

Deferred fees for universities

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This is a response to the call for evidence “Proposals for a new higher education system” by the Browne Review on “Higher Education Funding and Student Finance.”

Summary: I will argue for a simpler, fairer, more fiscally responsible and flexible form of university funding and student support. This system is designed to encourage a diverse higher education sector where high quality provision can flourish. The main points of the new system are:

1. Make student financial support available to cover all tuition and a modest cost of living.
2. Allow graduates to repay according to earnings with protection for poorer graduates.
3. Call HEFCE teaching grants “scholarships” and make students aware of their value.
4. Cap the level of funded fees plus HEFCE grant at the current level.
5. Allow universities to charge deferred fees.
 - a. When they are paid the money goes to the student’s university not to the state. These fees have no fiscal implications.
 - b. Bring some of the cash flow from deferred fees forward by working with a bank.
6. In the long-run move to making the cost of living support simpler by
 - a. Providing more realistic cost of living support for all students.
 - b. Removing means-tested university bursaries for cost of living expenses.
 - c. Removing means-tested grants to students provided by the state.

This builds on England’s higher education structure. The changes are simple to implement. It would set up a stable funding structure for our universities & provide the financial support our students need.

1. A new higher education funding structure

The system will have four parts. (i) financial support for students, (ii) support for tuition, (iii) a long-run move to a simple cost of living system, (iv) encouraging early payments. Point (i) underpins the other parts, while (ii), (iii) and (iv) can be considered entirely separately.

1.1 Financial support for students

Whenever I refer to “financial support” I will mean the following. Students can opt to take out a financial support package to fully or partially fund their fees and/or cost of modest living. Whatever the size of the financial support package, students will be offered payment terms as graduates which are 9% of earnings above £15k until they have paid back the full amount (net present value) of support². The parts of support package which are not repaid due to low earnings are forgiven after

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² For simplicity of exposition I have not described the impact of changing the payment percentage, the £15k threshold or different interest rates. Dearden, Goodman, Kaplan and Wyness (2010) provide a thorough discussion of those issues, while Shephard (2010) discussed lowering the payment percentage and increasing the interest rate.

25 years. The interest rate should be the state's cost of borrowing (currently 2.2% real). The system is run through the Student Loan Company (SLC)³.

1.2 Support for tuition

1.2.1 HEFCE grant for each student

Currently all universities receive upfront the standard HEFCE teaching grant and subject premiums on a per student basis. This makes sense as education on average generates positive externalities and so should be subsidised by the state.

The HEFCE grant should be rebranded so students explicitly recognise it. It should be called, for example, a "scholarship" demonstrating how the state invests in educating students. Currently this support is largely invisible to students, which undermines the system's popularity.

1.2.2 Tuition fees

Students would be charged fees. Financial support would be available in all cases to pay these, although some students and their families may wish to pay upfront. This makes sense as students derive a private benefit from the education and so, if they can afford it as graduates, it is appropriate for them to make a contribution. This will mean education will continue to be freely available to students.

1.2.2.1 Funded fees

Fees will have up to two parts: "funded fees" and "deferred fees".

Funded fees are paid upfront to the university by the student either directly, or by the student taking out financial support for fees from the state. Any repayments for support will go to the state, which takes the risk the graduates will have their fees forgiven. Hence the university is guaranteed to receive the funded fee immediately. Funded fees must be capped, otherwise the state has unlimited liabilities⁴. I would recommend that the HEFCE grant plus funded fee cap is kept at the current level.

1.2.2.2 Deferred fees

To allow for genuinely variable fees universities should be allowed to charge "unfunded fees" if they wish to. These fees can be paid to the university upfront by parents or by graduates over time through the financial support system whose terms are entirely unaltered by their introduction. Note graduates with a deferred fee do not make higher monthly repayments. They merely repay for longer. The last piece of those repayments will go to the university. At no point does the state pay for unfunded fees. The terms on which the fees are paid are the same as other parts of financial support, although they are better called variable "deferred until you can pay" fees. I will call them "deferred fees" for short.

The university takes the risk that graduates' earnings will be low and so have their deferred fees forgiven. So it incentivises them to generate high private benefit for their students, to provide a value-added education that will translate into a higher income. The state plays no role and the level of these fees has no impact fiscally. One university's deferred fee has no financial implication for any other university and deferred fees are paid by graduates not students. Indeed one substantial

³ It would be more accurate to name this company the Student Support Company.

⁴ If the cap was to rise then it will be rational for universities to all set their fees at the cap, as the state guarantees they will receive the cap. Hence the state will have encouraged universities to charge high fees.

advantage over the current system is that universities will not move to a single “cap” level of fees. It is only worth the universities charging deferred fees if they believe their graduates will have the income levels to support them.

As a person working at a university I find this attractive. The university would be investing (i.e., teaching without demanding upfront payment) in the future prosperity of its graduates, while looking after those that do not have high future incomes.

These deferred fees should be junior to the living costs and funded fees support from the state, so payments by graduates first go to the state to pay their costs and then to the university to pay the unfunded fees. The SLC would collect the income for the university in the usual way. In effect the university would own a particular slice of their loan book⁵. As the deferred fees are junior, graduates will need quite high earnings to pay them. Poorer graduates will have them entirely forgiven.

A university’s deferred fee delivers it two new income sources: upfront payments and 25 years of annual part payments from their better-off graduates. The former raises no new issues for universities as it is simply an additional cash payment. The latter is more challenging. In Section 2.2 I will show efficient ways in which this cash flow can be capitalised by selling a bond to a bank (or borrowing from a bank) so that the resulting resources can be spent on education immediately.

1.3 A simple cost of living system

Cost of living calculations are challenging as students have very different lifestyles, number of weeks at university and patterns of work while at university. Some areas are expensive to live in. However, if we want to ensure all students can have access to higher education and to lower the risk of high dropout rates at university, then the state should be prepared to support a modest cost of living for everyone.

Warwick University’s website is quite typical in its recommendations: “Undergraduate students will need around £7,000 to cover living costs (excluding fees) for the nine months from October to June each year.” Bristol University suggests a minimum range of £6.2-£7.2k, Oxford Brookes suggests £8.4k and the London School of Economics suggest a minimum of £1k a month⁶.

What is clear is that the current level of financial support for many students is inadequate and is very complicated⁷. This suggests having a long-term goal of developing cost of living financial support of between £6.8k-£8k a year, available to all UK students. By having a sensible interest rate, the cost to the state of student support falls dramatically. We will quantify this later. This implies less need to aggressively ration such support using means testing or other criteria, allowing us to develop a much simpler, fairer and more fiscally efficient system. This suggests removing all forms of cost of living

⁵ Note that under current EU law, other-EU students cannot require the UK state to provide them with living cost support but can be charged fees. So they will be immediately paying their funded fees followed by their deferred fees through the financial support system.

⁶ From their websites, downloaded 4/10. See also National Union of Students (2009b, p14) who estimate average rent at £3.9k, travel at £0.6k and food at £1.7k. NUS (2010) present a survey of rental costs for students.

⁷ Table 1b of the SLC’s data release (25/11/09) shows the balance between grants and loans for the UK. If the family earnings are below £25k then students get a loan of £3.5k, a grant of £2.9k from the state and a minimum bursary from a university of £0.3k (it averages £0.9k, see Office of Fair Access (2009, p. 18, footnote 7)). The minimum is thus £6.7k and the average is £7.3k. By the time earnings reaches £50k a year then the grant has tapered away and the maximum loan is £3.6k with the rest unfunded. The SLC’s Table 3 suggests around 33% of students receive a full grant (£2.9k) and roughly 21% a partial grant. In addition universities use around a significant fraction of their fee income from students to fund university bursaries. The structure of these bursaries vary dramatically between institutions. At Newcastle University it is £1.5k, University Brighton offers £1,080.

grants, bursaries (cash gifts given to some students funded from fee income paid by other students) and sliding scales, so that all students are treated in the same way.

This would reduce the liquidity constraint some young people face when they decide if they wish to go to university and makes the system much simpler to administer, so reducing the chance of additional SLC implosions that put students at risk. It also makes the system significantly cheaper to run: grants cannot be recovered from better off graduates while the vast majority of student financial support will be. Further it is simpler to explain to potential students so they precisely know the deal before accepting a place at university. This approach is attuned with the comments made in the 2nd round call for evidence by the Browne Review⁸. Finally, by removing the current system of university bursaries, net fee income will rise, reducing the need for many universities to press for an increase in the level of their fees.

1.4 Encouraging earlier payment

At the moment around 15% of fees are paid upfront by UK students⁹. It is in the financial interest of all stakeholders to raise the amount of upfront or early payments by wealthy parents, employers or philanthropy when they can afford it. Why? (i) For students, it reduces their aggregate long-run liabilities. (ii) For the state, this reduces the size of their student loan book and reduces the amount of support which will have to be forgiven. (iii) For universities, this provides income upfront and eliminates the risk that graduates will fail to reach the earnings threshold at which they pay deferred fees.

How do we encourage early payment? As many people have argued elsewhere, there are overwhelming reasons for charging an interest rate at the government's cost of borrowing, rather than the much lower inflation rate currently used. This reform should also increase the rate of upfront payments, as this will remove the current arbitrage on the student loan book¹⁰.

We can reduce the liquidity challenges many families face in writing large annual checks. Utilities typically allow annual bills to be paid by monthly direct debit. There seems no reason why tuition fees cannot be paid or partially paid this way¹¹. This would work by having all students automatically covered by the financial support system. But support for fees would only be drawn down if the university did not receive payments for tuition. Further philanthropic or industry sponsored bursaries should focus in the first instance on forgiving student support rather than providing additional cost of living expenses. (Additional cost of living support will be less needed if cost of living support rises to a reasonable level).

⁸ They said the following: "The IFS have analysed the impact of fee and student support changes over the past 16 years to estimate the positive and negative impact of the different elements on participation rates of young people aged 18-19 (using the Labour Force Survey). Their research suggests: a £1,000 increase in fees results in a 4.4 percentage point fall in participation rates; a £1,000 increase in loans results in a 3.2 percentage point increase in participation rates; and a £1,000 increase in grants results in a 2.1 percentage point increase in participation rates..." See www.ifs.org.uk/docs/fees_review.ppt

⁹ I do not have reliable data on the percentage of parents/students who pay upfront. With the help of Alison Johnston at the LSE I have managed to get university level data from 4 Russell Group Universities and 1 non-Russell Group University. The variation between institutions is quite modest. Taken together I have the following as yet very rough stylised facts: around 15-20% of UK based students pay up front; a higher level of other-EU students pay up front than UK students.

¹⁰ Currently the interest rate is 0% real. Thus if prosperous parents give their child cash to pay for their education upfront then it is rational for the student to put the cash into a tax free indexed linked national savings certificate (which currently pays inflation plus one percent on up to £30k per person), and for the student to take out a student loan of the same value. When the certificate expires then the student loan is repaid, or the certificate is rolled over. In either case the student makes a profit of the real interest rate on the certificate without any risk. So the student can arbitrage the taxpayer by about £200 per year for up to 25 years (in practice it is likely to be for around 10 years). So it is irrational to pay upfront.

¹¹ SLC receives annual payments from HM Revenue & Customs so receiving monthly payments would require adjustments.

Likewise graduates might opt to make additional early payments by monthly direct debit. Employers may be able to help either by making payments for their staff directly as part of their compensation for new employees or incentivise their staff to make early payments themselves (e.g. through salary sacrifice). It may be attractive to be able to set up “education savings accounts”, which would be drawn upon to pay higher or further education tuition fees. A simple example of such an account would pay inflation +1% tax free, the same conditions as index-linked national savings certificates.

Outline of proposed system

Financial support system for students should be made available to cover all tuition fees and the cost of modest student living. Graduates pay 9% of earnings above £15k until they have paid back the net present value (NPV) of their support or are forgiven after 25 years. The interest rate is the state’s cost of borrowing.

Each student would receive a visible *scholarship* for tuition from the state, which would be paid over to the university. This simply rebrands the current HEFCE block teaching grant to universities.

Fees = “funded fees” + “deferred fees”, to be paid by graduates.

- The state pays universities funded fees, with no variation across the sector. Graduates pay the state.
- Deferred fees provide a new income stream for universities, allow fee variation between universities. Graduates pay their universities.
 - These are fiscally neutral. Poorer graduates don’t pay them.
 - New sources of university income: upfront payments and a flow of annual payments from their graduates.
 - The university can opt to
 - Hold the flow of payments on their books, like an addition to their endowment.
 - Capitalise the cohort’s annual payments by selling a bond or working with a bank, spending the capitalised value on educational provision now.

In the long-run move to making the cost of living support simpler by

- Provide financial support for cost of living of £6.8k-£8k a year per student to any student who wishes to have it. Remove means-testing of loans.
- Remove
 - All state grants.
 - University bursaries funded through the fee income from other students.
- Philanthropic and industry support should focus on forgiving financial support (i.e. cancelling income contingent support), not giving students more cash for living expenses.

Encourage *upfront or early payments* by students, their benefactors or by graduates.

2. Some financial analysis of the proposed changes

2.1 Funded fees and cost of living

2.1.1 Who pays now

Although there now seems to be a consensus in favour of removing the interest subsidy from student financial support, it is useful to quantify the current set-up so that we have a benchmark.

Detailed analysis of the financial support system is given in the Appendix. It shows that currently the average loss the state makes per year per student on those to whom it gives cost of living financial support is forecasted to be £0.60k net present value (NPV). The average loss on fees is £0.94k. Therefore the average state loss is £1.54k out of £6.8k (£3.2k in fees plus £3.6k in average cost of living support. Thus this is a 23% loss¹²). This applies to 85% of students as 15% pay upfront.

In the public accounts the forecasted losses are added to the Higher Education Resource Accounting Budget (RAB), which is the committed non-cash educational spending. Then roughly 1/25th of this is drawn down each year and appears as cash spending in the accounts in the year of the draw down. Hence making the financial support system more efficient only marginally improves the current deficit (Public Sector Net Borrowing), but it does improve the public finances over the long-run as the RAB will accumulate up to a large number. See Barr and Johnston (2010, Appendix) for more details and other features of student support which affects the RAB and deficit.

	NOW					
	Tax payer		Univ	Families		
	Deficit	RAB		Parents	Grad	Student
Cost of living						
Maintenance		-0.5		-1.0	-2.6	4.1
State grant	-1.0					1.0
Univ bursary			-0.5			0.5
Tuition						
Fees		-0.8	3.2	-0.5	-1.9	
HEFCE	-4.1		4.1			
All costs	-5.1	-1.3	6.8	-1.5	-4.5	5.6
	-6.4		6.8		-0.4	

Table 1a. The financial position now. Who pays what? Each number averages over the population, e.g. about 15% of families pay upfront, so they contribute on average $0.15 \times £3.2k = £0.48k$ to paying fees. The HEFCE grant for a band D subject (typically humanities and social science) is around £2.8k and attracts no subject premium. Averaging the level of grant over all subjects then it rises to around £4.1k per student per year. It is this number which is most relevant to the deficit in practice. Source: author's calculation.

Table 1a provides a summary of how student costs divide between the taxpayers, universities and families. Overall students receive on average £5.6k per year per student cash upfront for living costs. This is below average university living costs and so on average students have to borrow or work. £4.5k is repaid by graduates as they work while £1.5k is funded by parents. Netted over the long-run then families contribute £0.4k per student per year for going to university, basically covering all costs of living expenses. Universities receive £6.8k net for teaching. The taxpayer

¹² Using somewhat different data, Dearden et al (2010) also report a 23% loss rate. The reason the rate of losses is higher for fees is that the state has decided payments first count against their cost of living support and once that is paid off, then the payments go towards fees. This decision makes no financial difference to the state, but impacts the Tables given here. I think for the credibility of the system it would be better to have the following order of seniority: funded fees, cost of living and then deferred fees. Then graduates would get an annual print off of the NPV of the individual items they have paid off so far and a reminder of the value of the scholarships they received.

contributes on average around £6.4k per student per year¹³, although for humanities and social science students the number is more like £5.1k.

2.1.2 Removing the rate subsidy

If the interest rate subsidy is removed, as advocated by for example Barr (2004), Barr and Johnston (2010) and Laidlaw (2009), then the results alter. The Appendix forecasts that living cost losses fall to about £0.11k, fees to £0.38k and overall losses to £0.49k per student per year (7% loss). The result overall is presented in the top right hand side of Table 1b. It shows graduates pay £1k a year more, which reduces the RAB by this amount and leaves the deficit unaltered. Only graduates are affected by this change, not universities or parents. The distributional implications of this change are studied in the Appendix which shows the poorest graduates are entirely protected from the consequence of this change¹⁴.

	REMOVING RATE SUBSIDY					
	Tax payer			Families		
	Deficit	RAB	Univ	Parents	Grad	Student
Cost of living						
Maintenance		-0.0		-1.0	-3.1	4.1
State grant	-1.0					1.0
Univ bursary			-0.5			0.5
Tuition						
Fees		-0.3	3.2	-0.5	-2.4	
HEFCE	-4.1		4.1			
All costs	-5.1	-0.3	6.8	-1.5	-5.4	5.6
	-5.4		6.8		-1.4	

Table 1b. The financial position after removing the rate subsidy. Otherwise the assumptions are the same as in Table 1a.

2.1.3 Simplifying the “cost of living” support

I argued above for a simpler support system for cost of living. Here I model the financial implications assuming cost of living support would increase to £6.8k and this would be available to all students. Then the losses to the state would be £0.49k for maintenance, £0.76k for fees and £1.25k in total out of the £10k of student support per year (12% loss). We froze funded fees, but university net income rises due to the fall in bursaries (obviously the percentage rise will be more significant for those teaching non-premium subjects). The result is given in Table 1c.

	SIMPLIFYING “COST OF LIVING” SUPPORT					
	Tax payer			Families		
	Deficit	RAB	Univ	Parents	Grad	Student
Cost of living						
Maintenance		-0.4		-1.0	-5.4	6.8
Tuition						
Fees		-0.6	3.2	-0.5	-2.1	
HEFCE	-4.1		4.1			
All costs	-4.1	-1.1	7.3	-1.5	-7.4	6.8
	-5.2		7.3		-2.1	

Table 1c. Removing the rate subsidy & simplifying the cost of living support. Otherwise the same as in Table 1a.

Average student income would increase. Graduates pay back considerably more unless they are poor in which case they are entirely protected. University net income rises without recourse to an increase in fees, as they are no longer funding cost of living from fee income. The taxpayer contributes on average around £5.2k per student per year (down 19% compared to now), although for humanities and social science students the number is more like £2.8k (down 46%).

¹³ In comparison the spending in 2006-2007 for local authority maintained secondary schools was £4.3k. Source: www.dcsf.gov.uk/rsgateway/DB/TIM/m002001/index.shtml. This is around the same level as the average HEFCE grant.

¹⁴ See Dearden, Goodman, Kaplan and Wyness (2010) for a much more detailed analysis of this change.

Of course we are in financially challenging times and so the state may slice off some of the increase in net university income by reducing the HEFCE grant (which would disappoint universities) and it might swap some HEFCE grant for an increase in fees (which would mean graduates would have to pay the same monthly as now but for longer, but universities would not be affected so long as subject premiums are protected). Both of these steps directly and significantly improve the deficit.

2.2 Financial analysis of deferred fees

Deferred fees are paid to the student's university. At no point is the state involved so they are fiscally neutral.

2.2.1 How much would an average university receive from deferred fees?

Using the modelling reported in the Appendix, the rates at which graduates pay can be estimated. As the level of fees increases, fewer graduates will be able to pay them off in full and so the yield from the deferred fee will taper off. Table 2 gives the results¹⁵.

Level of deferred fee	Additional, assumes cost of living support is £3.6k			Additional, assumes cost of living support is £6.8k		
	University income	Parental payments	Graduate payments	University income	Parental payments	Graduate payments
1,000	837	-150	-687	717	-150	-567
2,000	1,639	-300	-1,339	1,398	-300	-1,098
3,000	2,404	-450	-1,954	2,038	-450	-1,588
4,000	3,129	-600	-2,529	2,638	-600	-2,038
5,000	3,818	-750	-3,068	3,201	-750	-2,451
6,000	4,466	-900	-3,566	3,725	-900	-2,825
9,000	6,175	-1,350	-4,825	5,092	-1,350	-3,742

Table 2. Level of additional income for universities from deferred fees in the long-run and who pay. Computed with the current cost of living support and a boosted level. Negative numbers are those who pay for this. Some of the new income comes from upfront payments and from graduates. The latter will be spread over a 25 year period. All numbers are in NPV.

A significant challenge for universities with deferred fees is that the majority of the income comes with a delay, as their graduates become better off.

2.2.2 When would the income arrive?

Using the methods given in the Appendix it is possible to estimate the cash flow to the university from deferred fees. The results are given in Figure 1 for three different levels of deferred fees assuming the level of cost of living support is £6.8k. It shows that the income comes from upfront payments initially. Then we wait until graduates reach the age of around 31 and then the income increases roughly linearly over the next 14 years.

¹⁵ It assumes 15% pay upfront and then losses from student support are computed based on Table A4 in the Appendix.

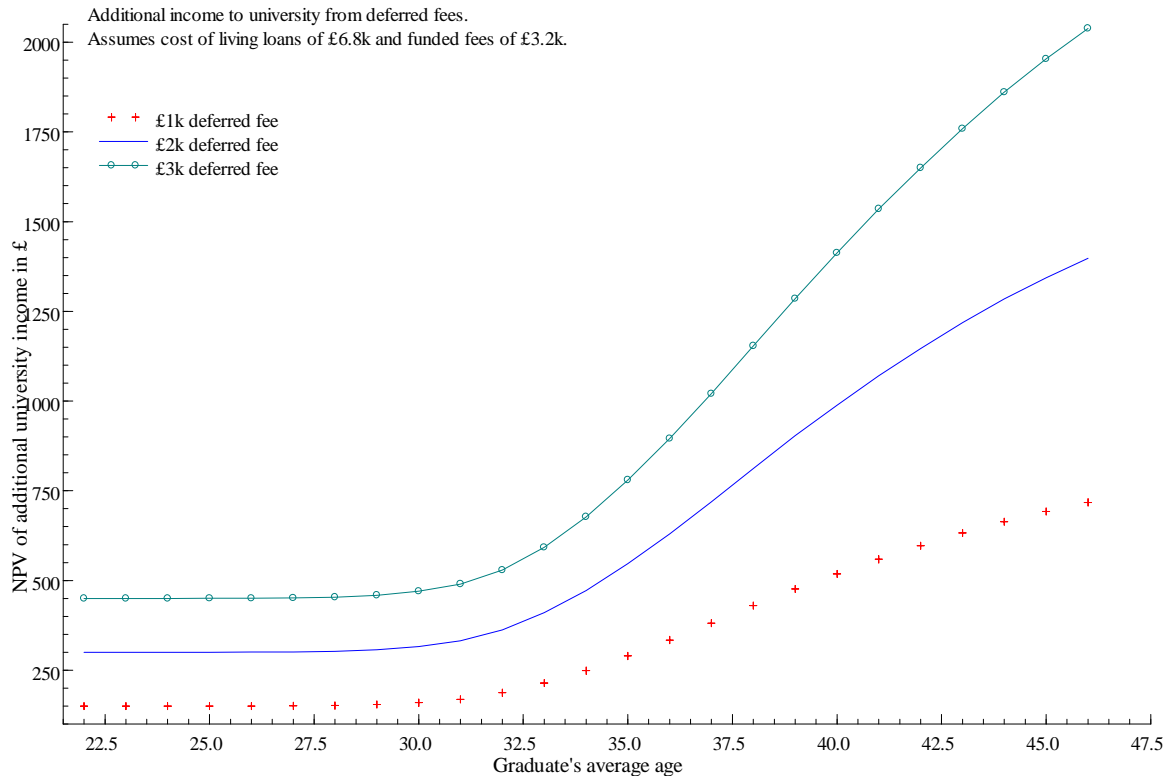


Figure 1. NPV of income to university from deferred fees for three different annual levels of deferred fees: £1k, £2k and £3k.

2.2.3 Who would pay deferred fees to universities?

The right hand side of Table 3 shows various quantiles¹⁶ of the average forecasted earnings of these graduates from age 22 to 46. The 50% quantile average earnings for men is £48.9k a year while for women it is £32.4k. It shows that deferred fees typically are paid by those with average real earnings above £40k. This covers 70% of men and 30% of women. These averages are over the ages 22 to 47, but in reality almost all payments are made from ages 31 upwards when earnings are higher than during the early years of the graduate’s career. All lower earners pay nothing.

Quantile	Payment of deferred fee			Forecasted average real earnings for graduates aged 22-46		
	All	Male	Female	All	Male	Female
1%	0.0k	0.0k	0.0k	6.4k	14.5k	4.6k
5%	0.0k	0.0k	0.0k	13.6k	24.4k	10.4k
10%	0.0k	0.0k	0.0k	18.7k	28.9k	14.2k
20%	0.0k	1.6k	0.0k	25.9k	35.1k	19.6k
30%	0.0k	2.9k	0.0k	31.1k	39.8k	24.2k
50%	2.98k	3.0k	0.5k	40.2k	48.9k	32.4k
70%	3.0k	3.0k	2.9k	50.0k	59.6k	40.7k
80%	3.0k	3.0k	3.0k	57.0k	67.3k	45.3k
90%	3.0k	3.0k	3.0k	68.6k	78.9k	52.2k
95%	3.0k	3.0k	3.0k	79.5k	89.1k	58.4k
99%	3.0k	3.0k	3.0k	100.7k	108.3k	70.9k

Table 3. Who eventually pays deferred fees at the level of £3k per year assuming the cost of living support is £6.8k? Based on forecasted real earnings paths from the age 22-46 we compute the quantiles of the average earnings for men and women graduates. This is on the right hand side of the table. On the left hand side are the corresponding levels of payments of deferred fees. It shows more deferred fees are paid by men and both men and women typically pay deferred fees if their average real incomes are above £40k.

¹⁶ Recall the 1% quantile is the smallest amount which is bigger than 1% of the data.

2.2.4 Bringing the cash flow forward

The challenge

As Figure 1 shows deferred fees deliver (i) some upfront payments by wealthier parents, (ii) little extra income over the subsequent 10 years, (iii) a new income flow 10-25 years after the graduates finish at university as they prosper. These fees are highly progressive, only paid by the wealthier upfront or better-off graduates. However, it would be attractive if universities could opt to unlock the income flow under (iii) so some of it could be spent now on the current students (who as graduates will collectively pay the bill), allowing the quality of the education to potentially rise immediately. What options are available to bring the cash flow under (iii) forward?

As the Student Loan Company collects the money through time from graduates, an annual cheque will be sent to the university with the realised deferred fees from its graduates. I will call this the cohort's payment. The obvious approach is to sell this stream of 25 years of the cohort's annual payments to a bank or insurance company, receiving in return an upfront capital payment which can be spent on education immediately. Students and graduates are entirely unaffected by who owns this stream, they just deal with the SLC. This approach is called securitisation and would be an enormous mistake for the reasons discussed in the Appendix: in short, I argue that this is likely to deliver a low and volatile price.

In principle, the government might buy the flow of the cohort's annual payments from the university. This would increase the size of the government's loan book but not increase its RAB or deficit if the price was right. For universities with weak balance sheets this approach may be attractive and this would harvest many of the advantages of deferred fees. Unfortunately the size of the state's loan book is itself a problem at the moment due to the UK's fiscal position. So this approach itself would need to be rationed if used at all, although it may be useful in the long-term.

Why annuitisation should work

The most attractive route is for the university to carry out the financing themselves via annuitisation so the state is not involved at all. The university would sell a cash flow which is a conservative estimate of the cohort's payments¹⁷. This avoids the state's loan book entirely. The obvious buyers would be banks or insurance companies. This is most easily explained through an example.

Recall Figure 1, focusing on the £3k deferred fee level. The university receives about 15% of the deferred fees upfront, which is £450. In addition it will receive 25 annual payments whose NPV after 25 years is around £1.5k, but where the first 10 years are almost entirely barren. After the age of 32 the payments are well approximated by a straightline with about 12 payments of £125 a year.

My preferred approach then is to sell a conservative estimate of this cash flow, say £100 NPV a year for the last 12 years of the 25 year period. In cash terms this sale would be in the j -th year after graduation $100(1 + GCB + inflation)^j$, for $j=14,15,\dots,25$, where inflation is 0.02 and $GCB = 0.022$, which is the government's cost of borrowing in real terms¹⁸.

¹⁷ In practice a number of universities might just borrow the money from a bank on a long maturity loan and pay this liability off through time as the cohort's payments arrive.

¹⁸ It is tempting to sell an index-linked cash flow as the cohort's payments should be roughly indexed-linked. However, this would mean the university would be exposed to an unbounded liability, which is unattractive.

The university would have to fund each year the difference between the cohort's payments (income) and this sold cash flow (cost) from its balance sheet. If the payments were high compared to what was sold then this would add to the balance sheet of the university in future years, if they were low, then the university would have to supplement the cash flow from other income. By selling a conservative cash flow I would hope most of these adjustments would be beneficial.

Financially this is the same as selling a bond. How much would it be worth? Write R to denote its value, then it should be roughly worth $R = 100 \sum_{j=14}^{25} \theta^j$, where $\theta = (1 + GCB + inflation)/(1 + r)$, where r is the interest rate the university can borrow at over a 25 year period¹⁹. For the government $r = 0.0461$ ²⁰ on 7/4/10, which roughly would be the number a university with a AAA credit rating can borrow at. Then $\theta = 0.9963$, so $R = 100 \times 11.16 = \text{£}1,116$. This is less than $\text{£}1.2\text{k}$ simply due to the government cost of borrowing being slightly low at the moment, for the government's cost of borrowing is close to the long-run interest rate on gilts. The effect of the interest rate can be seen from the following. If $r=0.0561$ or $r=0.0661$, delivers $\theta=0.9866$ or 0.9774 and so R is $\text{£}923$ or $\text{£}707$. Universities with strong credit ratings, close to AAA, will obtain a rate which is close to 0.0461 ²¹ and can carry out this financing as efficiently as the government²².

An important aspect of this bond sale is that the value of the bond is much lower than the face value of the deferred fees $\text{£}3\text{k}$. The sale would be worth roughly $\text{£}1.1\text{k}$. The reason for this is (i) many graduates will not be able to afford to pay the deferred fees, (ii) some students will pay upfront, (iii) I am suggesting selling a conservative estimate of the cash flow.

2.2.5 Subject-specific deferred fee at a single institution

Universities currently receive very different amounts of income for teaching different subjects, due to HEFCE's subject premiums. However, UK and other-EU graduates face the same funded fee whatever and wherever they study. Under deferred fees this would change, with the level of fees varying between institutions. A different question is whether it should vary within institutions, with some courses having higher deferred fees than others.

In my view the main difficulty with course fee variability is that this makes the system more complicated to the student when they are making up their mind what and where to study. Most US universities have equal fees whatever major the students opt for. This is partly because their liberal arts approach admits students to an institution, not a course, and only requires them to choose a major after one or two years of study, and then allows them to change majors easily. The UK system is more subject focused, which opens up this question anew.

I will use the following nomenclature in this discussion: Deferred fees = standard deferred fee + subject-specific deferred fee. Each element would be set by the university.

¹⁹ R is a "finite geometric procession" so it is well known it can be reexpressed as $R = 100(\theta^{14} - \theta^{26})/(1 - \theta)$.

²⁰ Source FT, April 7, 2010 computed using Treasury Bond 4.5% redemption in 2036.

²¹ Corporate bond spreads between a bond and a AAA rated bond, using the FTSE Sterling Corporate Bond Yields Index, on 12/4/10 were AA: 0.217. A: 0.326. BBB: 0.61.

²² Standard & Poor's have rated King's College, London and Lancaster University, which have issued bonds in the past, AA. Sheffield and Nottingham are currently rated AA-. Cambridge University have announced plans to sell a bond worth up to $\text{£}300\text{M}$ but I don't know of their credit rating. St Peter's College, Oxford was rated AAA by Fitch. Selling bonds is common place amongst leading US universities. In 2006 the Wellcome Trust listed a 30 year bond and raised $\text{£}550\text{M}$. More recently it raised $\text{£}275\text{M}$ through a 12 year issue. The Trust has an AAA rating, which is the same as that of the government. It is useful to note that the Wellcome Trust typically tries to sell bonds: (i) to the same value as its cash position, so that it is "fully invested", (ii) have the coupons on its bond covered by the rental income from its residential portfolio which is regarded as a very safe covenant. These are sensible conservative rules for a charity to use and should certainly be thought through by any university going down this route.

There is an argument that non-professional courses, such as physics and engineering, which receive HEFCE subject premiums, should have a zero subject-specific deferred fee. The reason is that the state is paying extra funded fees for these course – an extra scholarship to students. Thus if better off graduates pay more back because they studied this subject, the money should naturally go back to the state in the first instance.

Perhaps the strongest case for subject-specific deferred fees are courses which do not attract HEFCE premiums but are related to highly paid professional pathways and are massively oversubscribed. The leading examples would be law and management courses.

Financial summary.

Charge close to the government's cost of borrowing on financial support.

- Makes a significant financial difference to the long-run position of higher education sector.
- Does not help in the short-term due to the way the public accounts work.
- Poorer graduates would be entirely protected by this reform.

Deferred fees. They:

- Are estimated to yield about 2/3 of their face value to an average university.
 - Graduates who pay will typically be on higher rates of income tax and start paying after their early 30s and pay them off after about 3 more years (relative to when they pay off their standard financial support).
 - Graduates with low earnings pay nothing.
- ¾ of their long-run value will take up to 25 years to be collected.
- This 25 year cash flow can be capitalised by working with a bank.
 - Allow much of this income to be spent now improving the quality of higher education.
 - Universities with poor credit ratings could work with the state to capitalise the value at no short or long-term fiscal cost.

In the long-run move to making the cost of living support simpler by replacing grants and bursaries with a higher level of student financial support. This either

- Improves the short-term fiscal position, or
- Allows the number of students to grow substantially.

3. Part-time students

Part-time and continuing education is becoming increasingly important in the UK as the population lives longer and individuals need to refresh or reinvest in their professional skills or develop new interests outside their workplace. Educational Savings Accounts could be used to pay for tuition fees for part-time or further education. Further, part-time students can be helped by making it easier to use salary sacrifice schemes to pay for their tuition costs. If their salaries are low then it may make sense to allow access to the efficient student financial support system discussed above, but solely

for funding tuition costs. As there are no living costs to repay it is likely to that this kind of funding will be repaid and quite quickly and so be relatively cheap to provide.

4. Conclusion

I have argued for a simpler, fairer, more fiscally responsible and flexible form of university funding and student support. This system is designed to encourage a diverse higher education sector where high quality provision can flourish. The main points of the new system are:

1. Make student financial support available to cover all tuition and a modest cost of living.
2. Allow graduates to repay according to earnings with protection for poorer graduates.
3. Call HEFCE grants “scholarships” and make students aware of their value.
4. Cap the level of funded fees plus HEFCE grant at the current level.
5. Allow universities to charge deferred fees.
 - a. When they are paid the money goes to the student’s university not to the state. These fees have no fiscal implications.
 - b. Bring some of the cash flow from deferred fees forward by working with a bank.
6. In the long-run move to making the cost of living support simpler by
 - a. Providing more realistic cost of living support for all students.
 - b. Removing means-tested university bursaries for cost of living expenses.
 - c. Removing means-tested grants to students provided by the state.

This builds on England’s higher education structure. The changes are simple to implement. It would set up a stable funding structure for our universities and our students.

References and additional reading

Barr, N. (2004) “Higher education funding,” *Oxford Review of Economic Policy*, 20, 264-283

Barr, N. & A. Johnston (2010) “Interest subsidies on student loans: a better class of drain,” Discussion paper 114, London School of Economics: Centre for the Economics of Education, March 2010, <http://cee.lse.ac.uk/cee%20dps/ceedp114.pdf>.

Bekhradnia, B. and W. Massy (2009) “Vouchers as a mechanism for funding higher education,” HEPI.

Chowdry, H., C. Crawford, L. Dearden, A. Goodman and A. Vignoles (2010) “Widening participation in higher education: analysis using linked administrative data,” Institute of Fiscal Studies, working paper W10/04.

Dearden, L., E. Fitzsimons, A. Goodman & G. Kaplan (2008) “Higher Education Funding Reforms in England: the distributional effects & the shifting balance of costs”, *Economic Journal* 118, F100-125.

Dearden, L, A. Goodman, G. Kaplan and G. Wyness (2010) “Future arrangements for funding higher education,” www.ifs.org.uk/comms/comm115.pdf

Institute of Fiscal Studies (2010) “ Reforms to tuition fees and student support had no overall impact on the number of 18 or 19 year olds attending university in England,” press release, 28th January, 2010.

Keys, B.J., T. Mukherjee, A. Seru and V. Vig (2010) “Did securitization lead to lax screening? Evidence from subprime loans,” *Quarterly Journal of Economics*, 125, 307-362.

Laidlaw, S. (2009) “Stronger Together: business and universities in turbulent times,” report of the CBI’s Task Force on Higher Education. highereducation.cbi.org.uk/uploaded/CBI_HE_taskforce_report.pdf

National Union of Students (2009) "Broke and broken: a critique of the higher education funding system," www.nus.org.uk/PageFiles/3115/Brokeandbroken.pdf

National Union of Students (2009b) "NUS Press Pack 2009-2010. Higher Education Student Finance."

National Union of Students (2010) "Accommodation Costs Survey 2009/10," http://resource.nusonline.co.uk/media/resource/WEB_SW_NUS_UNIPOL_Microsoft%20Word%20-%20Accommodation_Costs_Survey_2010_FINAL.pdf

Office of Fair Access (2009) "Annual Report and Accounts," www.offa.org.uk/wp-content/uploads/2009/08/090611-office-for-fair-access-annual-report.pdf

Shephard, N. (2010) "Submission to the review on Higher Education funding and student finance, 1st call for evidence," www.oxford-man.ox.ac.uk/~nshephard/submissionto140110.pdf

Structure of the Appendix

- A. Modelling of losses from student financial support.
- B. What the UK should not do.
- C. Deferred fees from different perspectives.
- D. Directly responding to the evaluation criteria.

Appendix D is still in draft form so is currently not in the public domain.