

Annex

Assessing the Impacts of HE Student Finance Systems by earnings decile

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Summary

We estimate the impact of the student finance recommendations made by the Post-18 Review independent panel on a cohort of student loan borrowers, split into lifetime earnings deciles. This analysis has been provided by the Department for Education to support the work of the Review.

Introduction

This note estimates the value of the RAB charge and average repayments made across the lifetime of the predicted 2021 cohort of Plan 2, full time Higher Education loan borrowers, split by decile of lifetime income¹. These repayments are estimated 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. HEFCE 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;

¹ For our purposes, lifetime income is defined as total estimated income per loan borrower, in 2014-15 prices.

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 2012-2016 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 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 terms. 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 the SRDD or when cumulative real term repayments of the borrower exceed 20% of their debt at SRDD;

Methodology

All of the analysis shown here estimates the distributional impact on a cohort of 2021/22 loan borrowers, under the assumption that each student finance system represents their student finance system. The analysis **does not** assess the impact of historical student finance systems on historical cohorts of students.

This analysis is completed by running the DfE student loan repayment model², set to output individual results per student loan borrower. These results include cumulative repayments per borrower, deflated by various measures, which are then divided into income deciles, based on each loan borrower's total income (14-15 prices) across their earning lifetime (see Table 2 for average incomes per decile). Repayments are averaged across the deciles and the RAB charge is also calculated for each decile.

In order to simplify this process and avoid the inclusion of unexpected behaviours, the loan borrower sample file that is read into the student loan repayment model is modified to only include the 2021/22 cohort of student loan borrowers, with their maintenance and fee loan values adjusted to reflect each of the student finance systems, as set out in Table 1 below. The student loan repayment model is also modified to reflect each of the student finance systems, and these are also listed in Table 1. More detailed caveats are also given below.

Caveats

For simplicity, we have assumed that all the loan borrowers in this cohort are taking out their first student loan (i.e. have no previous Plan 1 or Plan 2 loan balances). We also assume that none of the students complete a PGCE following completion of their course.

Once in repayment, we set all repayments to come through the HMRC PAYE system. We turn off all voluntary or overseas repayments. We also assume that all income comes through their earnings (i.e. income from investments is set to zero for all borrowers).

As part of this methodology, we assume that the behaviour of our 2021 cohort will be identical irrespective of the student finance system they are part of. Therefore, we assume that drop-out behaviour will be consistent across the systems, as will the proportion of students studying different course types and levels.

² For a more technical overview: [DfE HE Student loans forecast model](#)

Table 1 – Modifications made to the cohort student borrower sample and student loan repayment model (2017/18 prices)

System	Pre-2012	2012-2015	2016-2018	Post-2018	P18R³
Average maintenance loan⁴	£3,900	£3,900	£5,800	£5,800	£4,400 ⁵
Average fee loan	£3,400 ⁶	£8,200 ⁷	£8,200 ⁷	£7,500 ⁸	£6,700 ⁹
Repayment period	25 years	30 years	30 years	30 years	40 years
Repayment threshold in 2021-22	£20,095	£21,515	£21,515	£27,020	£24,845
Interest rate (in-study)	Minimum of RPI or BoE+1	RPI+3%	RPI+3%	RPI+3%	RPI
Interest rate (post-study)	Minimum of RPI or BoE+1	RPI-RPI+3% (scales with income)	RPI-RPI+3% (scales with income)	RPI-RPI+3% (scales with income)	RPI-RPI+3% (scales with income)

**Note: average maintenance and fee loans are rounded to the nearest £100*

³ This system also has the repayment cap introduced into the modelling

⁴ Loan borrower maintenance loans are set to rise by RPIX inflation each year

⁵ The average maintenance loan decreases under the P18R system due to the re-introduction of a maintenance grant

⁶ Loan borrower fee loans in this system are set at £3,465 in 2017/18, rising by RPIX inflation in subsequent years

⁷ The fee cap in this system is fixed at £9000 up to 2016/17, rising by RPIX inflation in subsequent years

⁸ Loan borrower fee loans in this system are frozen at £9,250 in 2018/19 and 2019/20, and rising by RPIX inflation in subsequent years

⁹ Loan borrower fee loans in this system are frozen at £7,500 for 2021/22 loan borrowers up until 2022/23, and rising by RPIX inflation in subsequent years

Table 2 – Typical lifetime incomes per decile (2014/15 prices)

Decile	Average lifetime income
1	£92,600
2	£329,100
3	£505,100
4	£628,600
5	£739,900
6	£839,600
7	£928,200
8	£996,000
9	£1,095,100
10	£1,634,900

**Note: average figures shown in 2014/15 prices for cumulative lifetime income, rounded to the nearest £100*

Results

Distributional Impact of Historical and Current Student Finance Systems

Based on the methodology described above and the assumptions set out in Tables 1, Figures 1-3 show the lifetime repayments of our 2021 cohort of loan borrowers by decile. These three different charts are all based on the same repayments, but deflated in a series of different ways.

Figure 1 below shows repayments discounted by the HMT discount rate. These repayments are used to calculate the RAB charge (see Figure 4) and they reflect how repayments are accounted for when considering the taxpayer cost of subsidy.

Figure 1 – Lifetime repayments (2021-22 prices), discounted using the HMT discount rate (RPI+0.7%), per income decile

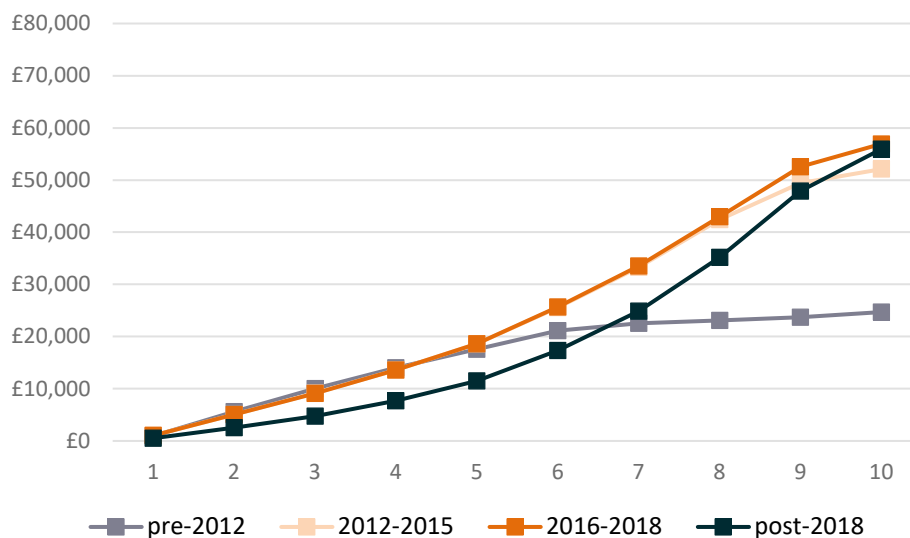


Figure 2 shows these same averaged repayments, deflated by CPI. This is what we consider to be the best measure of relative prices (as defined by general consumption patterns), and these repayments reflect the price of doing a degree. This is the same measure used by the Institute for Fiscal Studies when creating distributional charts and is most appropriate for comparison with their calculations.

Figure 2 – Lifetime repayments (2021-22 prices), deflated by CPI, per income decile

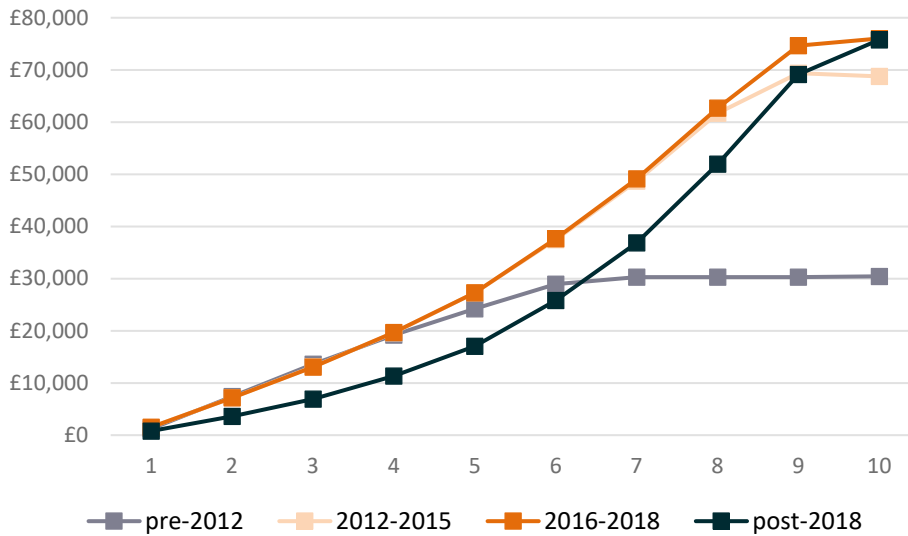
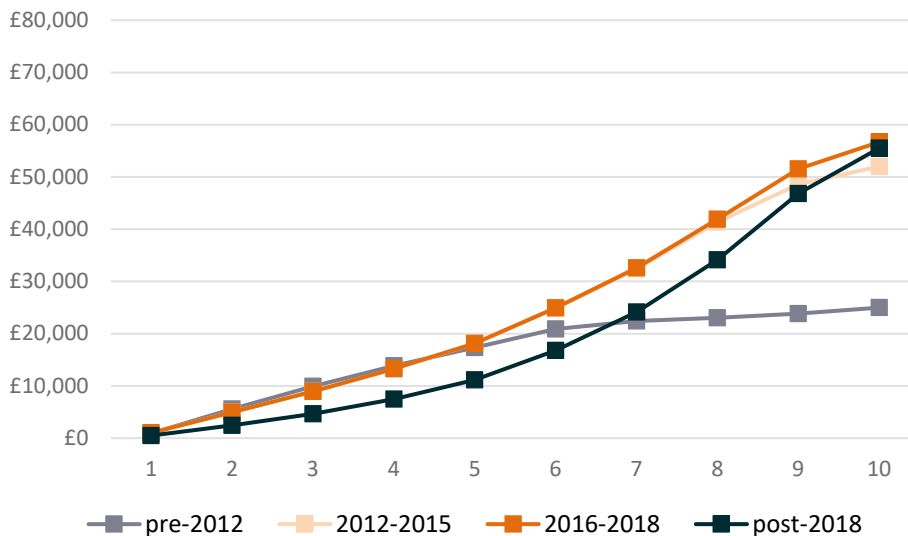


Figure 3 shows these same lifetime repayments, deflated by average earnings. This chart reflects the affordability of doing a degree from the point of view of the loan borrower.

Figure 3 – Lifetime repayments (2021-22 prices), deflated by average earnings, per income decile



Broadly these three charts show that, should this cohort of students be put through the pre-2012 student finance system, their repayments would be the same or lower than in the other systems, particularly in the top five deciles. This is largely due to the lower debt at SRDD, combined with the repayment threshold being so much lower than the other systems, and the interest accrued being static despite the loan borrowers' earnings profiles. However, comparing the lower deciles against the current post-2018 system shows that these borrowers repay even less than they did in the pre-2012 system, which is due to the higher repayment threshold in post-2018 compared to the pre-2012 system.

In comparison, the other three systems all show much higher repayments at the highest deciles, largely driven by the increased fee level and subsequent interest accrued being linked to loan borrowers' earnings. The post-2018 system shows lower repayments for all deciles, compared with the other two Plan 2 systems, which reflects the increase in the repayment threshold – they are unable to make enough repayments during their repayment period to fully repay their debt. The 2012-2015 and 2016-18 systems are largely identical below the seventh decile, which reflects repayments leading up to a write-off. We expect loan borrowers in deciles 7-10 to largely repay their loans in full, which explains the deviation in repayments at these deciles, reflecting the increase in the average maintenance loan and leading to more interest accrued, and therefore higher repayments.

Figure 4 – RAB charge per income decile

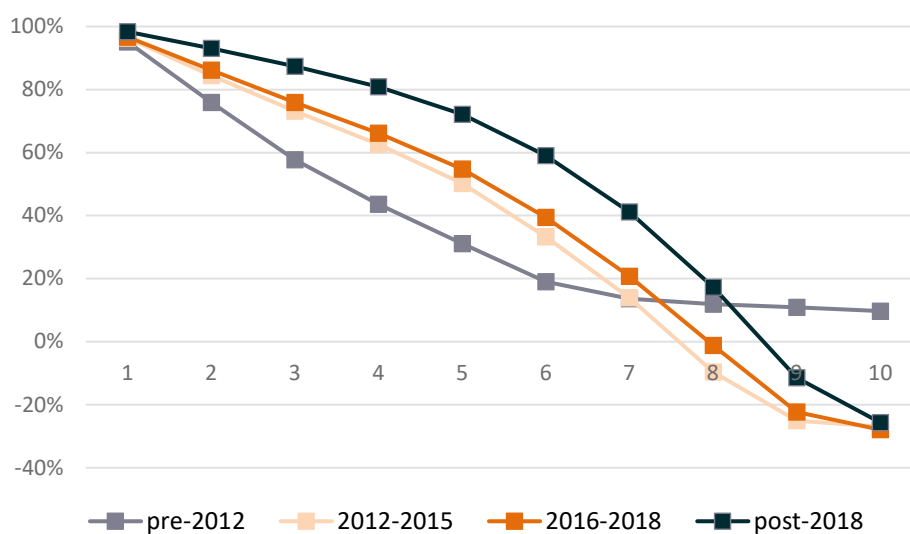


Figure shows the RAB charge per income decile, based on the net present value of repayments, divided by the total outlay per loan borrower. In the pre-2012 system, the RAB charge never reaches zero, even in the top decile where we expect the majority of loan borrowers to fully repay. This is because of the very low rate of interest being charged in the pre-2012 system – while a substantial proportion of learners repaid their loan in full, the value of these repayments is lower than if they had been repaid immediately. If the HMT discount rate was still set at RPI+2.5%, the top deciles would have a flattened distribution at a RAB charge of ~0%. Since the improvement to the Government rate of borrowing, the distribution flattens out at around 11% at the top deciles.

All the other systems show negative RAB charges at the top deciles. This is because loan borrowers in these deciles repay all of their student debt, as well as the additional interest accrued. Moreover, a shallower gradient is observed between deciles 9 and 10, which reflects the point that the highest earners repay quite quickly and do not accrue as much interest as the middle-high earners, resulting in those borrowers in decile ten not paying back much more than the middle-high earners.

At the low to middle deciles, we see that the RAB charge gets consistently higher as we move from 2012-2015 systems to the current post-2018 system, which is largely due to the increase in the repayment threshold, as well as their increased level of debt at graduation compared to other systems.

Distributional Impact of Panel Recommendations

In this section, we compare the distributional impact of the P18R system with the pre-2012 system, the current 2016-2018 and post-2018 systems. Figure 5 illustrates this on a repayment basis, deflated by CPI. Across the low deciles (< 4th decile), repayments will increase by a small amount from a low base for the loan borrowers under the P18R system, compared with the pre-2012 and 2016-2018 systems, although they will be higher than under the post-2018 system due to the change in the repayment threshold and the extension to the repayment period. Between deciles 4 to 8, repayments will decrease compared to the 2016-2018 system, as the repayment threshold is moved up, but increase compared to the current post-2018 system as the repayment threshold drops compared to that system and the repayment period is extended. At the top end of these deciles, the effect of reducing tuition fees becomes apparent, as student debt at SRDD is reduced and their overall repayments are cut overall.

In contrast, loan borrowers in the top earnings deciles will see their repayments drop compared to the 2016-2018 and post-2018 systems, although they will still be substantially higher than the pre-2012 system due to the higher loan levels. This drop in repayments is largely due to the smaller loan amounts and decreased in-study interest accrued.

Figure 5 – Lifetime repayments (2021-22 prices), deflated by CPI, per income decile

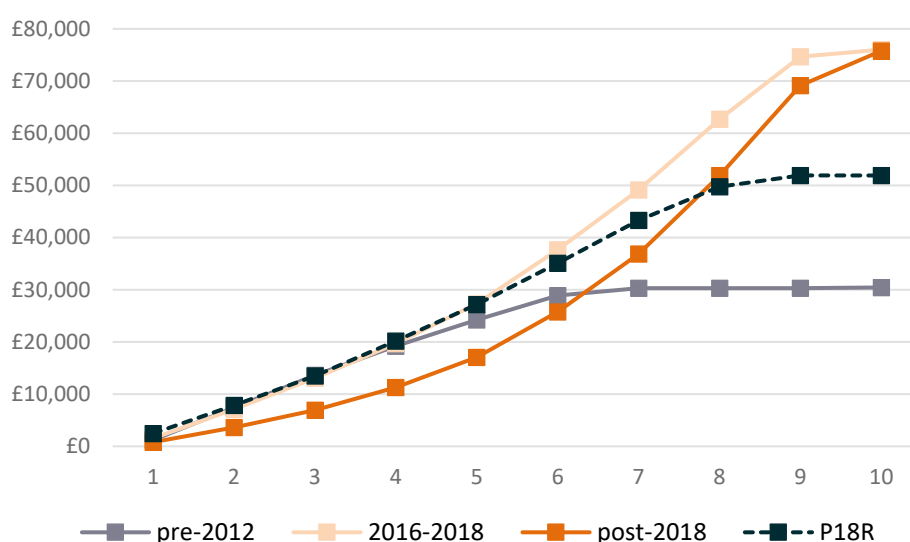


Figure 6 compares the RAB charge across the earnings deciles for the P18R system against these same three systems. It should be noted that these decile charts only cover loans: the P18R system is applying to considerably smaller loan balances than the two previous systems. Unlike the repayments chart, the distribution of RAB charges across the

deciles sits pretty squarely in between the pre-2012 and post-2018 systems. The P18R system follows a similar RAB trajectory to the 2016-2018 system for deciles 1-8, at which point it diverges, and this is due to the loan borrowers at the highest deciles having less debt overall to repay.

Figure 6 – RAB Charge per income decile

