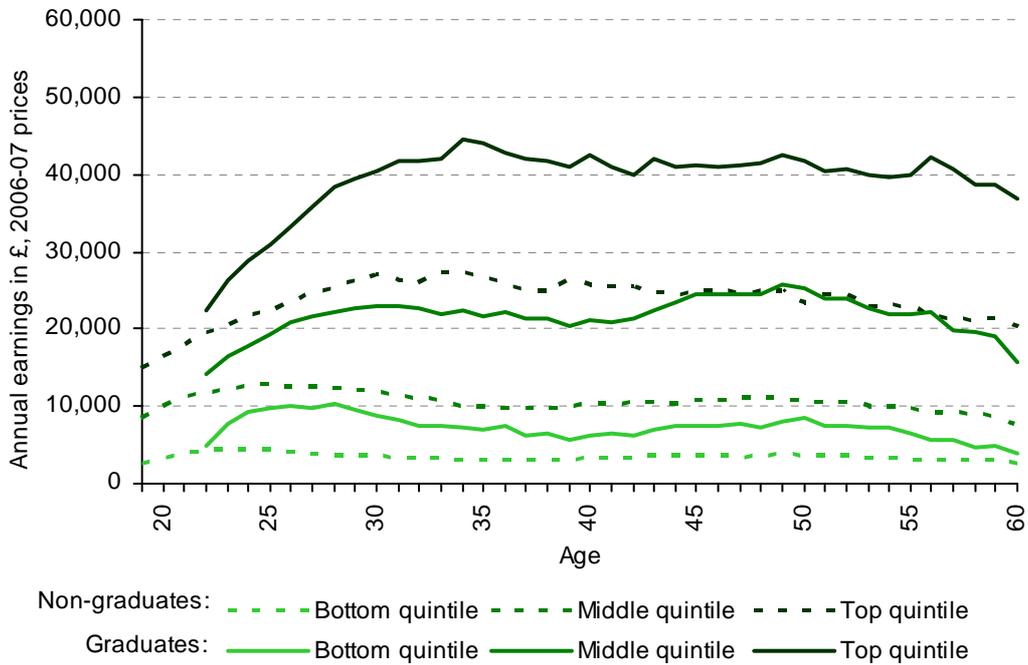

Figure 7.8. Annual earnings profiles for female graduates and non-graduates by quintile, incorporating earnings mobility and non-employment (2006–07 prices)
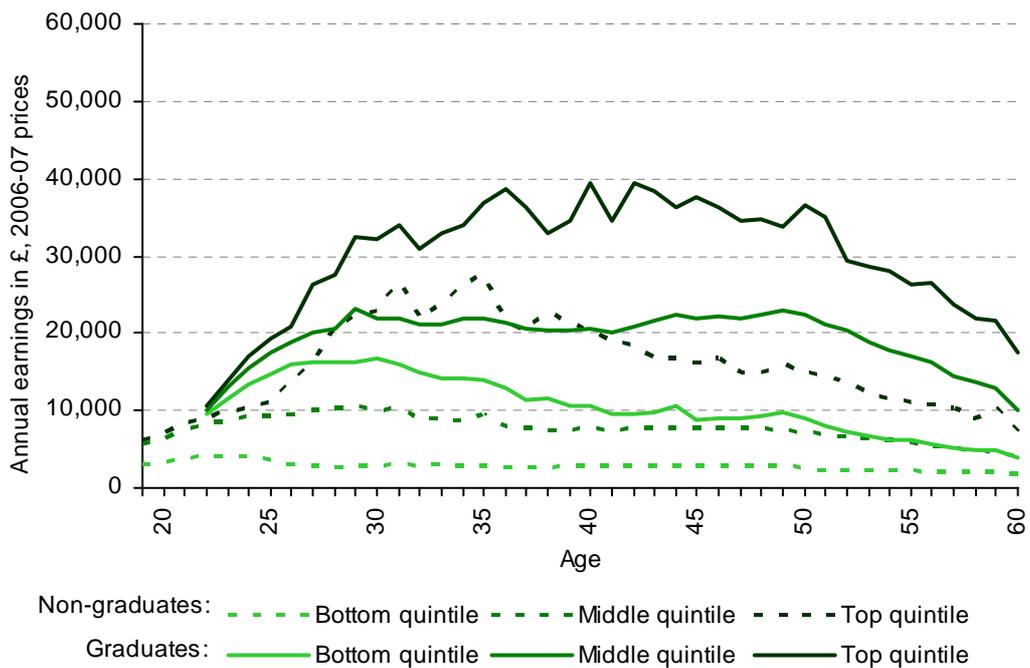
5th (top) quintiles of total lifetime earnings for graduates or non-graduates. Figures 7.7 and 7.8 show the equivalent information for women.

These graphs confirm the results from the analysis of the distribution of total lifetime earnings, that earnings are more unequal when mobility and non-employment are ignored. Here, however, we can explicitly see the role that mobility plays. In the benchmark model, those individuals who end up in the top quintile of total lifetime earnings are those who start off in the top quintile of cross-sectional wages, by definition. However, in the preferred model, with earnings mobility and non-employment, average earnings upon entry into employment are almost exactly the same for individuals who will ultimately end up in different parts of the lifetime earnings distribution. This 'fanning out' of the wage distribution with age is a clear indicator of the difficulty that a young person faces when trying to estimate their projected lifetime earnings, in the absence of further information about their ability relative to other people.

In Figures 7.6 and 7.8, which take into account earnings mobility, we can see clearly that the average earnings path of a non-graduate in the top quintile of the non-graduate lifetime earnings distribution lies almost completely above the average earnings path of a graduate in the bottom quintile of the graduate lifetime earnings distribution. This reminds us that not all graduates will earn more over the course of their working life than all non-graduates.

7.4 Impact of different HE funding policies on graduates across the entire earnings distribution

Introduction

In the rest of this chapter, we focus on the earnings profiles of graduates only. In particular, we ask the question, 'What do these earnings profiles mean for graduates and for the repayment of their debts under the different HE funding schemes being proposed by the three parties?'. To look at this, we compare the implications for students coming from low-, middle-, upper-middle- and high-income families, as outlined in Table 6.1.[64] We have chosen our illustrative income points with a careful eye on Figure 6.5 so as to ensure that the key differences between the different parties' funding policies can be fully brought out. As discussed in Chapter 6, we calculate levels of student debt on graduation on the assumption that students borrow in order to achieve (as far as possible) the same standard of living under each system. In the case of Labour's policy, we assume that they attend a university charging the maximum fee and that they take out the full fee loan to cover this (see Chapter 6).

Because of the means-tested nature of the loan (under Labour and the Liberal Democrats) and grant systems, levels of debt incurred will vary according to family income. Under the Labour and Liberal Democrat systems, the debt faced by students from low- and middle-income families would be the same, but this is not the case for the Conservatives' system. As with Table 6.1, we also look at the example of an individual from a family earning around

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[64] We know from government figures that: around 43% of HE students are from families earning £22,560 per year or less; around 14% of students are from families earning between £22,560 and £33,560 per year; and around 43% are from families earning over £33,560. Source: National Statistics First Release, 2004.

£35,000, as it is students from these medium- to high-income families who would face the greatest debt under Labour's scheme. Our final group is individuals from families earning above £44,000 per year who, under all schemes except the Conservatives', would have reduced access to maintenance loans.[65]

In the analysis presented below, we consider the average outcomes for all graduates in our sample. However, because the funding scheme will have a different impact for every graduate in our sample, we also report the standard deviation of each of the outcomes of interest. The standard deviation is informative as to how much variation is present in the outcome.[66] If the standard deviation is small relative to the mean, this suggests that the distribution of outcomes is tightly clustered around the mean, whereas the opposite is true if the standard deviation is large relative to the mean.

In all of the examples below, we consider six outcomes:

i. **Debt on graduation**, inclusive of the real interest that has accrued on outstanding debt during university under the Conservative system. This has been discussed in Chapter 6.

ii. **Taxpayer subsidy on debt repayments**, i.e. total debt on graduation minus the average discounted present value of graduates' repayments.[67] This is important as it represents a significant cost under both the Labour and Liberal Democrat schemes. There is no taxpayer subsidy of debt under the Conservative funding scheme and so this item is excluded (as well as item iii below) when discussing the Conservative policy.

iii. **Taxpayer subsidy as a percentage of total debt on graduation**, i.e. ii ÷ i.

iv. **Years to pay debt**, i.e. the average number of years taken to repay debt (note that graduates who see their debts written off after 25 years are assigned a value of 25).

v. **Percentage of individuals who do not fully repay their debt within 25 years of graduation and who have it written off**.

vi. **Outstanding debt as a percentage of total debt**, i.e. the average percentage of the original debt that is outstanding after 25 years and is written off.

In all the examples, we also report the average and standard deviation of lifetime earnings, as well as the average and standard deviation of National Insurance and tax liabilities that individuals would pay if the current tax system were in place throughout their working lifetimes.[68] Of course, under all three systems, as well as paying income tax and National Insurance, graduates earning more than £15,000 in 2006–07 prices would face an increase in

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[65] However, as discussed in Chapter 6, despite having access to higher loans, we assume that they would not take out their maximum loan entitlement under the Conservatives' policy.

[66] Approximately 68% of our sample will fall within one standard deviation of the mean, and around 95% of our sample will fall within two standard deviations of the mean.

[67] In all our examples, we assume that the discount rate is 2.5%, i.e. that the government cost of borrowing rate is 2.5% above the inflation rate. If the real rate of borrowing is lower, the amount of subsidy will be lower; if the real rate of borrowing is higher, the amount of subsidy will be higher.

[68] We ignore any benefits or in-work credits in our calculations.

their marginal deduction rate of 9 percentage points until they pay off their loan – the so-called Graduate Contribution Scheme (GCS).[69]

Before we begin our analysis, it is important to re-emphasise that under all three parties' funding systems, whilst a graduate's debt is positive, all graduates on the same salary have to make identical minimum repayments.[70] This is the very nature of an income-contingent loan. The amount of repayment for different annual and weekly earnings is illustrated in Table 7.2. The GCS payment increases average tax rates at all gross salaries above £13,925,[71] but the amount of increase is very modest at most income levels.

Table 7.2. What graduates pay at different earnings levels

Gross income		GCS payments (% of gross income)	
Annual	Weekly	Annual	Weekly
£10,000	£192.31	£0	£0
		(0.0%)	
£15,000	£288.46	£97	£1.87
		(0.6%)	
£20,000	£384.62	£547	£10.52
		(2.7%)	
£25,000	£480.77	£997	£19.17
		(4.0%)	
£30,000	£576.92	£1,447	£27.83
		(4.8%)	
£35,000	£673.08	£1,897	£36.48
		(5.4%)	
£40,000	£769.23	£2,347	£45.13
		(5.9%)	
£50,000	£961.54	£3,247	£62.44
		(6.5%)	

Notes: All figures are in 2006–07 prices. They apply to all graduates who complete their studies in 2009–10 or afterwards.

What differs between the schemes is that under the Labour and Liberal Democrat schemes, once a graduate earns over £13,925, they will reduce the size of their outstanding debt.[72] This is not necessarily the case in the Conservative scheme because outstanding debt, even while the student is at university, would attract a real interest rate of 4%.[73] This means that

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[69] Ignoring the effects of any in-work benefits or credits.

[70] It should be pointed out that under the Conservative system, because a real interest rate is being charged on the debt, it may be in the interest of some graduates, who are certain that they will pay off their loan within 25 years, to repay more than the 9% minimum.

[71] This is the threshold, in 2006–07 prices, at which a graduate entering the labour market in 2009–10 would start paying back debt under all three systems.

[72] In our sample, 35.1% of male graduates and 39.3% of female graduates will earn at or above £13,925 in their first year of work at age 22.

[73] In all our examples below, we assume that under the Conservative funding scheme, banks charge a real interest rate of 4% (6.5% nominal). This is the interest rate assumed by the Conservatives in their case study of some example graduates under their proposed system (see Conservative Research Department (2004)). We look at the implications of relaxing this assumption and allowing the nominal interest rate to reach the nominal ceiling of 8% at the end of this chapter.

somebody borrowing the maximum maintenance loan under the Conservative system would see the value of their outstanding debt fall below the value of their debt on graduation only if they earned at least £21,200[74] in the first year of work. If the real interest rate were 5.5%, they would have to earn just over £24,100[75] in the first year of work.[76] For initial earnings less than these levels, the outstanding debt would increase in the first year.

Analysis for all graduates

We begin by considering the average outcomes for all graduates in our sample. The results for men are reported in Table 7.3 and those for women are in Table 7.4. The assumptions behind the levels of debt for students coming from our four family types, on which all our calculations are based, have already been discussed in Chapter 6.

Lifetime earnings and National Insurance and tax payments

We see from Table 7.3 that for our male graduate sample, mean non-discounted lifetime earnings are just under £1.1 million, but as we have already seen from Section 7.3 and the standard deviation reported in Table 7.3, there is a fair degree of dispersion around this mean. We see from Table 7.4 that mean non-discounted average lifetime earnings are significantly less for female graduates than for male graduates, at just over £765,000, but as we saw in the previous section and as is clear from the standard deviation, there is even greater dispersion around this mean than for male lifetime earnings. This is likely to be due to women taking extended time out of the labour market to have children. This dispersion will have important implications for the effects of different policies across the distribution of lifetime earnings, especially for women.

Tables 7.3 and 7.4 also show how total debt on graduation compares with average lifetime tax and National Insurance (NI) payments. Not surprisingly, overall student debt under all three parties' policies is considerably smaller (by a factor of at least 13 for men and 9 for women) than the expected income tax and NI payments that an 'average' graduate would pay over their working lifetime.[77] The Liberal Democrats have said that they will fund the additional money for higher education by raising the marginal income tax rate for those earning over £100,000 to 49%.[78] The implications of this for graduates have not been taken into account in any of our analysis.[79]

Taxpayer subsidy on debt

The real interest rate that students would be charged for their loans under Labour and the Liberal Democrats is zero. However, the cost of government borrowing to finance these loans is not zero, and this subsidy to graduates represents a cost to the government under both the

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[74] In our sample, 10.7% of male graduates and 6.2% of female graduates earn at or above this salary at age 22.

[75] In our sample, 6.5% of male graduates and 2.3% of female graduates earn at or above this salary at age 22.

[76] Unless, of course, they repaid more than the mandatory 9%.

[77] This ignores any in-work benefits that graduates may become entitled to during their working life.

[78] This increase in the marginal income tax rate is expected to raise £4 billion and not just the £2.2 billion needed to fund their HE plans.

[79] This is because this tax rise would fund more than just the increase in funding for HE and as yet it is unclear where the extra taxpayer money that would be needed under both the Conservative and Labour systems would come from.

Labour and Liberal Democrat schemes (see Chapter 4). In what follows below, we assume that the real government borrowing rate is 2.5% and we use this to calculate the taxpayer subsidy under each of the schemes. Under the Conservative system, there is no taxpayer subsidy, as the loans would not be administered by the government. In the examples we provide below, we assume that banks would charge students a real interest rate of 4.0% (see above). The hope is that this would provide enough income for the banks to cover administrative costs and the outstanding debt that would be written off after 25 years. We consider the issue of outstanding debt after 25 years later.

From Table 7.3, we see that for men under the Labour policy, the average taxpayer subsidy on the loan ranges from 27.4% to 29.1%. For women, the subsidy is substantially higher, ranging from 41.2% to 45.7%. This greater subsidy arises from the fact that lifetime female earnings are lower than lifetime male earnings. One key feature of an income-contingent loan system is that those who earn less obtain a higher taxpayer subsidy.

Under the Liberal Democrat policy, the taxpayer subsidy for men ranges from 21.0% to 23.3% and reflects the fact that under an income-contingent scheme, a smaller debt implies a smaller proportional subsidy, since the sooner the debt is repaid, the lower the cost to the government. For women, the corresponding subsidy ranges from 26.3% to 30.9%.

Time to pay off loan

The big difference between the three parties' policies is the number of years it would take graduates to pay off their student loans. Under the Labour policy, we see from Table 7.3 that it would take men on average between 17 and 18.5 years to pay off their debt, and this has a standard deviation of 2.9 years.[80] Although the Conservative policy would involve less initial debt than under the Labour Party policy, this debt would incur a real rate of interest of 4% per year, even whilst the individual was at university. The effect of this positive real interest rate is that it would take longer for graduates coming from families with incomes below £35,000 to repay their debts under the Conservatives (also implying a higher net present value of repayments for them) than under Labour, despite the smaller initial debt values. By contrast, it would take less time for graduates coming from families with incomes of £35,000 or more to repay their debts under the Conservatives than under Labour, for the same lifetime earnings paths.[81] For all male graduates, there is much larger dispersion around these mean times to pay back the debt under the Conservatives than under the other systems, with the standard deviation ranging from 3.3 to 3.5 years. For men under the Liberal Democrat scheme, the average time to pay back loans ranges from 11.3 to 13.3 years. This is considerably lower than for both the Conservative and Labour schemes.

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[80] These results are almost two years lower than those we found for a median male graduate in Dearden, Fitzsimons and Goodman (2004a). In that report, we found that it would take our example median graduate between 19 and 20 years to pay off the same level of debt. The differences between those results and these lie in the fact that: (a) here we are looking at the average (mean) across the entire population, rather than the median; (b) here our lifetime earnings profiles incorporate mobility and non-employment; and (c) here we assume a higher graduate starting salary than in that analysis.

[81] This assumes that those whose parents have incomes of £35,000 up to £44,000 borrow in the range of £3,305 to £4,255 per year (or less) depending on precise parental income, and that those whose parents have incomes of £44,000 or more borrow £3,305 per year (or less). These are the amounts needed to achieve the same (lower) standard of living as under Labour.

For women, we see in Table 7.4 that graduates from all four parental background groups would take on average between 22 and 23 years to pay off the loans under Labour. Under the Conservative scheme, it would take slightly longer for women coming from families earning less than £25,000 per year, but would take one year less than under Labour for women coming from families earning £44,000 or more.[82] This is because the smaller size of the loan offsets the higher real interest rate for this group.

By comparing the results in Tables 7.3 and 7.4, we see that female graduates under any of the schemes would, on average, take between 3 and 5 years longer to pay off their loans than male graduates with similar debt and family circumstances, because of their different lifetime earnings paths and overall lower lifetime earnings.

Outstanding debt after 25 years

We have seen above that the mean time taken to pay back loans varies considerably between the different schemes. We now move on to consider the proportion of graduates that would not have repaid their debt after 25 years and the mean outstanding debt at 25 years under the three parties' policies. This would be an important cost for banks under the Conservative scheme, and for taxpayers under Labour or the Liberal Democrats.

From Table 7.3, we see that under the Labour policy, the proportion of male graduates that have not paid off the debt within 25 years of graduation, and thus have part of their debt written off, ranges from 3.1% to 4.7%. The amount written off represents between 1.1% and 1.4% of the original debt on graduation. Under the Conservatives' scheme, the proportion of male graduates that do not pay off their debt ranges from 2.9% to 18.8%, and the amount that they fail to repay represents between 2.6% and 9.1% of the original debt on graduation. For men under the Liberal Democrat scheme, the proportion not paying off their debt within 25 years ranges from 0.9% to 1.3%, and this represents between 0.4% and 0.6% of the original debt. This suggests that whilst the Conservative system would involve no taxpayer subsidy, the positive real interest rate on the debt would mean that there would be a substantial rise in the average proportion of male graduates who would not pay off their debt within 25 years compared with the Labour and Liberal Democrat schemes for most debt levels. It is only graduates borrowing less than £3,500 per year who would on average fare better than under the Labour scheme.[83]

For women, we see from Table 7.4 that under the Labour system, between 54.6% and 66.7% would not pay off their debt within 25 years and would have some debt written off. The average outstanding debt as a proportion of the original loan lies between 17.3% and 23%. Under the Conservative scheme, between 50.3% and 81.4% of female graduates would not pay off their loan and the average amount outstanding would represent between 40.2% and 89.7% of the original debt. Under the Liberal Democrat scheme, between 11.2% and 21.9% of female graduates would have outstanding debt at the end of 25 years and the average amount of debt written off would only represent between 3.8% and 6.9% of the original loan amount.

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[82] Again, assuming that they do not borrow more than we have assumed. See footnote 81.

[83] Authors' calculation. A person who borrows exactly £3,500 a year would end up with a debt on graduation of £11,360 assuming a 4% real interest rate.

Table 7.3. Long-term impact of funding policies on entire distribution of male graduates

Lifetime gross earnings	£1,084,900 (£206,300)	Working lifetime income tax and NI		£291,260 (£60,970)
Student from family earning:	*<£15,970*	*£25,000*	*£35,000*	*>£44,000*
Labour policy				
i. Debt on graduation	**£19,340**	**£19,340**	**£21,440**	**£18,670**
ii. Taxpayer subsidy on debt repayments	£5,380 (£1,280)	£5,380 (£1,280)	£6,230 (£1,500)	£5,110 (£1,220)
iii. Taxpayer subsidy as % of total debt (ii÷i)	27.8% (6.6%)	27.8% (6.6%)	29.1% (7.0%)	27.4% (6.5%)
iv. Years to pay debt	17.3 (2.9)	17.3 (2.9)	18.5 (2.9)	17.0 (2.9)
v. Percentage of graduates not paying off debt after 25 years	3.3%	3.3%	4.7%	3.1%
vi. Outstanding debt after 25 years as % of total debt	1.1% (7.9%)	1.1% (7.9%)	1.4% (8.6%)	1.1% (7.7%)
Conservative policy				
i. Debt on graduation	**£16,230**	**£14,580**	**£13,810**	**£10,730**
iv. Years to pay debt	20.9 (3.4)	19.2 (3.5)	18.4 (3.5)	15.2 (3.3)
v. Percentage of graduates not paying off debt after 25 years	18.8%	10.3%	7.9%	2.9%
vi. Outstanding debt after 25 years as % of total debt	9.1% (29.3%)	5.9% (25.7%)	4.9% (24.3%)	2.6% (19.4%)
Liberal Democrat policy				
i. Debt on graduation	**£12,340**	**£12,340**	**£11,910**	**£9,250**
ii. Taxpayer subsidy on debt repayments	£2,870 (£690)	£2,870 (£690)	£2,740 (£660)	£1,940 (£470)
iii. Taxpayer subsidy as % of total debt (ii÷i)	23.3% (5.6%)	23.3% (5.6%)	23.0% (5.5%)	21.0% (5.1%)
iv. Years to pay debt	13.3 (2.7)	13.3 (2.7)	13.0 (2.7)	11.3 (2.5)
v. Percentage of graduates not paying off debt after 25 years	1.3%	1.3%	1.2%	0.9%
vi. Outstanding debt after 25 years as % of total debt	0.6% (5.9%)	0.6% (5.9%)	0.5% (5.8%)	0.4% (5.1%)

Notes:

1. All figures are in 2006–07 prices and apply to graduates from 2009–10.

2. We assume that 2004–05 income tax and National Insurance (NI) rates and thresholds apply and we uprate them to 2006–07 prices.

3. Standard deviations are given in parentheses.

4. We assume a government borrowing rate of 2.5% to calculate the taxpayer subsidy on debt repayments.

5. The level of debt shown is for a student living away from home who has taken a three-year course in a non-London university.

6. Debt on graduation under the Conservative policy includes interest accrued in university, at an annual real rate of 4%.

7. Note that outstanding debt is rounded down, so that an outstanding debt below £5.00 is set to £0.

As we can see, the differences between the three parties' policies are much starker for women, since they typically take considerably more time out of the labour market than men. This leads to a large amount of variability in lifetime earnings paths for women, which exacerbates the effect of different loan amounts and interest rates on the amount of debt

outstanding after 25 years. As we move from the Liberal Democrat scheme to the Labour scheme to the Conservative scheme, the proportion of female graduates with outstanding debt and the average outstanding debt as a percentage of the original debt both increase dramatically.

Table 7.4. Long-term impact of funding policies on entire distribution of female graduates

Lifetime gross earnings	£766,600 (£281,700)	Working lifetime income tax and NI		£199,460 (£101,480)
Student from family earning:	*<£15,970*	*£25,000*	*£35,000*	*>£44,000*
Labour policy				
i. Debt on graduation	**£19,340**	**£19,340**	**£21,440**	**£18,670**
ii. Taxpayer subsidy on debt repayments	£8,180 (£3,370)	£8,180 (£3,370)	£9,800 (£3,830)	£7,690 (£3,220)
iii. Taxpayer subsidy as % of total debt (ii÷i)	42.3% (17.4%)	42.3% (17.4%)	45.7% (17.9%)	41.2% (17.2%)
iv. Years to pay debt	22.2 (4.8)	22.2 (4.8)	22.7 (4.5)	22.0 (4.9)
v. Percentage of graduates not paying off debt after 25 years	58.1%	58.1%	66.7%	54.6%
vi. Outstanding debt after 25 years as % of total debt	18.7% (23.5%)	18.7% (23.5%)	23.0% (24.4%)	17.3% (23.1%)
Conservative policy				
i. Debt on graduation	**£16,230**	**£14,580**	**£13,810**	**£10,730**
iv. Years to pay debt	23.2 (4.3)	22.9 (4.7)	22.6 (4.8)	20.9 (5.7)
v. Percentage of graduates not paying off debt after 25 years	81.4%	76.6%	73.5%	50.3%
vi. Outstanding debt after 25 years as % of total debt	89.7% (65.1%)	75.8% (64.6%)	68.9% (64.0%)	40.2% (58.2%)
Liberal Democrat policy				
i. Debt on graduation	**£12,340**	**£12,340**	**£11,910**	**£9,250**
ii. Taxpayer subsidy on debt repayments	£3,810 (£1,750)	£3,810 (£1,750)	£3,600 (£1,660)	£2,430 (£1,130)
iii. Taxpayer subsidy as % of total debt (ii÷i)	30.9% (14.2%)	30.9% (14.2%)	30.2% (13.9%)	26.3% (12.2%)
iv. Years to pay debt	18.2 (5.6)	18.2 (5.6)	17.9 (5.6)	15.2 (5.5)
v. Percentage of graduates not paying off debt after 25 years	21.9%	21.9%	20.3%	11.2%
vi. Outstanding debt after 25 years as % of total debt	6.9% (17.5%)	6.9% (17.5%)	6.4% (17.0%)	3.8% (14.1%)

Notes: See Notes to Table 7.3.

Analysis by quintile

We now split our samples into quintiles based on non-discounted lifetime earnings. These quintiles correspond to those used in the analysis of Section 7.3. We focus on graduates falling in the bottom and top quintiles of the lifetime earnings distribution and assess what

this implies for average graduate debt repayment within these quintiles under the three policies.

The bottom quintile

In Tables 7.5 and 7.6, we concentrate on men and women in the bottom quintile of the lifetime earnings distribution, for whom average lifetime earnings are around £775,000 for men and around £410,000 for women. Interestingly, for this group, the dispersion around the mean is much larger for men than for women, whilst the opposite was true when we looked at all men and women. However, the difference between the mean for these groups and the mean for the whole graduate distribution is larger for women.

We see that for both men and women, the taxpayer subsidy on debt repayments under Labour and the Liberal Democrats increases for this group. This is a direct result of the income-contingent nature of the repayments and the fact that these graduates have relatively low earnings.

For men in the bottom quintile, the average taxpayer subsidy as a percentage of total debt ranges from 31.7% to 34.1% under the Labour policy, and from 23.5% to 26.3% under the Liberal Democrat policy – a difference from the average across all male graduates of around 5 percentage points for Labour and 2.5 percentage points for the Liberal Democrats.

For women, however, the increase is much more dramatic, reflecting the impact of the greater dispersion that exists in female lifetime earnings. Under the Labour policy, the taxpayer subsidy ranges from 61.0% to 65.6% – a difference of around 20 percentage points from the average across all female graduates. Under the Liberal Democrat policy, the subsidy ranges from 37.9% to 46.4% – a difference of between 10 and 15 percentage points from the average across all female graduates. The result of this is that the actual amount that a female graduate in the bottom quintile contributes towards her higher education (the difference between the loan and the taxpayer subsidy) is very similar under both policies – close to £7,000 – despite very different starting debts.

The impact of the Conservative policy for individuals in the bottom quintile is also very interesting. Men in the bottom two family income groups repay their debt for slightly less time under Labour than under the Conservatives, whilst those in the top group take slightly less time under the Conservatives than under Labour. The same is true for women. However, it is interesting to note that for graduates in this group, the outcomes are very similar for the Labour and Conservative policies.

This is because from the graduate's point of view, the fact that their earnings are not sufficient to prevent their outstanding debt from increasing more and more under the Conservatives does not matter, as it is written off after 25 years. A large majority of graduates in these groups – whether under the Labour or Conservative scheme – will be paying off their debt for close to the full 25 years, and since the amount they pay during this time is identical under all three schemes, the difference to graduates is minimal.

The big difference comes when we look at the average amount – and the variation around this amount – of the outstanding debt under the Conservative scheme, which will impinge on the banks that have funded these types of graduates. For men in these groups, there is relatively

Table 7.5. Long-term impact of funding policies on entire distribution of male graduates, quintile 1 (lowest)

Lifetime gross earnings	£774,710 (£174,080)	Working lifetime income tax and NI		£203,540 (£46,970)
Student from family earning:	*<£15,970*	*£25,000*	*£35,000*	*>£44,000*
Labour policy				
i. Debt on graduation	**£19,340**	**£19,340**	**£21,440**	**£18,670**
ii. Taxpayer subsidy on debt repayments	£6,240 (£2,460)	£6,240 (£2,460)	£7,310 (£2,850)	£5,920 (£2,350)
iii. Taxpayer subsidy as % of total debt (ii÷i)	32.3% (12.7%)	32.3% (12.7%)	34.1% (13.3%)	31.7% (12.6%)
iv. Years to pay debt	19.3 (3.7)	19.3 (3.7)	20.5 (3.4)	18.9 (3.7)
v. Percentage of graduates not paying off debt after 25 years	15.7%	15.7%	21.1%	14.5%
vi. Outstanding debt after 25 years as % of total debt	5.6% (16.9%)	5.6% (16.9%)	6.8% (18.1%)	5.2% (16.6%)
Conservative policy				
i. Debt on graduation	**£16,230**	**£14,580**	**£13,810**	**£10,730**
iv. Years to pay debt	22.9 (3.0)	21.5 (3.7)	20.7 (3.9)	17.3 (4.4)
v. Percentage of graduates not paying off debt after 25 years	49.0%	34.6%	29.0%	13.7%
vi. Outstanding debt after 25 years as % of total debt	33.9% (54.8%)	25.0% (51.4%)	21.7% (49.6%)	12.6% (41.8%)
Liberal Democrat policy				
i. Debt on graduation	**£12,340**	**£12,340**	**£11,910**	**£9,250**
ii. Taxpayer subsidy on debt repayments	£3,250 (£1,330)	£3,250 (£1,330)	£3,090 (£1,270)	£2,170 (£910)
iii. Taxpayer subsidy as % of total debt (ii÷i)	26.3% (10.8%)	26.3% (10.8%)	25.9% (10.7%)	23.5% (9.8%)
iv. Years to pay debt	14.9 (4.0)	14.9 (4.0)	14.6 (4.0)	12.8 (4.0)
v. Percentage of graduates not paying off debt after 25 years	6.3%	6.3%	5.9%	4.4%
vi. Outstanding debt after 25 years as % of total debt	2.8% (13.0%)	2.8% (13.0%)	2.7% (12.8%)	1.9% (11.2%)

Notes: See Notes to Table 7.3.

little outstanding debt at the end of 25 years. Under the Conservative scheme, between 12.6% and 33.9% of the male debt will not be repaid within the 25-year time span. For women, the outstanding debt as a proportion of the initial debt ranges from 106.7% to 156.6%. Female salaries at the bottom end of the graduate lifetime earnings distribution are simply not high enough to allow them to make an inroad into their debt. Whilst this does not adversely affect graduates, because of the way the Graduate Contribution Scheme limits payments at each earnings level, it does affect the banks administering the loans – particularly if individuals who know they have little likelihood of ever paying off these loans opt to take out the full amount of the loan, or if people change their behaviour to take advantage of the loan's conditions. This potentially creates serious adverse selection and moral hazard problems in the market for loans (see Chapter 2). The adverse selection problem is a particularly important

Table 7.6 Long-term impact of funding policies on entire distribution of female graduates, quintile 1 (lowest)

Lifetime gross earnings	£412,970 (£112,980)	Working lifetime income tax and NI		£94,170 (£28,940)
Student from family earning:	*<£15,970*	*£25,000*	*£35,000*	*>£44,000*
Labour policy				
i. Debt on graduation	**£19,340**	**£19,340**	**£21,440**	**£18,670**
ii. Taxpayer subsidy on debt repayments	£12,020 (£3,570)	£12,020 (£3,570)	£14,060 (£3,690)	£11,380 (£3,520)
iii. Taxpayer subsidy as % of total debt (ii÷i)	62.2% (18.4%)	62.2% (18.4%)	65.6% (17.2%)	61.0% (18.8%)
iv. Years to pay debt	24.5 (2.3)	24.5 (2.3)	24.7 (1.9)	24.4 (2.4)
v. Percentage of graduates not paying off debt after 25 years	94.7%	94.7%	96.5%	93.4%
vi. Outstanding debt after 25 years as % of total debt	47.8% (25.5%)	47.8% (25.5%)	52.5% (23.9%)	46.1% (26.0%)
Conservative policy				
i. Debt on graduation	**£16,230**	**£14,580**	**£13,810**	**£10,730**
iv. Years to pay debt	24.8 (1.6)	24.6 (2.1)	24.6 (2.3)	23.9 (3.5)
v. Percentage of graduates not paying off debt after 25 years	98.1%	96.8%	96.1%	88.6%
vi. Outstanding debt after 25 years as % of total debt	156.6% (56.6%)	144.8% (61.1%)	138.6% (63.3%)	106.7% (72.8%)
Liberal Democrat policy				
i. Debt on graduation	**£12,340**	**£12,340**	**£11,910**	**£9,250**
ii. Taxpayer subsidy on debt repayments	£5,720 (£2,660)	£5,720 (£2,660)	£5,390 (£2,570)	£3,510 (£1,950)
iii. Taxpayer subsidy as % of total debt (ii÷i)	46.4% (21.5%)	46.4% (21.5%)	45.2% (21.6%)	37.9% (21.1%)
iv. Years to pay debt	22.3 (4.6)	22.3 (4.6)	22.1 (4.9)	19.4 (6.1)
v. Percentage of graduates not paying off debt after 25 years	67.2%	67.2%	65.0%	44.4%
vi. Outstanding debt after 25 years as % of total debt	27.2% (28.6%)	27.2% (28.6%)	25.8% (28.5%)	17.5% (26.7%)

Notes: See Notes to Table 7.3.

one, and it is one that does not exist in the Liberal Democrat and Labour systems. With the zero real interest rate in these systems, it is in every graduate's interest to take out the maximum loan and, furthermore, to keep repayments to the minimum of 9%. In the Conservative case, students who are likely to pay off their loans in full and who have access to alternative funds to support themselves through university would be much better off minimising their student debt, and would also have the incentive to pay off their loans ahead of the scheduled 'tax' repayments of the income-contingent system. However, it is these very people whom the banks need to borrow the most, and to pay back their debt gradually, in order to ensure that the funding system functions within the imposed interest rates and Graduate Contribution Scheme. To the extent that students can predict their future lifetime earnings, there is a real risk that the type of students who take out the maximum loans under the Conservative scheme are those who are less likely to be able to repay them fully.

The top quintile

The situation for graduates falling in the top quintile of lifetime earnings is summarised in Tables 7.7 and 7.8. Average lifetime earnings for men in the top quintile are £1,328,800, with a standard deviation of just £87,600. This points to there being a lot less dispersion in the top quintile of the male graduate earnings distribution than at the bottom, despite the much higher average earnings. For women, average lifetime earnings are slightly lower, at £1,171,600, but the dispersion around this mean is much larger and probably in part reflects the fact that women are more likely to take breaks from the labour market. Furthermore, the dispersion at the top of the female graduate earnings distribution is much greater than the dispersion at the bottom, the opposite of the situation for men.

Table 7.7. Long-term impact of funding policies on entire distribution of male graduates, quintile 5 (top)

Lifetime gross earnings	£1,328,760 (£87,590)	**Working lifetime income tax and NI**		£367,070 (£34,970)
Student from family earning:	<£15,970	£25,000	£35,000	>£44,000
Labour policy				
i. Debt on graduation	**£19,340**	**£19,340**	**£21,440**	**£18,670**
ii. Taxpayer subsidy on debt repayments	£4,950 (£480)	£4,950 (£480)	£5,700 (£540)	£4,710 (£460)
iii. Taxpayer subsidy as % of total debt (ii÷i)	25.6% (2.5%)	25.6% (2.5%)	26.6% (2.5%)	25.3% (2.5%)
iv. Years to pay debt	15.6 (2.1)	15.6 (2.1)	16.5 (2.2)	15.2 (2.1)
v. Percentage of graduates not paying off debt after 25 years	0%	0%	0%	0%
vi. Outstanding debt after 25 years as % of total debt	0% (0%)	0% (0%)	0% (0%)	0% (0%)
Conservative policy				
i. Debt on graduation	**£16,230**	**£14,580**	**£13,810**	**£10,730**
iv. Years to pay debt	18.3 (3.0)	16.8 (2.8)	16.2 (2.7)	13.5 (2.2)
v. Percentage of graduates not paying off debt after 25 years	0.5%	0%	0%	0%
vi. Outstanding debt after 25 years as % of total debt	0.1% (1.1%)	0% (0%)	0% (0%)	0% (0%)
Liberal Democrat policy				
i. Debt on graduation	**£12,340**	**£12,340**	**£11,910**	**£9,250**
ii. Taxpayer subsidy on debt repayments	£2,680 (£300)	£2,680 (£300)	£2,560 (£290)	£1,830 (£220)
iii. Taxpayer subsidy as % of total debt (ii÷i)	21.8% (2.4%)	21.8% (2.4%)	21.5% (2.4%)	19.7% (2.4%)
iv. Years to pay debt	12.1 (1.7)	12.1 (1.7)	11.9 (1.7)	10.4 (1.6)
v. Percentage of graduates not paying off debt after 25 years	0%	0%	0%	0%
vi. Outstanding debt after 25 years as % of total debt	0% (0%)	0% (0%)	0% (0%)	0% (0%)

Notes: See Notes to Table 7.3.

Table 7.8. Long-term impact of funding policies on entire distribution of female graduates, quintile 5 (top)

Lifetime gross earnings	£1,171,580 (£254,290)	Working lifetime income tax and NI		£351,490 (£112,650)
Student from family earning:	*<£15,970*	*£25,000*	*£35,000*	*>£44,000*
Labour policy				
i. Debt on graduation	**£19,340**	**£19,340**	**£21,440**	**£18,670**
ii. Taxpayer subsidy on debt repayments	£5,160 (£1,120)	£5,160 (£1,120)	£6,010 (£1,430)	£4,910 (£1,050)
iii. Taxpayer subsidy as % of total debt (ii÷i)	26.7% (5.8%)	26.7% (5.8%)	28.0% (6.7%)	26.3% (5.6%)
iv. Years to pay debt	16.5 (5.5)	16.5 (5.5)	17.3 (5.7)	16.2 (5.4)
v. Percentage of graduates not paying off debt after 25 years	4.1%	4.1%	10.5%	2.7%
vi. Outstanding debt after 25 years as % of total debt	0.4% (2.6%)	0.4% (2.6%)	1.1% (4.1%)	0.3% (2.2%)
Conservative policy				
i. Debt on graduation	**£16,230**	**£14,580**	**£13,810**	**£10,730**
iv. Years to pay debt	18.4 (6.1)	17.6 (6.3)	17.1 (6.2)	14.7 (5.7)
v. Percentage of graduates not paying off debt after 25 years	33.9%	24.9%	21.8%	3.3%
vi. Outstanding debt after 25 years as % of total debt	17.4% (30.0%)	10.4% (22.4%)	7.6% (18.6%)	0.8% (6.2%)
Liberal Democrat policy				
i. Debt on graduation	**£12,340**	**£12,340**	**£11,910**	**£9,250**
ii. Taxpayer subsidy on debt repayments	£2,790 (£530)	£2,790 (£530)	£2,660 (£500)	£1,910 (£360)
iii. Taxpayer subsidy as % of total debt (ii÷i)	22.6% (4.3%)	22.6% (4.3%)	22.4% (4.2%)	20.6% (3.8%)
iv. Years to pay debt	12.8 (4.3)	12.8 (4.3)	12.6 (4.2)	10.9 (3.5)
v. Percentage of graduates not paying off debt after 25 years	0.1%	0.1%	0.1%	0.0%
vi. Outstanding debt after 25 years as % of total debt	0% (0.1%)	0% (0.1%)	0% (0%)	0% (0%)

Notes: See Notes to Table 7.3.

This has some interesting policy implications for the funding schemes. We see from Table 7.7 that all men in this group pay off their loans in full, regardless of the scheme in operation. For the Labour and Liberal Democrat schemes, the taxpayer subsidies resulting from the zero real interest rate on outstanding debt are relatively low, at around 25% under Labour and 21% under the Liberal Democrats. Under the Conservative system, these are the people from whom the banks are going to make their money. They just have to hope, first, that these men actually take out the maximum loan rather than rely on alternative sources that do not charge a real interest rate (such as parents) and, second, that they do not opt to pay back their debt faster than at the rate of 9% of earnings above £13,925.

For women, the story is slightly different and again this is directly related to the dispersion around the mean lifetime earnings for this group, which impacts much more heavily on the

Conservatives' scheme than on the Labour or Liberal Democrat schemes. We see from Table 7.8 that the level of taxpayer subsidy for women in the top quintile is marginally higher than that recorded for men and this reflects women's slightly lower lifetime earnings. A very small proportion of women have outstanding debt after 25 years in both the Labour and Liberal Democrat schemes (up to 10% for Labour and virtually none for the Liberal Democrats).

However, under the Conservative scheme, among women borrowing the full amount, around 33% have outstanding debt after 25 years. These are likely to be women who have had time out of the labour market. Again, this potentially creates an adverse selection problem for banks, since women who know that they are going to spend extended time out of the labour market are well advised to take out maximum loans under the Conservative scheme and have them written off after 25 years, whereas those who do not expect to take as much time out have the incentive to borrow less. In addition, there is potentially a problem of moral hazard, if people decide to spend more time out of the labour market than they otherwise would have, in order to avoid paying back their debt. We look at this issue again when we consider women who have taken more than five years out of the labour market.

Additional analysis

Women who have an extended break from the labour market

Table 7.9 provides a corresponding analysis for the sample of female graduates who spend more than five years out of the labour force. Our motivation for considering this group separately is to see whether the different parties' policies impact differently on women who have an extended career break during the first 25 years of their potential working life. In our sample, 21.9% of women spend more than five years out of employment. Of these women, 60.0% fall into the bottom quintile of lifetime earners, 21.3% into the second-lowest quintile, 9.3% into the third, 3.4% into the fourth and 6.2% into the fifth. So this group has strong overlaps with the bottom quintile, but also includes another 40% who are found across the top four quintiles of the earnings distribution. Reflecting this, we see in Table 7.9 that their total earnings are higher and the standard deviation of lifetime earnings for this group is a lot higher than for women who fall into the bottom quintile.

The pattern of results in Table 7.9 for these individuals is very similar to that for women in the bottom quintile of the lifetime earnings distribution shown in Table 7.6, except for slightly higher lifetime earnings, lower taxpayer subsidies and lower proportions of graduates not paying off their debt after 25 years.

However, analysis of this group raises some interesting policy issues. First, our analysis suggests that debt forgiveness determined by a fixed length of time (25 years) rather than accumulated lifetime earnings may be a poorly targeted form of taxpayer subsidy. For some women in this group, it is clear that even though they would not pay off their loan in the first 25 years because of extended time out of work, they would still end up in the top or second lifetime earnings quintile. This suggests that the 25-year write-off might be poorly targeted. Indeed, if one specifically wants to subsidise women taking time out of the labour market to raise children, there are already direct subsidies in place targeting just that (particularly Statutory Maternity Pay). Note that these subsidies are going to increase further over the coming years.

Table 7.9. Impact for women who spend more than five years out of the labour market between ages 22 and 46

Lifetime gross earnings	£530,490 (£253,460)	**Working lifetime income tax and NI**		£135,410 (£87,840)
Student from family earning:	*<£15,970*	*£25,000*	*£35,000*	*>£44,000*
Labour policy				
i. Debt on graduation	**£19,340**	**£19,340**	**£21,440**	**£18,670**
ii. Taxpayer subsidy on debt repayments	£11,470 (£4,030)	£11,470 (£4,030)	£13,340 (£4,390)	£10,880 (£3,910)
iii. Taxpayer subsidy as % of total debt (ii÷i)	59.3% (20.8%)	59.3% (20.8%)	62.2% (20.5%)	58.3% (20.9%)
iv. Years to pay debt	23.4 (2.9)	23.4 (2.9)	23.6 (3.8)	23.3 (4.2)
v. Percentage of graduates not paying off debt after 25 years	82.2%	82.2%	84.5%	80.9%
vi. Outstanding debt after 25 years as % of total debt	42.4% (29.0%)	42.4% (29.0%)	46.4% (28.7%)	41.0% (29.1%)
Conservative policy				
i. Debt on graduation	**£16,230**	**£14,580**	**£13,810**	**£10,730**
iv. Years to pay debt	23.9 (3.4)	23.6 (3.9)	23.5 (4.1)	22.7 (5.1)
v. Percentage of graduates not paying off debt after 25 years	87.9%	86.0%	85.1%	79.4%
vi. Outstanding debt after 25 years as % of total debt	143.3% (73.6%)	133.2% (74.7%)	128.0% (75.1%)	101.3% (76.6%)
Liberal Democrat policy				
i. Debt on graduation	**£12,340**	**£12,340**	**£11,910**	**£9,250**
ii. Taxpayer subsidy on debt repayments	£5,670 (£2,600)	£5,670 (£2,600)	£5,350 (£2,510)	£3,560 (£1,860)
iii. Taxpayer subsidy as % of total debt (ii÷i)	45.9% (21.1%)	45.9% (21.1%)	44.9% (21.0%)	38.5% (20.1%)
iv. Years to pay debt	21.6 (5.5)	21.6 (5.5)	21.4 (5.7)	19.3 (6.4)
v. Percentage of graduates not paying off debt after 25 years	60.6%	60.6%	58.5%	40.5%
vi. Outstanding debt after 25 years as % of total debt	24.8% (28.4%)	24.8% (28.4%)	23.5% (28.2%)	15.9% (26.0%)

Notes: See Notes to Table 7.3.

Because all women in this group spend an extended time out of the labour market, there are going to be high taxpayer subsidies under the Liberal Democrat and Labour schemes, and larger costs to banks under the Conservative scheme. Indeed, we see from Table 7.9 that outstanding debt for this group is well over 100% for most levels of family income under the Conservatives.

Finally, the operation of a time-limited income-contingent repayment scheme in tandem with increased support for having children could create further adverse selection problems for banks under the Conservatives' system, if this results in a larger proportion of women taking extended leave from the labour market. The issue of moral hazard – where people maximise their time out of the labour market in order to minimise their debt repayments – is, however, a problem under all three parties' systems.

Five-year degree courses

One important concern raised by some critics of the different parties' HE funding policies is the level of debt faced by students who undertake courses that are longer than three years – typically, courses such as medicine, dentistry, veterinary science and some engineering courses. In this section, we consider the implications of the situation where an undergraduate course lasts for five years. This means not only that students will have to borrow for maintenance (and fees in the case of Labour's proposals) for an additional two years, but also that they will enter the labour market two years later, which also has implications for lifetime earnings.

Table 7.10. Long-term impact of funding policies on top quintile of male graduates, five-year course

Lifetime gross earnings	£1,303,610 (£87,930)	Working lifetime income tax and NI		£361,900 (£35,110)
Student from family earning:	<£15,970	£25,000	£35,000	>£44,000
Labour policy				
i. Debt on graduation	**£32,450**	**£32,450**	**£33,840**	**£31,950**
ii. Taxpayer subsidy on debt repayments	£10,240 (£830)	£10,240 (£830)	£10,850 (£870)	£10,020 (£810)
iii. Taxpayer subsidy as % of total debt (ii÷i)	31.6% (2.6%)	31.6% (2.6%)	32.1% (2.6%)	31.4% (2.5%)
iv. Years to pay debt	19.3 (2.5)	19.3 (2.5)	19.9 (2.5)	19.1 (2.5)
v. Percentage of graduates not paying off debt after 25 years	0.1%	0.1%	0.5%	0%
vi. Outstanding debt after 25 years as % of total debt	0% (0%)	0% (0%)	0% (0.2%)	0% (0%)
Conservative policy				
i. Debt on graduation	**£28,170**	**£25,290**	**£23,970**	**£18,610**
iv. Years to pay debt	23.9 (2.4)	22.7 (3.1)	21.8 (3.3)	17.3 (3.0)
v. Percentage of graduates not paying off debt after 25 years	64.9%	34.2%	20.3%	0.1%
vi. Outstanding debt after 25 years as % of total debt	19.9% (21.3%)	7.0% (13.1%)	3.4% (9.0%)	0% (0.3%)
Liberal Democrat policy				
i. Debt on graduation	**£20,940**	**£20,940**	**£20,640**	**£18,790**
ii. Taxpayer subsidy on debt repayments	£5,620 (£500)	£5,620 (£500)	£5,510 (£490)	£4,860 (£440)
iii. Taxpayer subsidy as % of total debt (ii÷i)	26.9% (2.4%)	26.9% (2.4%)	26.7% (2.4%)	25.9% (2.3%)
iv. Years to pay debt	14.3 (2.1)	14.3 (2.1)	14.2 (2.1)	13.4 (2.0)
v. Percentage of graduates not paying off debt after 25 years	0%	0%	0%	0%
vi. Outstanding debt after 25 years as % of total debt	0% (0%)	0% (0%)	0% (0%)	0% (0%)

Notes: See Notes to Table 7.3.

Table 7.11. Long-term impact of funding policies on top quintile of female graduates, five-year course

Lifetime gross earnings	£1,147,670 (£254,600)	**Working lifetime income tax and NI**		£346,560 (£112,580)
Student from family earning:	*<£15,970*	*£25,000*	*£35,000*	*>£44,000*
Labour policy				
i. Debt on graduation	**£32,450**	**£32,450**	**£33,840**	**£31,950**
ii. Taxpayer subsidy on debt repayments	£11,450 (£3,400)	£11,450 (£3,400)	£12,300 (£3,780)	£11,150 (£3,270)
iii. Taxpayer subsidy as % of total debt (ii÷i)	35.3% (10.5%)	35.3% (10.5%)	36.4% (11.2%)	34.9% (10.2%)
iv. Years to pay debt	19.0 (5.7)	19.0 (5.7)	19.3 (5.6)	18.9 (5.7)
v. Percentage of graduates not paying off debt after 25 years	35.8%	35.8%	38.5%	34.5%
vi. Outstanding debt after 25 years as % of total debt	6.2% (10.3%)	6.2% (10.3%)	7.5% (11.5%)	5.8% (9.8%)
Conservative policy				
i. Debt on graduation	**£28,170**	**£25,290**	**£23,970**	**£18,610**
iv. Years to pay debt	20.8 (5.1)	19.9 (5.6)	19.5 (5.9)	17.7 (6.7)
v. Percentage of graduates not paying off debt after 25 years	50.1%	46.4%	45.3%	33.7%
vi. Outstanding debt after 25 years as % of total debt	49.9% (56.5%)	40.9% (49.5%)	36.5% (45.7%)	15.6% (27.1%)
Liberal Democrat policy				
i. Debt on graduation	**£20,940**	**£20,940**	**£20,640**	**£18,790**
ii. Taxpayer subsidy on debt repayments	£5,820 (£1,160)	£5,820 (£1,160)	£5,700 (£1,140)	£5,020 (£980)
iii. Taxpayer subsidy as % of total debt (ii÷i)	27.8% (5.6%)	27.8% (5.6%)	27.6% (5.5%)	26.7% (5.2%)
iv. Years to pay debt	15.3 (5.7)	15.3 (5.7)	15.2 (5.7)	14.3 (5.4)
v. Percentage of graduates not paying off debt after 25 years	1.4%	1.4%	1.2%	0.3%
vi. Outstanding debt after 25 years as % of total debt	0.1% (1.4%)	0.1% (1.4%)	0.1% (1.3%)	0% (1.0%)

Notes: See Notes to Table 7.3.

Typically, however, people who undertake these courses enter high-paying jobs and, for example, a typical doctor would follow the path of somebody in the top quintile of the earnings distribution. Hence, in the example below, we calculate the implications for somebody who takes a five-year course and who subsequently falls in the top quintile of the lifetime earnings distribution.[84]

The implications for this group are very similar to our analysis of the top quintile, except that now graduates face larger debts and two years less earnings. We see from Tables 7.10 and 7.11 that this reduces lifetime earnings in this group by just under £30,000 for men and by just over £20,000 for women.

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[84] Results for the entire distribution of men and women are available from the authors upon request.

For both men and women undertaking these five-year courses, the average time to pay off the loan under the Labour scheme is around 19 years. This is longer than for the average male graduate doing a three-year course but shorter than for the average female graduate doing a three-year course. Under the Liberal Democrat scheme, the average time for a male graduate doing a five-year course to repay his debt is 14 years, which is marginally longer than for an average male graduate doing a three-year course. For a woman, the average time to repay the loan is 15 years, which is 3 years shorter than the average when doing a three-year degree course. The proportion of five-year-course men with outstanding debts after 25 years is zero for both the Labour and Liberal Democrat schemes, and ranges between 0 and 64.9% under the Conservatives. It appears that under the Conservative scheme, a person taking out a maximum loan would have trouble paying it back under the terms of the Graduate Contribution Scheme, as the fixed repayment would in many cases not be lower than the interest accruing on the outstanding debt. This again suggests that students undertaking five-year courses would have quite a high chance of a sizeable proportion of their loan being written off by the bank, were they to take out the maximum loan. This is even more so for women because of the greater dispersion of earnings in the top quintile.

This is potentially quite worrying for banks under the Conservative scheme, as the problem is more severe for individuals who undertake five-year courses but who do not achieve lifetime earnings in the top quintile.

Raising the Conservative borrowing interest rate

In all the analysis we have considered above, we have assumed that the real interest rate that would be charged on loans taken out in the Conservative regime would be 4% (6.5% nominal). The Conservatives have said that they would cap the nominal interest rate at 8%.

Table 7.12. Long-term impact of change in interest rate for Conservative policy on entire distribution of male graduates

Lifetime gross earnings	£1,084,900 (£206,300)	Working lifetime income tax and NI		£291,260 (£60,970)
Student from family earning:		*<£15,970*	*£25,000*	*£35,000*	*>£44,000*
Nominal interest rate = 6.5%					
i. Debt on graduation		**£16,230**	**£14,580**	**£13,810**	**£10,730**
iv. Years to pay debt		20.9 (3.4)	19.2 (3.5)	18.4 (3.5)	15.2 (3.3)
v. Percentage of graduates not paying off debt after 25 years		18.8%	10.3%	7.9%	2.9%
vi. Outstanding debt after 25 years as % of total debt		9.1% (29.3%)	5.9% (25.7%)	4.9% (24.3%)	2.6% (19.4%)
Nominal interest rate = 8.0%					
i. Debt on graduation		**£16,710**	**£15,010**	**£14,220**	**£11,050**
iv. Years to pay debt		23.5 (2.7)	22.2 (3.3)	21.4 (3.5)	17.4 (3.7)
v. Percentage of graduates not paying off debt after 25 years		58.7%	36.1%	26.9%	6.8%
vi. Outstanding debt after 25 years as % of total debt		38.8% (55.2%)	22.7% (48.5%)	17.3% (45.1%)	6.2% (33.2%)

Notes: See Notes to Table 7.3.

Table 7.13. Long-term impact of change in interest rate for Conservative policy on entire distribution of female graduates

Lifetime gross earnings	£766,600 (£281,700)	Working lifetime income tax and NI		£199,460 (£101,480)
Student from family earning:	*<£15,970*	*£25,000*	*£35,000*	*>£44,000*
Nominal interest rate = 6.5%				
i. Debt on graduation	**£16,230**	**£14,580**	**£13,810**	**£10,730**
iv. Years to pay debt	23.2 (4.3)	22.9 (4.7)	22.6 (4.8)	20.9 (5.7)
v. Percentage of graduates not paying off debt after 25 years	81.4%	76.6%	73.5%	50.3%
vi. Outstanding debt after 25 years as % of total debt	89.7% (65.1%)	75.8% (64.6%)	68.9% (64.0%)	40.2% (58.2%)
Nominal interest rate = 8.0%				
i. Debt on graduation	**£16,710**	**£15,010**	**£14,220**	**£11,050**
iv. Years to pay debt	23.7 (3.7)	23.4 (4.1)	23.3 (4.3)	22.2 (5.2)
v. Percentage of graduates not paying off debt after 25 years	86.0%	84.0%	82.6%	69.9%
vi. Outstanding debt after 25 years as % of total debt	162.9% (93.1%)	144.6% (93.0%)	135.1% (92.8%)	88.8% (89.9%)

Notes: See Notes to Table 7.3.

The implications of increasing the nominal interest rate from 6.5% to 8% are shown in Tables 7.12 and 7.13 for men and women respectively.

The impact of a higher interest rate under the Conservative scheme would be that a much higher proportion of the fixed graduate contribution would go towards servicing the interest on the debt, and as a result this would necessarily lengthen the time it would take to pay off the debt and would increase the proportion of people not paying off their debt and the average level of debt that is written off after 25 years. In a normal loan scheme, when interest rates rise, so do people's repayments, so that the time horizon for paying off the debt is not affected. But in a system in which the repayment contribution level is fixed, an increase in the interest rate simply increases the length of time taken to pay off the debt (except in cases in which the full debt would not have been repaid within 25 years under the lower interest rate).

An increase in interest rates can only raise revenue for banks from those graduates who would have fully paid off their debts before 25 years under the lower interest rate.

This is nicely illustrated in Tables 7.12 and 7.13, where the time it takes to pay off the loan is increases by between two and three years for men and by about half a year for women (due to the fact that so many were not paying off their debt within 25 years under the lower interest rate).

8. Conclusions

Our report has compared the university funding policies of Labour, the Conservatives and the Liberal Democrats. This is likely to be a key election issue, with important implications for students, graduates, universities and taxpayers. All the proposals aim to increase the level of funding per university student, but the ways in which this will be achieved are very different. This report finds that these differences have important implications for students, future graduates and taxpayers.

We have found that universities and students will be better off under all three parties' plans, relative to the 2003–04 funding system. All three parties promise to increase university funding, raising per-student funds by up to 30% in real terms for new students from 2006–07. At the same time, students will no longer have to pay upfront for tuition fees under any party, and will gain from grants, which would be highest under Labour and lowest under the Conservatives.

Where the parties differ the most is in who *pays* for these gains. Under both the Conservatives and Labour, the bill is shared between graduates and taxpayers. Under Labour's plans, graduates pay £1.3 billion extra (after subsidies) in deferred top-up fees, while taxpayers pay around £1.3 billion more to fund new student fee loans and new grants of up to £2,700 per year.

Under the Conservatives' plans, taxpayers pay an extra £1.1 billion to introduce grants of up to £1,500 per year and to abolish tuition fees. Graduates also pay around £1 billion more, giving up their entitlement to free loans and instead paying market interest rates to private banks for their student debt.

However, under the Liberal Democrats, taxpayers foot the whole bill, at an additional cost to the exchequer of around £2.2 billion per year. This allows them to provide grants to the poorest students of up to £2,000 per year and to abolish tuition fees.

On the other hand, if universities require bigger increases in funding per student in the future, or if student numbers increase, this is likely to be paid for entirely by taxpayers under the Conservatives and the Liberal Democrats, but could be shared more evenly between taxpayers and graduates under Labour.

One particular contribution of our analysis is the new light it sheds on graduate earnings. This has allowed us to look in more detail at what the funding policies mean for graduates across the lifetime earnings distribution. We have found that the median of the lifetime earnings distribution for male graduates is around £325,000 higher than the equivalent figure for male non-graduates. For women, the median lifetime earnings advantage of graduates over non-graduates is around £430,000. However, having a lifetime earnings advantage by virtue of being a graduate is by no means a sure thing – some graduates will end up earning less than some non-graduates over their lifetimes. For example, whereas 15% of male graduates will earn *less* than £900,000 over their lifetimes, 18% of male non-graduates will earn *more* than this amount.

Allowing for mobility and periods out of work in estimating future graduate earnings profiles results in lower estimates of within-education-group lifetime earnings inequality than conventional estimates, in which it is generally assumed that individuals are employed for every year of their working lifetimes and that they stay at the same point in the earnings distribution throughout their lives. The standard deviation of the lifetime earnings distribution for male graduates decreases by 60% when the effects of mobility and non-employment are taken into account.

Looking at what these lifetime earnings profiles mean for debt repayments, we find that the average level of taxpayer subsidy, and the length of time it would take graduates to repay their debt, would vary widely, depending on which system is adopted. It would also differ enormously between men and women, and between high earners and low earners.

Graduates with *low lifetime earnings*, and women who take long breaks from the labour market, would benefit most from taxpayer subsidies under Labour and the Liberal Democrats, and would see a considerable proportion of their debt written off, due to the 25-year limit on repayments under all three parties. Graduates with *high lifetime earnings* would, by contrast, gain the lowest taxpayer subsidies, and would see relatively little debt written off.

Our results on graduate debt repayments also echo our findings that of all the parties' policies, graduates are expected to contribute least to the costs of their higher education under the Liberal Democrats. We found that the length of debt repayments would be shorter on average under the Liberal Democrats than under the other parties' systems, regardless which part of the graduate population we consider.

The comparative pattern of debt repayments between Labour and the Conservatives is more complicated, with some groups paying debt for longer under the Conservatives, despite their lower initial levels of debt, whilst others pay their debt for longer under Labour. In particular, we find that graduates from the *poorest family backgrounds* would on average make repayments for *longer* under the Conservative than under the Labour system, despite having lower levels of initial debt. This is because lower initial debt under the Conservatives would be offset by a higher real interest rate charged. By contrast, graduates from the *wealthiest family backgrounds* would on average repay their debts earlier under the Conservative than under the Labour system. This is because even though interest is accumulating on debt under the Conservative system, the relatively lower initial debt level compared with Labour more than offsets the effects of the relatively higher interest rate.

Our analysis also raises some serious questions about the viability of the private market for loans proposed under the Conservatives' scheme. Banks may struggle to offer a viable interest rate under the Conservative scheme. The real interest rate they would be permitted to charge would be capped at 5.5%, whilst the annual repayments that banks could demand of graduates would be fixed at 9% of graduate earnings above the repayment threshold. Moreover, the length of time for which graduates could make repayments before any outstanding debt would be written off would be fixed at 25 years. The effectiveness of adjusting interest rates so as to increase revenue from the loans could only be realised within these constraints.

It would also be a real risk under the Conservative system that the types of students who take out the maximum loans would be those who would be less likely to be able to repay them

fully. This would not be a concern in the Labour or Liberal Democrat system as all students have the incentive to take out the maximum loan.

In Chapter 2, we set out why the government should intervene in the market for higher education, pointing out that HE is never free, and that the main political parties all aim to increase spending on HE per university student but differ in how they would share the costs between students, graduates and taxpayers. We pointed out that a sensible HE funding system would help students defer the costs of university until after graduation, as well as providing some insurance against unexpectedly low future earnings, for students who have taken out loans to fund their higher education. It would offer some subsidy to reflect spillover benefits, but would ensure that people who benefit more from HE bear more of the cost than those who benefit less. It would offer students an adequate standard of living at university, irrespective of their family backgrounds. Furthermore, it would be simple, transparent and flexible in terms of its administration.

None of the systems is perfect in each and every one of these respects. All three systems provide mechanisms for deferring the costs of HE until after graduation, and all three do this in part through income-contingent loans and in part through the tax system.

Labour's system relies on income-contingent loans the most and, as a proportion of total contributions, on taxpayers the least. This means that non-graduate taxpayers, a majority of the taxpaying public, do not have to foot as high a share of the bill under Labour as in the other parties' systems. Labour's system also involves increasing support for students through a combination of grants and loans for maintenance and fees. The means testing of the maintenance loan, however, is unnecessarily complex and it would be relatively easy to design a scheme that that overcame these complexities and still achieved the same broad outcomes. The scheme also means that amongst graduates, those who benefit most from HE bear a higher share of the cost than those who benefit less. However, given that most universities now plan to charge the full top-up fee, it is unlikely that those who study courses that on average are associated with the highest earnings after graduation will incur the highest fees for their tuition.

The Conservatives' system maintains a high graduate contribution, by eliminating taxpayer subsidies on maintenance loans, whilst at the same time scrapping tuition fees. In so doing, it introduces a private market for maintenance loans, which will have to deal with possibly severe adverse selection and moral hazard problems. At the same time, as graduates would not contribute to the cost of tuition, this system moves away from the principle that payments should in some way be related to the costs and benefits of the education that they have enjoyed.

The Liberal Democrats would, as we have discussed, require the smallest graduate contribution of all the parties but the largest taxpayer contribution. They have announced that the funding for this would come from the levying of a 49% marginal rate of income tax on individuals with incomes above £100,000. Clearly, graduates will make up a large proportion of this group; however, the amount that they would pay will bear no direct relation to the cost of their education. Furthermore, non-graduates with incomes above £100,000 would pay the same amount as graduates on the same salaries. Finally, the combination of grants and maintenance loans the Liberal Democrats propose is not as generous as those under the Labour and Conservative proposals, suggesting that compared with the other systems, it

would be less able to provide an adequate standard of living at university to all students who are prepared to borrow.

Appendix A. Details of the 2003–04 system

Table A.1. Details of the 2003–04 system (2006–07 prices)*

Measures	2003–04 system
FEES	
UPFRONT FEES	£1,200 p.a.
DEFERRED FEES	Full exemption on fees up to £1,200 p.a. if family income <£22,560.
	Partial exemption on fee up to £1,200 p.a. if family income between £22,560 and £33,560.
LOANS	
LOANS FOR FEES	No loans for fees.
LOANS FOR MAINTENANCE Students living away from home outside London	£4,305 (£3,735)[a] p.a. if family income <£33,560
	Loan of £4,300 (£3,735) p.a. is tapered away between family income of £33,560 and £44,000 (£42,500), so that for family income above £44,000 (£42,500) the loan is £3,225 (£2,800) p.a.
REPAYMENT OF LOANS	9% of income above £9,285[b] p.a.
	Loans state-subsidised.
	Zero real interest rate.
	No debt forgiveness.
GRANT	No grant.

* All figures have been converted to 2006–07 prices using an inflation rate of 2.5% per year.

a. Throughout this table, non-parenthesised figures refer to first- and second-year students and parenthesised figures refer to final-year students.

b. This is £10,000 uprated to 2006–07 prices.

Appendix B. The three parties' costing assumptions

Table B.1. Government costing assumptions, January 2004

	Per year
Cost of fee deferral	
Highest estimate of cost of deferring existing fees	£190 million
Highest estimate of cost of deferring variable fee	£445 million
Cost of loan write-off after 25 years	£30 million
Cost of student support	
Increasing loan to median basic living costs	£65 million
Cost of HE grant to £1,500	£420 million

Notes: All costings are in 2006–07 prices, and have not been rounded. Fee loan cost estimates based on assumption that tuition fee revenue in total is £1.8 billion. This is consistent with 2003–04 student numbers, and with 75% of universities charging the full top-up and 25% of universities charging the basic fee (see Department for Education and Skills (2004b)).
Source: Department for Education and Skills.

Table B.2. Conservative costing assumptions, September 2004

	Per year
Savings compared with Labour's system	
Maintenance loan subsidies	£1,020 million
Fee loan subsidies	£660 million
Student loan administration	£40 million
Costs compared with Labour's system	
Fee replacement *including existing fee remissions*	£1,800 million
Gifting of the Student Loan Book	£380 million
Costs common to Labour and Conservative systems	
Fee remissions	£480 million
Student grants	£420 million

Note: Where figures differ from Table 4.1, this is because Conservative-provided estimates differ from official figures, or our own calculations.
Source: Conservative Research Department, 2004.

Table B.3. Liberal Democrat costing assumptions, March 2005

	Per year
Costs	
Fee replacement *including existing fee remissions*	£2,130 million[a]
Grant of £2,000	£560 million
'Barnett Consequential' for non-English universities	£200 million
Savings compared with Labour's system	
Fee loan subsidies	£770 million[b]
Cost of debt write-off after 25 years	£30 million

a. Calculations based on Department for Education and Skills (2004b) assuming 100% of universities charge the full top-up on all courses. Of the total fee replacement, £1,280 million is calculated to be replacement of top-up fees and £850 million is basic fee replacement.
b. Assumes 90% take-up of loans. Loan subsidies calculated on basis of £0.37 cost to the exchequer on each £1 of basic fee loan and £0.42 on each £1 of top-up fee loan (see Department for Education and Skills (2004b, points 43. and 44.).
Source: Provided to IFS by Liberal Democrats.

Appendix C. Methodological details

This appendix details the empirical procedure used to obtain the simulations of graduates' and non-graduates' lifetime earnings profiles that are presented in Chapter 7.

C.1   Estimation: wages

We draw two samples from the Labour Force Survey (LFS):

i.   a cross-sectional sample of wage information from 1994 to 2002 for employees and individuals in government training programmes, aged 19 to 60;

ii. a two-year panel of wages at adjacent ages, for the sample of individuals for whom both are observed.

We divide both samples (i and ii) into six subsamples: for both men and women, we separately consider all graduates, all non-graduates, and non-graduates with a level 2 or level 3 qualification. The model described below is estimated separately for each of these six groups.

Let

$$w_{it} \quad = \quad \text{log wage of individual } i \text{ at age } t;$$

$$D_{it}^s \quad = \quad 1 \text{ if the wage of individual } i \text{ at age } t \text{ is observed in year } s$$
$$\quad = \quad 0 \text{ otherwise.}$$

We begin by regressing w_{it} on the set of dummy variables, D_{it}^s, and label the residuals y_{it}:

$$(1) \qquad w_{it} = \sum_s \delta_s D_{it}^s + y_{it}.$$

The aim is to estimate, for each gender–education group, the joint distribution of wages across the working lifetime, $F(y_{it}, .., y_{iT})$, where $t = 19$ for non-graduates and $t = 22$ for graduates, and $T = 60$ for both. We assume that this joint distribution, $F : R^T \rightarrow [0,1]$, is continuous and that it is the same for all individuals within a given gender–education group. By a theorem of Sklar (1959), this implies that we can decompose $F(y_{it}, .., y_{iT})$ into a copula function, $C : [0,1]^T \rightarrow [0,1]$, and a series of marginal distributions, $F_t(y_{it})$, as follows:

$$(2) \qquad F(y_t, .., y_T) = \prod_t C_t(F_t(y_t), .., F_T(y_T)).$$

If we further assume that y_{it} follows a first-order Markov process, this allows us to decompose (2) into the product of two-dimensional copulas, which relate the ranks of an individual in the wage distribution at two adjacent ages:

$$(3) \qquad F(y_t, .., y_T) = \prod_t C_t(F_t(y_t), F_{t+1}(y_{t+1})).$$

We assume that the density of marginal wages exists, so that

$$(4) \qquad f(y_t,..,y_T) = \prod_t f_t(y_t) f_{t+1}(y_{t+1}) c_t(F_t(y_t), F_{t+1}(y_{t+1})).$$

We assume that the age-dependent copula functions, c_t, are t copulas[85] with correlation $\rho(t)$ and degrees of freedom $v(t)$, where

$$(5) \qquad \begin{aligned} \rho(t) &= \rho_0 + \rho_1 t + \rho_2 t^2 + \rho_3 t^3; \\ v(t) &= v_0 + v_1 t + v_2 t^2. \end{aligned}$$

Let the density for the t copula be given by $\tau(\cdot,\cdot;\rho,v)$. Then the log-likelihood function for $\rho = (\rho_0,\rho_1,\rho_2,\rho_3)'$ and $v = (v_0,v_1,v_2)'$ may be written as

$$(6) \qquad l(\rho,v) \propto \sum_i \ln \tau(F_t(y_{it}), F_{t+1}(y_{it+1}); \rho(t), v(t)).$$

We estimate the parameters (ρ,v) in two stages:

i.   In the first stage, we form non-parametric estimates of the marginal distributions, $\hat{F}_t$, by using the rescaled empirical cumulative distribution functions given by the age-specific samples of y_{it} for the sample of individuals for whom we observe two wages. This amounts to estimating $F_t(y_{it})$ for each observation from its rank in the subsample of y_is for a given t.

ii. In the second stage, we choose (ρ,v) to maximise the log-likelihood function in (6), replacing $F_t(y_{it})$ with $\hat{F}_t(y_{it})$:

$$(7) \qquad (\hat{\rho},\hat{v}) = \text{argmax} \sum_i \ln \tau(\hat{F}_t(y_{it}), \hat{F}_{t+1}(y_{it+1}); \rho(t), v(t)).$$

The results of this estimation process are shown in Figures C.1 and C.2, which plot $\rho(t)$ as a function of age, for men and women respectively. This can be loosely interpreted as a description of how immobility of wages varies with age. Corresponding graphs for estimates of the degrees of freedom parameter, which measures the degree of mobility in the tails of the wage distribution, are available from the authors on request.

Having estimated the marginal distributions $\hat{F}_t(y_{it})$ non-parametrically from the larger cross-sectional sample of age-specific wages (step i above), and having estimated the parameters of the copula functions from the panel sample (step ii above), we combine the two to form a consistent semi-parametric estimate of the full joint distribution of wages across ages, $\hat{F}(y_{it},..,y_{iT})$, for each gender–education group. The simulation stage involves drawing a series of random vectors, $(y_{it},..,y_{iT})'$, from this distribution.

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[85] We fitted a variety of copulas to the data including the Gaussian copula, the Plackett copula and the symmetrised Joe-Clayton copula. Using pseudo-likelihood-based tests for semi-parametric copula-based models, we could not reject that any of these fitted the data better than the t copula. In addition, the t copula is useful because its parameters have simple economic interpretations in terms of mobility and allow for tail dependence.

Figure C.1. Estimated correlation parameter, $\rho(t)$, men
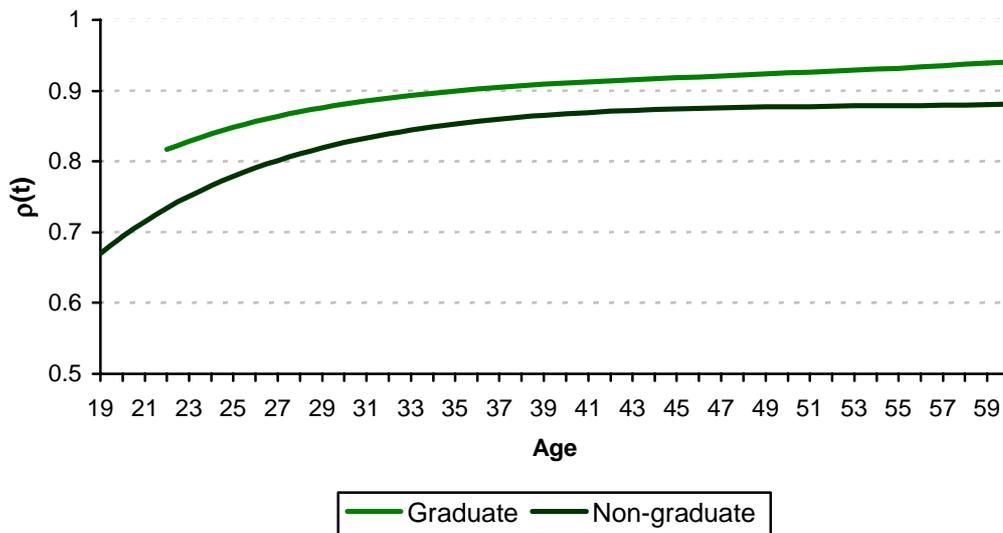
Figure C.2. Estimated correlation parameter, $\rho(t)$, women
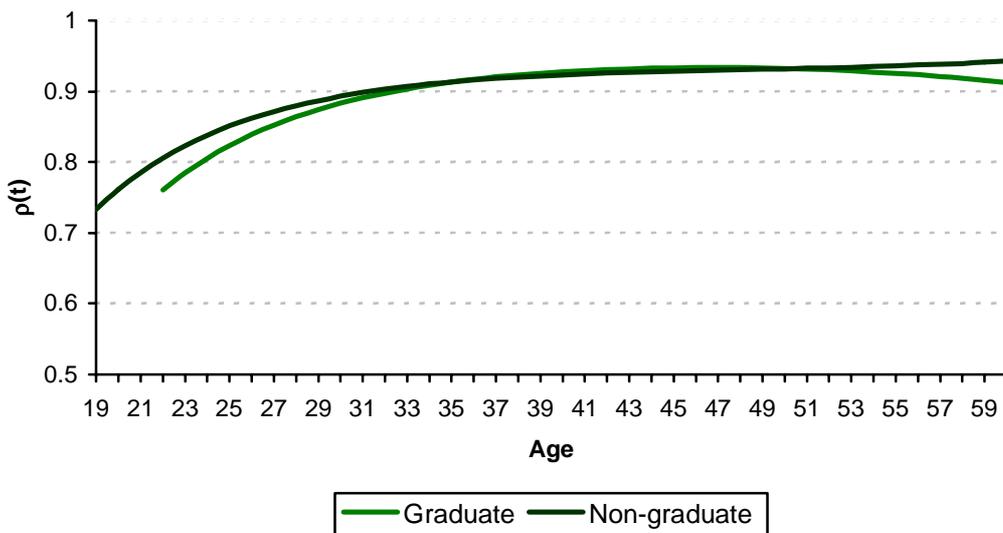
C.2 Estimation: employment

We use the British Household Panel Survey (BHPS) to estimate three models of employment dynamics: the probability of leaving employment, the probability of re-entering employment after a spell of unemployment, and re-entry ranks in the age–gender–education wage distribution following a spell of unemployment. Each model is estimated separately for each gender–education group. Let $u_{it} = \hat{F}^{-1}(y_{it})$. Let $\Phi(\cdot)$ be the CDF of the standard normal distribution.

The remaining notation is as defined in the previous section.

Model 1: exit probability

$$\Pr(\text{leave employment}) = \Phi\left[\beta^{1t}(t) + \beta^{1y}(u_{it}^{P})\right]$$

where age, t, enters as a polynomial and u_{it}^{P} denotes the wage rank of the individual in the previous period.

Model 2: re-entry probability

$$\Pr(\text{re-enter employment}) = \Phi\left[\beta^{2t}(t) + \beta^{2d}(d_{it}) + \beta^{2y}(u_{it}^{L})\right]$$

where age, t, enters as a polynomial, d_{it} denotes the length of the current unemployment spell of an unemployed individual, and u_{it}^{L} denotes the wage rank of the individual when last in employment.

Model 3: re-entry wage rank

$$\text{Expected re-entry wage rank}, E[u_{it}] = \beta^{2t}(t) + \beta^{2d}(d_{it}) + \beta^{2y}(u_{it}^{L})$$

where age, t, enters as a polynomial, d_{it} denotes the length of the current unemployment spell of an unemployed individual, and u_{it}^{L} denotes the wage rank of the individual when last in employment.

In the simulations, we model the initial employment situation as follows. Rather than assuming that all individuals obtain employment immediately after graduating from college or leaving secondary school, we postulate a probability of finding a job in the first year in the labour market, followed by a constant hazard rate into employment for years 2 through 10. We assume that all individuals have obtained employment after 10 years. Once individuals become employed for the first time, their employment dynamics are determined by the three models above. The initial probabilities and subsequent hazard rates are calibrated so that the cross-sectional employment rates over the life cycle match those observed in the LFS data. The calibrated probabilities and hazards are given in Table C.1.

Figures C.3–C.6 show the simulated cross-sectional employment rates from our model and the rates observed in the LFS.[86]

Table C.1. Calibrated employment probabilities

		Graduates	Level 2–3 non-graduates	All non-graduates
Male	– Prob yr1	0.65	0.65	0.625
Male	– Hazard yr2–10	0.45	0.25	0.2
Female	– Prob yr1	0.725	0.625	0.6
Female	– Hazard yr2–10	0.3	0.15	0.1

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[86] Similar graphs for non-graduates with at least level 2 qualifications are available from the authors on request.

Figure C.3. Male graduates' employment probabilities

Figure C.4. Female graduates' employment probabilities

Figure C.5. Male non-graduates' employment probabilities
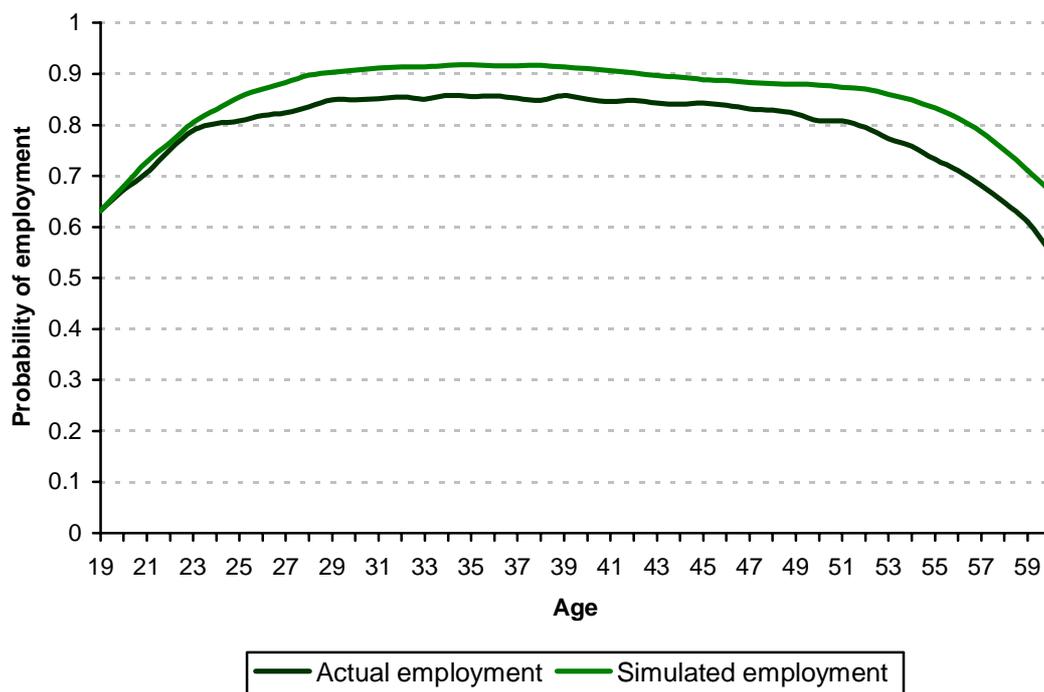
Figure C.6. Female non-graduates' employment probabilities

C.3   Simulation

We simulate the earnings–employment profiles for each gender–education group as follows. We begin by constructing a probability distribution over age at first employment, based on the initial employment probabilities and subsequent hazard rates above.

1. Take a random draw from this distribution for each simulation, t_{START}. Denote employment at age t by e_t and label $e_t = 0$ for $t < t_{START}$. Let $e_{t_{START}} = 1$.

2. Draw a uniform $[0,1]$ random variable (RV), $u_{t_{START}}$.

3. For $t = t_{START}$ to 60, repeat the following steps:

    a. Draw a random variable from a conditional t-copula with parameters $(\rho(t), \nu(t))$, conditioning on u_t. This gives u_{t+1} if individual will be employed at age $t+1$.

    b. Work out employment situation by drawing a Bernoulli RV from the exit employment model if $e_t = 1$ and from the re-entry model if $e_t = 0$. This gives e_{t+1}.

    c. If $e_t = 0$ and $e_{t+1} = 1$, replace u_{t+1} with the expected rank from the re-entry model.

4. Calculate $y_t = \hat{F}_t^{-1}(u_t)$, using the empirical cumulative distribution function for the marginal wage distributions and generate employment-corrected wages as $w_t = 52 \exp\{\delta_{2002} + y_t\} e_t$.

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