

Annex

**Estimating the changing cost of the
English Higher Education system to
taxpayers and students**

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Summary

We estimate the variation in the taxpayer cost versus the graduate cost of the various English Higher Education systems from 2011 up to the current system. We also estimate the future potential changes in the balance of these costs under the recommendations made by the independent panel for the Post-18 Review of Education and Funding. This analysis has been provided by the Department for Education to support the work of the Review.

Introduction

This note compares the taxpayer versus graduate contribution to English, full-time undergraduate Higher Education under four funding systems – the pre-2012 system if it existed today; the 2012-2015 system (as reformed in 2012), the 2016-2018 system (as reformed in 2016) and the current system (as reformed in 2018). We also compare these with the system as recommended by the independent panel for the Post-18 Review of Education and Funding. The key features of each are set out below:

1. **Pre-2012 system:** means-tested maintenance grants, up to a maximum of £3,299 in 2018/19 values, with approximately 40% of students entitled to a full grant. Tuition costs predominately met through direct Higher Education Funding Council for England (Higher Education Funding Council for England (HEFCE); now Office for Students) grants to Higher Education Institutions, with a £3,000 yearly tuition fee cap (approximately £3,465 in 2018/19 values) for full-time undergraduates. Student loans repaid at a rate of 9% of earnings above the repayment threshold (£18,330 in 2018-19). Interest accrued at a rate of RPI or the Bank of England base rate +1%, whichever is lower; all debt is written off at age 65 or 25 years following the statutory repayment due date (SRDD), whichever comes first.
2. **2012-2015 system:** means-tested maintenance grants, up to a maximum of £3,593 in 2018/19 values, with approximately 40% of students entitled to a full grant. Teaching Grant funding decreased and focused on high-cost subjects; and tuition fee loans of approximately £9,000 per year for full-time undergraduates (inflating by RPIX inflation from 2016 onwards), repaid at a rate of 9% of earnings above the repayment threshold (£21,000 in 2018-19), and with interest accrued at a rate of RPI+3% while students are on courses, and at a rate of between RPI and RPI+3% depending on earnings once a borrower has entered repayment; all debt is written off at 30 years following the SRDD;
3. **2016-2018 system:** a system of maintenance loans rather than grants for all students; HEFCE funding, tuition fees and repayment terms as per the 2012-2015 system;

4. **Post-2018 system:** as with the 2016-2018 system, with tuition fees frozen at £9,250 in academic year 2018/19 and 2019/20, and the repayment threshold increased to £25,000 in 2018-19, rising by average earnings thereafter.
5. **Post-18 Review Panel's (P18R) recommended system:** a system of means-tested maintenance loans and grants for all students; tuition fee loans set at a maximum fee cap of £7,500 per year for full-time undergraduates, frozen in all years up to 2022/23 and rising by RPIX in subsequent years. The drop in the fee cap is replaced by a top-up Teaching Grant in cash terms¹. Loans are repaid at a rate of 9% of earnings about the repayment threshold (set at median non-graduate earnings of around £25,000 in 2021-22, rising by average earnings in subsequent years), and with interest accrued at a rate of RPI while students are in study, and at a rate of between RPI and RPI+3% depending on earnings once a borrower has entered repayment, with the interest thresholds rising in line with the repayment threshold; all debt is written off at 40 years following SRDD or when cumulative real term repayments of the borrower exceed 20% of their debt at SRDD;

¹ As part of the proposals for reduced fees, the panel also proposes that the Teaching Grant would be increased to keep average per-student funding at the same nominal level as it is now, but with subject funding levels altered to better support high-cost subjects.

Methodology

The cost to the taxpayer under each system is calculated as the sum, on a full-time per student basis, of HEFCE grant funding, maintenance grant and the 2018/19 value of maintenance and tuition fee loans that are ultimately not repaid. Important to the calculation of unpaid loans is the Resource Accounting and Budgeting (RAB) charge, which is explained in the box below.

To estimate the cost to the taxpayer we use the following equation, adjusting loan values to account for self-funding students:

$$\text{cost to taxpayer} = \text{Teaching Grant} + \text{Maintenance Grant} + \\ (\text{Maintenance Loan} + \text{Fee Loan}) \times \text{RAB charge}$$

The RAB charge

The RAB charge is the estimated cost to Government of borrowing to support the student finance system. It measures the proportion of student loan outlay that is expected not to be repaid within borrowers' repayment terms, when future repayments are valued in present terms (using the HM Treasury discount rate – currently RPI+0.7%).

For each system considered, the RAB charge is estimated on the basis of the 2016/17 cohort of students passing through it, and this cohort of students is also the basis for all the calculations completed in this note – this is to control for any differences in the characteristics of students (e.g. future earnings pathways).

The student contribution is similarly calculated as the carrying value of the per student maintenance and tuition loan outlay, adjusted to account for self-funding students, which is the amount of loan that the graduate pays back over their lifetime:

$$\text{cost to graduate} = (\text{Maintenance Loan} + \text{Fee Loan}) \times (1 - \text{RAB charge})$$

HEFCE grant figures per full-time student are an estimate of the totals provided through its recurrent teaching grants to higher education institutions for full-time undergraduates each academic year, rounded to the nearest £1 million. Some teaching grants have been subject to calculations that apply at the level of the whole institution, rather than for separate student categories, or in some cases have been informed by factors other than student numbers. Where this is the case, reasonable pro rata assumptions have been used to attribute a proportion of the total grant per full-time student.

Grants (and student numbers) attributable to further education and sixth form colleges have not been included for the purpose of this analysis. Research grants are also excluded for the purpose of this analysis.

As most of the average values for the post-2018 system are unknown, we make the assumption that the HEFCE grant figures, maintenance and fee loans per full-time student

for the post-2018 system will be the same as the 2016-2018 system for illustrative purposes, with a deflation adjustment to the fee loan to account for the fee freeze.

Table 1 sets out our key assumptions, sources and results. Expenditure is expressed on an average per full-time student basis, uprated by RPIX to 2018/19 values. Note that the figures shown here will not match figures that feed into the student loan repayment model, as they have been adjusted to account for students who do not take-up student loans.

Table 1 – Assumptions and data sources for pre-2012, 2012-2015, 2016-2018 and post-2018 systems

System	Pre-2012	2012-2015	2016-2018	Post-2018
HEFCE teaching grant	£4,300 <i>HEFCE internal estimates for funding allocations for 2010/11</i>	£1,000 <i>HEFCE internal estimates for funding allocations for 2016/17</i>	£1,000 <i>HEFCE internal estimates for funding allocations for 2016/17</i>	£1,000 <i>HEFCE internal estimates for funding allocations for 2016/17</i>
Maintenance grant²	£1,500 <i>SLC SFR 2011/12, table 3a</i>	£1,600 <i>SLC SFR 2018/19, table 4A(i)</i>	£0	£0
Maintenance loan³	£3,600 <i>SLC SFR 2011/12, table 4Ai</i>	£3,900 <i>SLC SFR 2018/19, table 3Ai</i>	£5,800 <i>SLC SFR 2018/19, table 3Ai</i>	£5,800 <i>SLC SFR 2018/19, table 3Ai</i>
Fee loan	£3,400 <i>SLC SFR 2011/12, table 4b</i>	£8,200 <i>SLC SFR 2018/19, table 4Bi</i>	£8,200 <i>SLC SFR 2018/19, table 4Bi</i>	£7,750 <i>SLC SFR 2018/19, table 4Bi</i>
RAB charge	30%	25%	30%	45%
Reference academic year	2010/11	2015/16	2016/17	2016/17
Total Full time student numbers⁴	1,068,010	1,102,825	1,138,855	1,138,855

*Note: expenditure is rounded to nearest £100

The methodology for estimating the cost of the P18R system is different to the above, because this system has not yet been introduced and requires certain assumptions to be

² The 2016-18 and post-2018 systems maintenance grant is assumed to be £0 per student, based on the policy that new students are no longer entitled to grants, although in practice a small number of students may have legacy entitlement.

³ For 2016-18 and post-2018 systems maintenance and fee loan (also the 2012-2015), the per student average was derived from [SLC Student Support for Higher Education in England SFR data](#) and excluded students on pre-2016 systems. Maintenance is calculated as £6,100, adjusted for a take-up rate of 89%, then uprated by RPIX to 2018/19 prices. Tuition for the 2016-18 system is calculated as £8,200, adjusted for a take-up rate of 93%, then uprated by RPIX to 2018/19 prices. Tuition for the post-2018 system is downrated by two years, to account for the two year fee freeze.

⁴ The source of these data is [HESA](#) full-time, undergraduate, student volumes 2010/11 and 2016/17, Tables 7b, 7c and 11a. 2016/17 HESA volumes are used for the 2016-2018 and post-2018 systems as the most

made about the take-up of the new fees, maintenance loans and grants, as well as the size of the teaching grant. These are identified in Table 2.

Table 2 – Assumptions made for loan and grant take-up in P18R system

Cost Element	Assumption	Likelihood of Assumption
Fee loan	Students currently taking out a fee loan <u>at</u> the current fee cap, will take a fee loan equal to the new cap	High
Fee loan	Students currently taking out a fee loan <u>above</u> the new cap, will take a fee loan equal to the new cap	High
Fee loan	Students currently taking out a fee loan below the new cap, will take out the same fee loan as currently, rising by RPIX year-on-year to the level of the new cap	Medium
Maintenance grant	Students will take up the full amount of grant entitlement that they have, which we assume to be £3000 (2020/21 prices) for those with the highest entitlement	High
Maintenance loan	Students currently taking up their full maintenance entitlement, will continue to take up their full new entitlement	High
Maintenance loan	Students currently taking up less than their current full entitlement, will continue to take out the same amount of entitlement, uprated to the appropriate year of take-up	Medium
Maintenance loan	Students currently taking up no maintenance loan will continue to not take up any maintenance loan	High
Teaching grant	Same as the post-2018 system, but with the difference between the post-2018 and P18R fee added to the average to account for the top-up that replaces the drop in the fee cap.	Medium
Teaching grant	The P18R recommendation is that the teaching grant will be frozen in cash terms up to 2021/22. Therefore we reduce the post-2018 system T-grant and top-up by RPIX inflation increases from 2018 to 2021 to produce figures on a 2018/19 basis.	Medium

recently published and are taken from Fig. 8 in the Higher Education Statistics SFR. These figures include Home and EU full-time undergraduate students in English HEIs and English students in the rest of the UK. These numbers are used to break the HEFCE teaching grant down into a per student average.

Once the assumptions have been made, we apply them to historical SLC data for individual loan borrowers to assess what their future loan take-up will be under the P18R system. We can then calculate average tuition, maintenance loan and grant estimates to use in the calculations here. This same data is fed into the DfE Student Loan Repayment Model, in order to estimate the RAB charge. Table 3 gives an overview of these estimates.

Table 3 – Assumptions for P18R system (2018/19 values)

System	Value	Source
HEFCE teaching grant	£2,200	Post-18 average grant, with an additional £1,750, deflated by three years to £1,600, to reflect the grant freeze
Maintenance grant	£1,300	Estimated using assumptions in Table 2 and policy conditions, to assess average value per loan borrower (across all loan borrowers)
Maintenance loan	£4,400	Estimated using assumptions in Table 2 and policy conditions, to assess value per loan borrower
Fee loan	£5,800 ⁵	Estimated using assumptions in Table 2 and policy conditions, to assess value per loan borrower
RAB charge	30%	Using the DfE Student Loan Repayment Model, and loan values estimated above
Reference academic year	2016/17	For consistency with the other systems

*Note: estimated expenditure is rounded to nearest £100

It is worth noting that the values shown in Table 3 represent the DfE’s central estimates for what average loan amounts could look like, if future students were to show no changes in their behaviour. However, if take-up were to increase, these average values could also increase by anything up to the maximum loan and grants. We discuss the sensitivity of these assumptions in the Results section.

⁵ This value is much lower than £7,500 because it is an average value (taking into account fee waivers, etc) but also captures the impact of the further three year freeze that forms part of the P18R recommendations.

Results

Based on the assumptions set out in Tables 1-3, Table 4 summarises the annual and three-year cost to the taxpayer of supporting a full-time undergraduate student through university. Table 5 shows the same summary for the graduate. All costs are uprated by RPIX to 2018/19 values and represent the system costs once fully implemented (i.e. the P18R system includes three more years' worth of fee freezes).

Table 4 – Annual cost to the taxpayer for the Pre-2012, 2012-2015, 2016-2018, Post-2018 and P18R systems

System	Cost to taxpayer per student / year	Total cost to taxpayer per student (based on three-year course duration)	Percentage difference from pre-2012 system
Pre-2012 system	£7,700	£23,200	
2012-2015 system	£5,700	£17,000	-25%
2016-2018 system	£5,100	£15,400	-35%
Post-2018 system	£7,000	£21,100	-10%
P18R system	£6,500	£19,600	-15%

*Note: figures have been rounded to nearest £100

Figure 1⁶ shows the change in the balance between taxpayer costs per student and the graduate contribution to higher education, based on the calculations above.

⁶ There is a limitation in this analysis in that a student's own contribution to living costs is not taken into account. An implicit assumption exists that families with higher household incomes provide some support for living costs. This means that there will be some understatement of the full student contribution.

Table 5 – Annual cost to the graduate for the Pre-2012, 2012-2015, 2016-2018, Post-2018 and P18R systems

System	Cost to graduate per student / year	Total cost to graduate per student (based on three-year course duration)	Percentage difference from pre-2012 system
Pre-2012 system	£5,000	£15,100	
2012-2015 system	£8,900	£26,800	80%
2016-2018 system	£9,800	£29,400	95%
Post-2018 system	£7,400	£22,300	50%
P18R system	£7,100	£21,300	40%

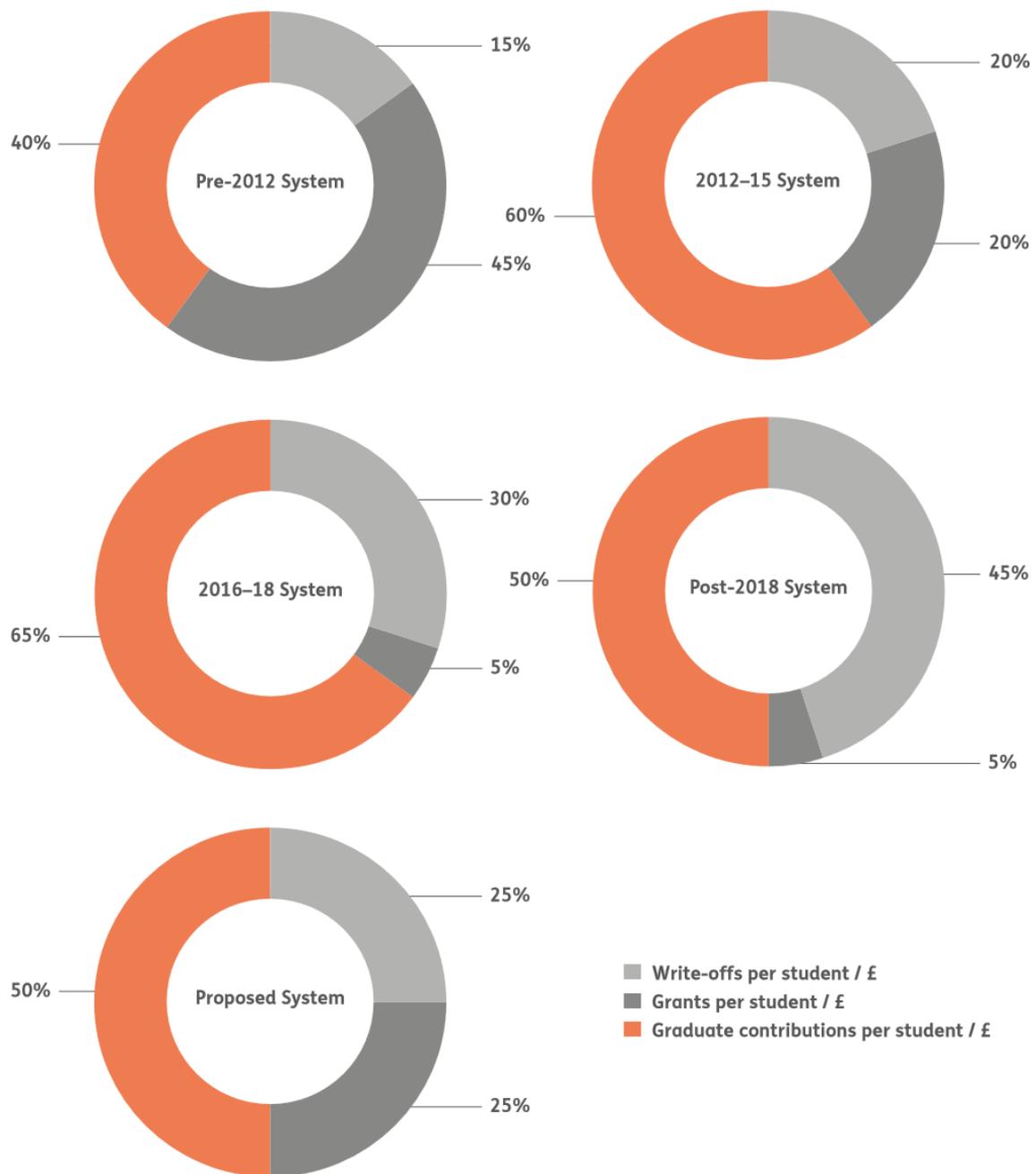
*Note: figures have been rounded to nearest £100

This shows that the effect of Government reforms has been to shift the cost of obtaining an undergraduate degree from the taxpayer to the student, with the taxpayer meeting 50% of the cost under the post-2018 system compared to 60% if the pre-2012 system was in operation today.

The recommendations of the panel will not create any noticeable difference in this balance of contributions between the taxpayer and the graduate⁷. Although fundamentally the P18R system relies further on grant contributions from the taxpayer than the post-2018 system, the changes to graduate repayment terms lower the RAB charge, resulting in a rebalancing of student loans towards a bigger graduate contribution, and thereby retaining the overall balance of contributions. Whilst this balance hasn't changed, the overall contributions from both the taxpayer and the graduate have decreased, due to the impact of the fee freeze.

⁷ Note that there is a small difference that disappears in the rounding: the taxpayer contribution is 49% under the post-2018 system compared to 50% under the P18R system.

Figure 1 – Balance of Contributions between the taxpayer and graduate



*Note: charts have been rounded to nearest 5% due to the uncertainty associated with these calculations

Sensitivity of Parameters

As noted above, the levels of maintenance loans, grants and tuition loans taken out in the P18R system are sensitive to the assumptions made. If these assumptions prove to be inaccurate, that could result in the balance of contributions being similarly inaccurate. We test this by increasing the estimated average maintenance grant, loan and tuition loan by 10% and 30%. In both scenarios, the balance of contributions remains mostly static, shifting by 1-2 percentage points towards the graduate. This is not unexpected, due to the low RAB charge of 30%.

We then test how far we would need to shift the maintenance loans, grants and tuition loans in order to shift the balance of contributions by 5% towards the graduate. We find that we would need to double the averages assumed here in order to have that sort of impact. These sort of increases seem very unlikely given that there was very little behavioural change experienced between 2012-2015 and 2016-2018 systems, when maintenance grants were originally removed. Furthermore, this analysis indicates that the balance of contributions is less sensitive to the levels of loan/grant take-up than might be expected.