Institute for Fiscal Studies

Analysis of the higher education funding reforms announced in Summer Budget 2015

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Executive summary

In the Summer Budget on 8 July 2015, the Chancellor announced plans for several important changes to higher education funding and student support:

- Maintenance grants – worth up to £3,500 per year and currently available to around half of students from the lowest-income households – will be scrapped from 2016–17 and replaced with slightly larger maintenance loans.

- The income threshold above which loan repayments are made will be frozen in nominal terms at its current level (£21,000 per year in 2016 prices) for five years.

- The tuition fee cap (which has been set at £9,000 per year since the reforms in 2012) will be allowed to increase in line with inflation from 2017–18 at institutions offering 'high teaching quality'.

- The discount rate applied to student loans – currently RPI+2.2% – will be reviewed to 'bring it into line with the government's long-term cost of borrowing' (which is lower than the current discount rate). This will affect how much future loan repayments are valued today.

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Only the first of these reforms will definitely go ahead. The government will consult on the changes to the income threshold and the tuition fee cap, and the Treasury will review the change to the discount rate. However, if they are all implemented, these reforms will represent the biggest change to the system since 2012.

This briefing note assesses the impact of each of these reforms.

Replacement of maintenance grants with maintenance loans

- The new maintenance loans, due to be introduced in 2016–17, will be larger than the sum of grants plus loans that we estimate students from low-income households would have received in the absence of the reform. This will increase 'cash in pocket' while at university by up to £550 per year for those students.

- However, there will be a substantial increase in debt for these students. Assuming students take out the maximum loans to which they are entitled, we estimate that average debt from a three-year course will rise from around £40,500 under the old system to around £53,000 under the new system for the poorest 40% of students. Debt will now be highest amongst those from the lowest-income families.

- Using current loan repayment conditions (i.e. not including the other reforms outlined in the Budget), we estimate that around a quarter of the value of these additional loans is likely to be repaid, with 65% of those eligible for full maintenance grants forecast to repay no more under the reform than they would have done otherwise. However, of the remaining 35%, repayments are forecast to continue for an extra four years, with the average individual contributing an extra £9,000 towards the cost of their degree in 2016 money. These additional repayments come mostly from graduates from poor family backgrounds who end up in the top 30% of the graduate lifetime earnings distribution.

- We estimate that for a cohort of 362,000 students, total spending on student loans will increase by £2.3 billion, while spending on maintenance grants will decline by £2 billion. Overall, up-front student support therefore increases by around £340 million per cohort as a result of this reform.

- We expect that around 26% of the value of these additional loans will be repaid, resulting in higher loan repayments of around £600 million

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per cohort. Under our estimates, this reform would therefore result in a long-run saving of around £270 million for the government, a 3% decline in the cost of funding the teaching of undergraduates.

- An advantage of this change for the government in the short term arises from the fact that current spending on grants counts towards current borrowing, while current spending on loans does not impact borrowing until the debt is written off at the end of the 30-year repayment period. As a result of this change, we estimate that borrowing will fall by £2 billion per year in the short term, but at the expense of higher borrowing 30 years into the future. The total long-run effect on borrowing taking this into account is to reduce it by just £270 million.

Freezing the repayment threshold

- The repayment threshold is the level of income above which graduates start to make repayments (currently £21,000 in 2016 prices). Freezing the threshold for five years will bring its value down close to the value of the pre-2012 threshold of £15,000 in real terms.

- We also assume that the higher income threshold – above which graduates are charged the maximum interest rate of RPI+3% on their debt – (currently £41,000 in 2016 prices) is frozen for five years, and that both thresholds are uprated in line with average earnings thereafter.

- These reforms would increase loan repayments after graduation, both annually and in total. Relative to a scenario in which maintenance grants have been replaced by loans, we estimate that under a scenario in which both income thresholds rise in line with average earnings each year, total repayments will increase by around £3,800, on average, in 2016 money. This would reduce the long-run cost to government of funding undergraduate higher education by £1.4 billion per cohort of students, although this impact is sensitive to assumptions about how thresholds are uprated in future.

- Middle-income graduates would be hit hardest by this reform. For example, we estimate that a graduate on median earnings would repay £6,000 more in total in 2016 money than under the 2016–17 system with maintenance grants replaced by loans.

Increasing the fee cap in line with inflation

- The Summer Budget signalled the first move to increase the fee cap beyond the £9,000 level it was set at in 2012. If delivered, it will help prevent the real value of tuition fees from eroding further over time.

- The implications of this policy will depend on which universities are allowed to raise fees and on the income of their graduates. However, all else equal, it is likely to increase the cost to government of teaching undergraduates, on the assumption that fee loans would rise in line with fees and not all loans are repaid in full.

- For example, assuming *all* institutions uprate their fees with inflation, average debt on graduation would rise by around £1,000 per student compared with the 2016–17 system with maintenance grants replaced by loans. Up-front government spending will rise by around £300 million, with less than one-third of that money expected to be repaid.

The combination of all three policies

- If the change from maintenance grants to loans, the threshold freeze and the increase in the fee cap were all to be implemented in 2016–17, we estimate that graduates would, on average, contribute an extra £6,000 to the cost of their education (compared with the baseline system), with the long-run cost to government estimated to fall by around £1.4 billion per year in today's money.

The combination of all three policies plus a lower discount rate

- The proposal to reduce the discount rate is essentially an accounting 'trick': it will not change the real resources going to students or universities; nor will it increase repayments from graduates. Instead, it means that future repayments will be valued more highly today. This has the effect of increasing the value (but not the cash amount) of repayments made in future, hence making it appear that the cost of the system (in net-present-value terms) is lower than it was before.

- Using a discount rate of RPI+1.1% (instead of RPI+2.2%) would increase the value of repayments from an average of £30,700 per student to an average of £37,900 per student in 2016 money when looking at the three policies combined. This would hence reduce our estimates of the cost to government of issuing student loans by more than £2 billion per cohort of 362,000 students.

The effect on participation?

- Whether these reforms lead to a reduction in participation, especially amongst students from the poorest backgrounds, will depend on how debt averse students are and how credit constrained they are, as well as on how responsive participation decisions are to expected increases in the long-run cost of higher education.

- Full-time participation rates amongst students from poor backgrounds did not fall following the major changes to higher education finance introduced in 2012, but the changes introduced in 2012 differ significantly from those due to be introduced in 2016–17. In 2012, grants went up for the poorest students (by 10%) and the net present value of loan repayments went down for those in the bottom 30% of lifetime earnings (in which those from the poorest families are likely to be over-represented).

- Under the 2016–17 system, grants have been abolished and the net present value of repayments is likely to increase substantially for those from the poorest backgrounds. We would expect both of those changes to have negative effects on participation for the poorest students, all else equal. However, up-front support at university will also rise for this group (because maintenance loans have increased by more than the reduction in grants) and this *may* have an offsetting effect if these individuals are not very forward looking and/or they are very credit constrained and/or they expect to have low lifetime income.

- If, in addition, the income threshold is frozen and fees are increased for some students, then both debt and total repayments are likely to rise. We might therefore expect the potential negative effects on participation to be stronger if all of the proposed reforms are introduced. Of course, only time will tell what the overall impact will be for students from the poorest backgrounds, but there are reasons to believe that the effects may not be as benign as they appeared to be following the 2012 reforms.

1. Introduction

There have been numerous changes to the funding of higher education in England in recent years, the most significant of which were reforms introduced in 2012, which saw the cap on annual tuition fees rise from £3,375 per year to £9,000 per year.[2] Tuition fees do not have to be paid up front, however; instead, students can borrow money from the government to cover tuition fees, plus a contribution towards their living costs. Importantly, these loans do not have to be repaid until after graduation, at a rate of 9% of income above £21,000 per year. Moreover, they are available at relatively competitive interest rates, with graduates charged an interest rate of up to RPI+3% depending on their income. Additional support in the form of grants – which do not have to be repaid – is also available to students from lower-income families.

In the Summer Budget of 2015, the Chancellor announced some further changes to higher education funding and student support. The principal change was the scrapping of maintenance grants (grants to help cover living costs) for poorer students from 2016–17, replacing them with slightly larger maintenance loans.

Three other changes will also be subject to public consultation:

- freezing the threshold above which loan repayments are made in nominal terms for five years;

- allowing the tuition fee cap to increase in line with inflation from 2017–18 at institutions offering 'high teaching quality';

- reviewing the discount rate applied to student loans to bring it into line with the government's long-term cost of borrowing (this affects how much future loan repayments are valued today).

This briefing note assesses each of these reforms in turn. We start by providing a brief overview of the model underlying our estimates. Next we discuss the implications of the removal of maintenance grants for students

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[2] Previous IFS research has investigated the implications of these changes in detail. See C. Crawford and W. Jin, *Payback Time? Student Debt and Loan Repayments: What Will the 2012 Reforms Mean for Graduates?*, IFS Report R93, 2014, http://www.ifs.org.uk/comms/r93.pdf and C. Crawford, R. Crawford and W. Jin, *Estimating the Public Cost of Student Loans*, IFS Report R94, 2014, http:www.ifs.org.uk/comms/r94.pdf.

and the government, followed by the likely implications of the proposed changes to the repayment threshold, fees and the discount rate, which will all be subject to public consultation. We end with some brief conclusions.

2. Our model

Our analysis is conducted using IFS's graduate earnings model. The model is described in detail in Crawford, Crawford and Jin (2014),[3] but in essence we take the cohort of students expected to start university in 2016–17 and match them to a series of simulated 30-year graduate earnings profiles.[4]

Information on students enables us to calculate the amount of financial support to which they are entitled, including the maximum amount of loans they could take out. We assume that all students take out the maximum fee and maintenance loans to which they are entitled.

The earnings profiles enable us to calculate annual and total loan repayments throughout the 30-year repayment period (assuming no early repayment and no repayment avoidance), and hence statistics such as the proportion of graduates who are likely to repay their loans in full, the average number of years taken to repay, and the resource accounting and budgeting (RAB) charge, which can be thought of as the long-run cost to the government of issuing student loans.[5]

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[3] C. Crawford, R. Crawford and W. Jin, *Estimating the Public Cost of Student Loans*, IFS Report R94, 2014, http:www.ifs.org.uk/comms/r94.pdf.

[4] In principle, graduates have to make student loan repayments out of unearned income if it exceeds £2,000 per year. In practice, however, only those who submit self-assessment tax returns make repayments on the basis of unearned income. Given that the number of individuals to whom this applies is relatively small, together with the challenges of estimating unearned income, we focus on repayments made out of earned income only, which is why we estimate graduate *earnings* profiles rather than graduate *income* profiles.

[5] The provision of student loans is costly to the government for two reasons. First, not all loans will be repaid, since the debt is written off under certain circumstances (including death, permanent disability, and after 30 years). Second, the loans are (on average) made available at subsidised interest rates – in other words, the interest payable by the borrower is on average lower than the interest the government is assumed to pay on its debt (which is RPI+2.2%). In principle, this means that providing student loans would be costly to the government even if they were all repaid in full.

The baseline system in 2016–17

To estimate the implications of each of the reforms announced by the Chancellor for students, universities and the government, we must take some decisions about what the system would have looked like in 2016–17 (the year in which the reform to maintenance grants and loans is set to be introduced) in the absence of the reforms.

To estimate total student debt, we must make some assumptions about what would have happened to fees, fee waivers (provided by some universities) and maintenance loans. We use the latest information for students entering university in 2015–16 and assume that fees will be held fixed between 2015–16 and 2016–17, while the amount available through fee waivers and maintenance loans will be uprated in line with inflation (as measured by the retail prices index, RPI).

To estimate total non-repayable student support, we assume that maintenance grants from the government and bursaries from universities would also have been uprated in line with the RPI between 2015–16 and 2016–17 (but that the parental income thresholds that determine eligibility for both would have been fixed in nominal terms).

In terms of the loan repayment parameters, we assume that the repayment rate, repayment period and interest rate would remain the same. Importantly, we assume that the repayment thresholds – the income threshold beyond which repayments are made and the level of income beyond which graduates face the maximum interest rate on their debt – would rise in line with average earnings. This follows the assumption made by the Department for Business, Innovation and Skills (BIS) in its analysis of the cost of the student loan system. However, we also illustrate in Table A1 in the appendix what cost implications there would be if these thresholds were increased in line with the RPI rather than average earnings.

Other important assumptions underlying our analysis

Population of interest

Our population of interest is the cohort of English-domiciled students entering university in 2016–17, as this is the first cohort who will be affected by the reforms to maintenance grants and loans, and comprises

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individuals who are potentially eligible for maintenance grants from the government.[6]

However, due to the limitations of the data at our disposal, we take as our base population the cohort of English-domiciled students who entered one of the 90 largest higher education institutions in England in 2012 to study full-time for a first degree, scaled up to reflect the growth June student numbers since then.

In essence, this means that we assume the composition of the student population is the same in 2016–17 as it was in 2012. The exception is in terms of family income, which we assume changes to reflect the latest Student Loans Company figures on the proportion of students eligible for different amounts of maintenance grants. According to these figures, 55% of students in 2014–15 were eligible for some maintenance grant, with 41% eligible for the maximum grant.[7] We assume these proportions remain constant between 2014–15 and 2016–17.

In addition to providing estimates of the cost to government per student, we also provide some indication of total costs for a cohort of students of a given size. (This is equivalent to estimating a cost per year, on the assumption that student numbers do not change over time.) To do so, we take internal estimates from the Treasury for the number of students due to enter higher education in 2016–17, which are constructed using the latest participation data, data from applications and projections of growth in student numbers based on recent trends. This internal estimate is for 362,000 English-domiciled students to attend UK universities in 2016–17.

Graduate earnings growth

This is a crucial parameter in estimating long-run loan repayments. In an update to our previous work, we use the latest Office for Budget Responsibility (OBR) earnings growth forecasts from the June 2015 Fiscal

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[6] This is a departure from our most recent work on this topic, in which we used the 2012 cohort as our base population (see J. Britton and C. Crawford, *Estimating the Cost to Government of Providing Undergraduate and Postgraduate Education*, IFS Report R105, 2015, http://www.ifs.org.uk/uploads/publications/comms/r105.pdf).

[7] http://www.slc.co.uk/media/855703/slcsfr052014.pdf.

Sustainability Report[8] and the July 2015 Economic and Fiscal Outlook.[9] This assumes that earnings grow at an average (but variable) rate of 1.1% per year above the rate of inflation from 2016–17 to 2020–21, and at 1.5% per year above the rate of inflation thereafter.

Discount rate

The government borrows the money that it lends out to students, and repays the money to its creditors over time. Because money now is usually more highly valued than money in the future, a discount rate is typically applied to long-term investments. A discount rate effectively reduces the value of money coming in (repayments made) in future compared with money coming in now (at the time the investment is made). Future payments to which a discount rate has been applied (i.e. that have been discounted) are said to be in net-present-value (NPV) terms.

For the purposes of its own assessment of the value of future student loan repayments, the government assumes a discount rate of 2.2% above the rate of inflation, as measured by the RPI. In calculating estimates of the cost of issuing student loans, this rate is assumed to reflect the long-run cost of government borrowing, i.e. the interest rate the government would have to pay in order to borrow the money to make the investment.

In this note, as in previous IFS work on this topic, our baseline analysis uses the government's preferred discount rate of RPI+2.2%. However, the Chancellor announced in the Summer Budget that the government will review the discount rate applied to student loans and other long-term investments 'to bring it into line with the government's long-term cost of borrowing'.[10] The government is able to borrow money more cheaply than this at the moment; hence one can infer from this statement that the Chancellor is considering lowering the discount rate used to value the student loan book.

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[8] Office for Budget Responsibility, *Fiscal Sustainability Report – June 2015*, 2015, http://budgetresponsibility.org.uk/fiscal-sustainability-report-june-2015/.

[9] Office for Budget Responsibility, *Economic and Fiscal Outlook – July 2015*, 2015, http://budgetresponsibility.org.uk/economic-fiscal-outlook-july-2015/.

[10] See paragraph 1.265 of HM Treasury, *Summer Budget 2015*, July 2015, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/4432 32/50325_Summer_Budget_15_Web_Accessible.pdf.

In the last part of Section 4, we discuss the implications of using an alternative lower discount rate of RPI+1.1%. (There has, to date, been no suggestion that the system should move away from using the – now discredited – RPI measure of inflation, although we would strongly suggest that the government should consider doing so in future.)

All monetary values in this briefing note are reported in 2016 prices. When a discount rate has been applied, we say that figures are in 2016 money (i.e. that they are in discounted 2016 prices).

Distributional analysis

We can illustrate the implications of the proposed reforms for different individuals using various student or graduate characteristics. Our previous research has focused on the distributional implications by decile of graduate lifetime earnings. How repayments vary by student (rather than graduate) characteristics, however, depends strongly on how we link information on students to information on graduates (as, of course, we do not yet observe any graduates who have been through the entire repayment period).

To do so, we make a number of assumptions, including how strong the correlation is between an individual's family income when they were applying to university and their own lifetime earnings. This is particularly important for the analysis conducted in this briefing note, because it is through this assumption that we are able to assess how changes to the amount of debt held by students from families with different incomes translate into different loan repayments in future.

Based on our own previous analysis of these relationships using the National Child Development Study, we impose a correlation of 0.2 between family income and graduate lifetime earnings.[11] However, we are

[11] See the online appendix of H. Chowdry, L. Dearden, A. Goodman and W. Jin, 'The distributional impact of the 2012–13 higher education funding reforms in England', *Fiscal Studies*, 2012, 33, 211–36 (http://www.ifs.org.uk/docs/fsjun12_chowdryetal_appendices.pdf). We impose a higher correlation than that found there, because estimates of intergenerational income mobility across all individuals have increased since 2012. (See, for example, J. Blanden, P. Gregg and L. Macmillan, 'Intergenerational persistence in income and social class: the effect of within-group inequality', *Journal of the Royal Statistical Society: Series A*, 2013, 176, 541–63.)

conscious that this may in practice be an underestimate of the true correlation. If this is the case, then we will overestimate the repayments made by graduates from the poorest backgrounds and underestimate those made by graduates from the richest backgrounds. However, our findings remain qualitatively similar even if we increase the assumed correlation to 0.6 (see Figure A1 in the appendix).

Comparison with previous research

Our estimates of the financial implications of the baseline scenario for students, graduates, universities and the government differ from our previous work on this topic in two clear ways:

- We focus on the system as it is likely to be in 2016–17, rather than in 2012–13 (the year in which the most recent reforms to higher education funding and student support were introduced). This matters in terms of the levels of fees, fee waivers, bursaries, maintenance grants and maintenance loans, and also in terms of cohort size. For example, student numbers have increased and tuition fees have declined in real terms between 2012 and 2016, as the fee cap has remained fixed at £9,000 per year.

- We use updated earnings growth forecasts. Average earnings growth is now forecast to be higher than it was previously, both between 2012 and 2020 and in the long run.

The implications of these changes are that we estimate repayments to be higher (and hence the proportion of students with write-offs and the RAB charge to be lower) than in our previous analysis. For example, whereas in the past we estimated the RAB charge to be 43.1%,[12] our baseline estimate prior to any of the announced reforms is now 39.2%.

3. Changes to maintenance grants and loans

The only certain reform that was announced – to be introduced in 2016–17 – is a change in the way government support for student living costs will be delivered, with maintenance grants being scrapped and replaced by slightly larger maintenance loans. This section explores the implications of

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[12] J. Britton and C. Crawford, *Estimating the Cost to Government of Providing Undergraduate and Postgraduate Education*, IFS Report R105, 2015, http://www.ifs.org.uk/uploads/publications/comms/r105.pdf.

this change for students – in terms of 'cash in pocket', debt and repayments – and for the government.

Implications for students

Maintenance grants – which we expect to be worth up to £3,489 per year (2016 prices) for the baseline 2016–17 cohort – are targeted at students from lower-income families. Students with a family income of up to £25,000 per year are eligible for the maximum amount. That amount is tapered away with parental income, so that individuals with parental income above £42,620 receive nothing in grants. Meanwhile, the availability of maintenance loans increases with parental income, hitting a maximum of £5,912 (2016 prices) for those with parental income of £42,875. According to latest Student Loans Company figures, 41% of individuals were eligible for the full maintenance grant in 2014–15, while another 14% were eligible for a partial grant.

The long- and short-dashed lines in Figure 1 illustrate the maximum grants and loans respectively to which students living away from home outside London would be entitled per year, depending on family income, under the baseline 2016–17 system, in 2016 prices.[13] The solid grey line illustrates total 'cash in pocket' available to students per year from the government, showing that support is greatest for students from the lowest-income backgrounds, at £7,657 per year, approximately 45% of which does not count as student debt (i.e. comes from grants rather than loans).

As outlined above, the Chancellor announced in the Summer Budget that maintenance grants would be scrapped and replaced by loans. Total support available to students under the new 2016–17 system (after the reforms to maintenance grants and loans have been introduced) is illustrated by the black line in Figure 1. The maximum amount available to students from lower-income families will be slightly larger than the combination of grants plus loans to which they would otherwise have been entitled, meaning that these students will have more cash in their pockets while they are studying. This increase is biggest for students from the

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[13] Loans are higher for those studying in London and lower for those living at home. The underlying changes in support by family income are similar, however.

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Figure 1. Support for living costs: baseline versus new system in 2016–17 (2016 prices)
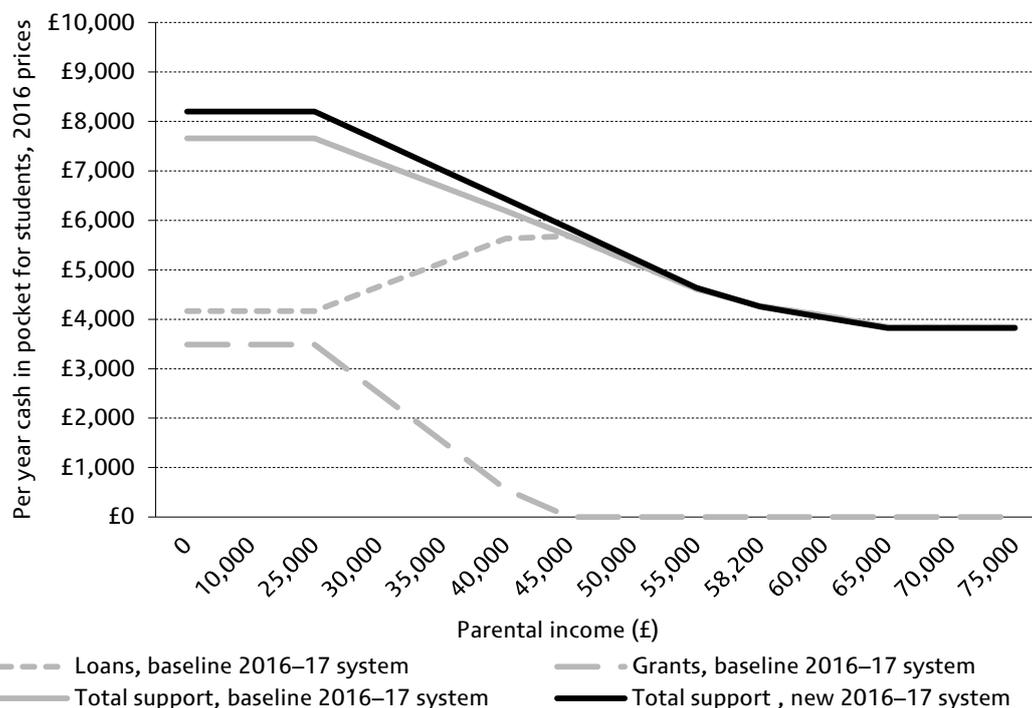
Note: Amounts are for students living away from home outside London.

lowest-income families, at around £550 more per year.[14] On average, this will raise student support by around £1,000 per student over the course of their degree (see Table 1 later).

While students from lower-income families will receive slightly more financial support from the government as a result of these proposed reforms, this support will now be offered entirely in the form of loans. Those from lower-income backgrounds will thus now graduate with considerably more debt than they otherwise would have done.

Figure 2 shows debt upon graduation after a three-year course for students with different family incomes, including both fee and maintenance debt, assuming students take out the maximum loans to which they are entitled. Under the baseline 2016–17 system (the grey line), support is roughly hump-shaped, with students from middle-income families graduating with the largest debts. (This is primarily driven by the higher maintenance loans to which these students are entitled.)

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[14] This assumes that grants would have been uprated in line with inflation (as measured by the RPI) in the absence of the reform.

Figure 2. Average debt upon graduation from a three-year course: baseline versus new system in 2016–17 (2016 prices)
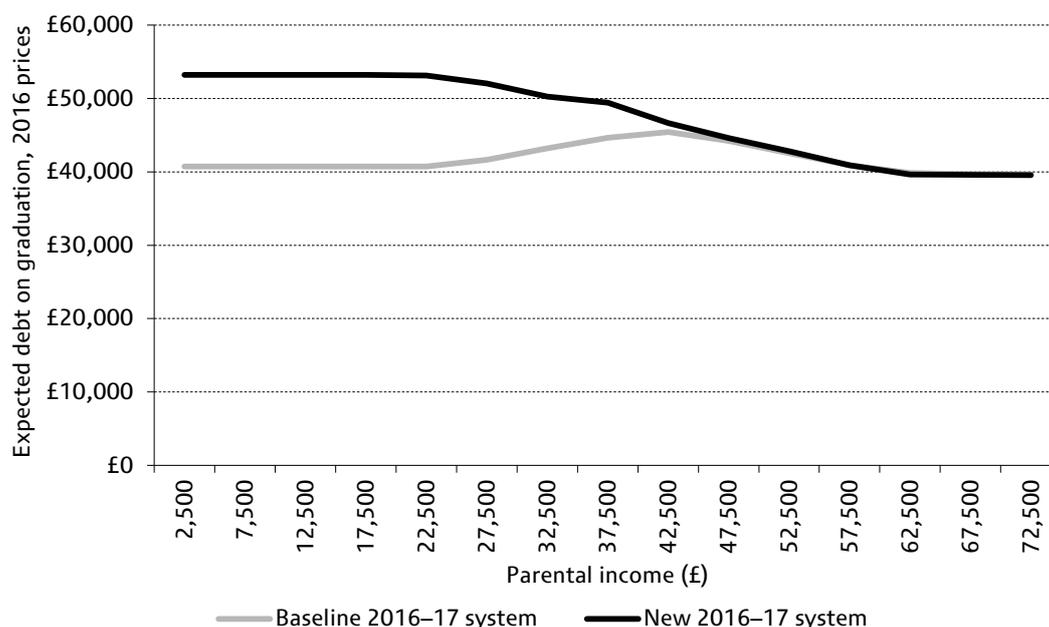
As a result of the transference of maintenance grants to loans, this pattern changes to one in which students from the poorest backgrounds are likely to graduate with the most debt (the black line). Assuming students take out the maximum loans to which they are entitled, average debt on graduation will rise by around £12,500 for the poorest students, from around £40,500 to around £53,000 for those on three-year courses.[15]

Student loan debt is written off 30 years after graduation. Under the baseline 2016–17 system, we estimate that graduates will spend an average of 27 years making repayments, and that 62% of graduates are likely to have some debt written off (i.e. are liable for repayments for the full 30 years). If no additional repayments are likely to be made under the new system, then the key considerations in deciding whether or not to participate will be whether students understand how the student loan system works and how debt averse they are. If additional repayments are likely to be made, then the cost of university will rise for these individuals; thus the decision regarding participation may become more difficult.

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[15] This is slightly greater than three times the increase in loans per year shown in Figure 1, because students incur a real interest rate of 3% on their debt while they are studying.

Assuming the parameters of the loan system remain otherwise unchanged, the switch from maintenance grants to maintenance loans will, on average, lengthen the period of time over which graduates from lower-income backgrounds will have to make loan repayments. Importantly, it will be graduates from lower-income backgrounds who go on to be higher earners (in the top half of the graduate earnings distribution) who will make these additional repayments.

Figure 3 shows average estimated repayments under the baseline and new 2016–17 systems, split by decile of family income. As expected, increases in repayments only occur for those in the bottom half of the parental income distribution, reflecting the fact that those from richer families are unaffected by the reforms. For example, we estimate that students from the 30% poorest families are likely to repay an average of around £3,000 more in 2016 money over the course of the 30-year repayment period than they would have done in the absence of the reforms.

Figure 3. Expected average NPV repayments: baseline versus new system in 2016–17 (2016 money)
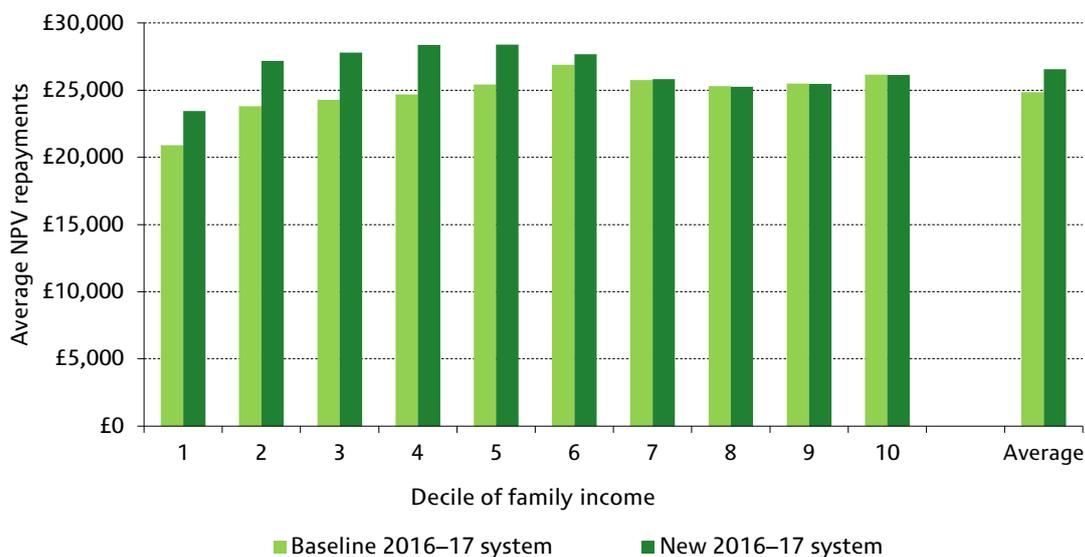
Because we expect a relatively large proportion of graduates to have some debt written off under the baseline 2016–17 system – and hence these individuals are already estimated to make repayments for the full 30 years of the repayment period – the increases in average number of years to repay and in the proportion of students with debt written off are relatively small. We estimate that the average length of time over which repayments

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are made will increase by less than a year as a result of the switch from maintenance grants to loans, and that the share of graduates having some debt written off will increase from 62% to 69% under the revised 2016–17 system.

These effects will be greater for those from the lowest-income backgrounds, however. We estimate that 65% of students who would have been entitled to a full maintenance grant are likely to experience no change in how much they can expect to repay (as they would not have paid back their old lower loan in full, let alone their new higher loan). Of the remaining 35% of those students, the average student will be repaying their loan for an extra four years, contributing an extra £9,000 towards their degree. For those who would only have received a partial maintenance grant, 62% are likely to see no change to their repayments under the new system, while the remaining 38% will repay for an additional three years, on average.

The burning policy question is, of course, whether these reforms will have an impact on student participation in university, particularly amongst those from the poorest backgrounds. Full-time participation rates amongst students from poor backgrounds did not fall following the major changes to higher education finance introduced in 2012, but the changes introduced in 2012 differ significantly from those due to be introduced in 2016–17.

In 2012, grants went up for the poorest students (by about 10%) and the net present value of loan repayments went down for those in the bottom 30% of lifetime earnings (in which those from the poorest families are likely to be over-represented).[16] With the new reforms, grants have been abolished and the net present value of repayments is likely to increase substantially for those coming from the poorest backgrounds.

We would expect both of those changes to have negative effects on participation for the poorest students, all else equal. However, up-front support at university will also rise for this group (because maintenance loans have increased by more than the reduction in grants) and this additional £550 per year in up-front support *may* have an offsetting effect.

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[16] C. Crawford and W. Jin, *Payback Time? Student Debt and Loan Repayments: What Will the 2012 Reforms Mean for Graduates?*, IFS Report R93, 2014, http://www.ifs.org.uk/comms/r93.pdf.

This is particularly likely to be the case if individuals are not very forward looking and discount the future highly, face serious credit constraints whilst studying, or are reasonably certain that they will have low lifetime earnings (in the bottom 40–50% of lifetime graduate earnings), since in this case their repayments are unlikely to rise. In practice, only time will tell what the overall effect on university participation will be for the poorest students.

Implications for government

When thinking about the impact of the higher education funding system on the public finances, it is easiest to think about its effect on the profile of public debt over time for a given cohort. There is an initial sharp increase in debt, as the government borrows money to lend to students to cover tuition and maintenance costs whilst they are at university. (It may additionally borrow money to cover teaching and maintenance grants.)

Once students leave university and start making loan repayments, public debt starts to decline. It continues to do so until the end of the repayment period, after which there will be no further graduate repayments. (We are only considering the profile for a single cohort for illustrative purposes.) At this point, there will be no further reduction in the debt accumulated in respect of the loans issued to this cohort. This outstanding debt is what we refer to as the long-run cost of issuing student loans.

The effects on 'borrowing' are complicated by the different accounting treatment of loans and grants. The former do not count towards borrowing (as measured by public sector net borrowing) in the year they are issued (and repayments from graduates do not reduce government borrowing when they are received) since they are counted as 'financial transactions'. Only the debt interest accruing on the loans made and any write-offs at the end of the repayment period affect borrowing. The RAB charge is a way of accounting for the expected future write-offs resulting from the student loan book in BIS's departmental accounts. In contrast, spending on grants counts towards government borrowing in the year they are made.

From this description, it is clear that one impact of the switch from maintenance grants to loans is that, in the short run, borrowing will fall by the amount that would otherwise have been spent on maintenance grants,

which we estimate to be £2 billion for the 2016–17 cohort,[17] assuming a cohort size of 362,000.

Assuming money is borrowed to pay for maintenance grants under the baseline 2016–17 system, initial government spending – and hence public debt – will only increase by the difference between total student support (grants plus loans) under the baseline 2016–17 system and the new higher loans issued under the revised 2016–17 system (i.e. by £340 million, assuming a cohort size of 362,000).

This is illustrated in Table 1, which shows our estimates of the flow of funds in the higher education funding system, comparing per-student figures across the baseline 2016–17 system and the revised 2016–17 system. Initial government spending – the sum of funds going to universities in the form of teaching grants and tuition fees on behalf of students (which do not change) and to students in the form of maintenance grants and loans – rises by around £1,000, on average, across all students due to the increase in overall student support being made available.

If no loans were repaid, then the expected long-run cost to government of grants and loans would be the same. The fact that some of the additional loans that will be issued under the revised 2016–17 system are expected to be repaid means that the switch from maintenance grants to loans of equal size would be expected to reduce the long-term cost to government. The uncertainty here is whether the expected reduction in the cost to government arising from the switch from grants to loans is higher or lower than the estimated increase from raising student support (in the form of loans) for students from lower-income families.

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[17] This figure is somewhat lower than Treasury estimates for 2020 as mentioned in the Chancellor's Budget Speech. This difference is partly due to inflation and growth in student numbers between 2016–17 and 2020, but is primarily due to assumptions about changes in the composition of students entering university over time. Specifically, based on recent trends, the Treasury is predicting that participation amongst those from poorer households will grow faster than participation amongst those from wealthier households, and hence that the composition of students entering university in 2020 is significantly more disadvantaged than that of the cohort entering in 2016–17, on which our estimates are based.

Table 1. Money flows per student (£000s unless stated otherwise, 2016 money)

	Baseline 2016–17 system	Replace maintenance grants with loans, and increase maintenance loans for the poorest students (revised 2016–17 system)
RAB charge	39.2%	43.8%
Initial govt spending	48.2	49.2
Taxpayer contribution	23.4	22.6
Graduate contribution	24.9	26.6
University funding	27.8	27.8
Student funding	20.4	21.4
Of which: Maint. loan	13.5	19.8
Maint. grant	5.4	0.0
Bursaries	1.6	1.6
Per 362,000 students		
Total up-front govt spend	17,454m	17,798m
Total long-run contribution	8,457m	8,185m

Note: All figures are given in 2016 prices in £000s, discounted using a discount rate equal to the government's assumed cost of borrowing (assumed to be RPI+2.2%), unless otherwise stated. Assumes all students take out the maximum loan to which they are entitled, repay following their repayment schedule and have no unearned income.
Source: Authors' calculations using IFS's graduate repayments model.

Table 1 shows that, in the long run, repayments from students on the extra debt issued will exceed the extra up-front government spending by approximately £270 million. This is because only around 26% of the value of the additional loans issued is likely to be repaid.

Table 1 also shows that we estimate that the overall RAB charge – across all student loans issued – will rise as a result of these reforms, from 39.2% to 43.8%. Importantly, this latter figure is from a higher base as grants do not count towards the RAB, while loans do, meaning that even if the RAB charge were the same, the total long-run cost to the government of issuing student loans would be larger under the revised 2016–17 system than under the baseline 2016–17 system. We therefore believe it is better to focus on the overall long-run cost to government – including all teaching and maintenance grants – which we estimate will decline slightly, from £8.5 billion to £8.2 billion in 2016 money, a 3% reduction.

4. Other proposed changes (subject to public consultation)

As outlined in the introduction, the Chancellor also announced three further proposed changes to higher education funding in England, all of which would be subject to consultation:

- freezing the threshold above which loan repayments are made in nominal terms for five years;

- allowing the tuition fee cap to increase in line with inflation from 2017–18 at institutions offering 'high teaching quality';

- reviewing the discount rate applied to student loans to bring it into line with the government's long-term cost of borrowing.

Table 2 shows the flow of funds between the government, universities and students under each of these scenarios, and Figure 4 shows the distributional implications of these reforms, comparing repayments made by decile of the lifetime earnings distribution. (Note that this differs from the distributional analysis in Section 3, in which individuals were split by family income.) We take as our baseline system in this analysis the revised 2016–17 system described above (i.e. with maintenance grants replaced by loans). We discuss the implications of each reform for the relevant stakeholders in turn below.

Table 2. Money flows per student (£000s unless stated otherwise, 2016 money)

	Revised 2016–17 system	Threshold freeze	Uprating fees	Threshold freeze + uprating fees	Threshold freeze + uprating fees + real discount rate of 1.1%
RAB charge	43.8%	35.7%	44.3%	36.3%	21.9%
Initial govt spending	49.2	49.2	50.1	50.1	50.5
Taxpayer contribution	22.6	18.8	23.3	19.4	12.6
Graduate contribution	26.6	30.4	26.8	30.7	37.9
University funding	27.8	27.8	28.7	28.7	29.1
Of which: Teaching grants	2.0	2.0	2.0	2.0	2.0
Net fees	27.4	27.4	28.3	28.3	28.7
Bursaries	–1.6	–1.6	–1.6	–1.6	–1.6
Student funding	21.4	21.4	21.4	21.4	21.4
Of which: Maint. loan	19.8	19.8	19.8	19.8	19.8
Maint. grant	0.0	0.0	0.0	0.0	0.0
Bursaries	1.6	1.6	1.6	1.6	1.6
Per 362,000 students					
Total up-front govt spend	17,798m	17,798m	18,133m	18,133m	18,280m
Total long-run contribution	8,185m	6,811m	8,423m	7,027m	4,573m

Note: All figures are given in 2016 prices in £000s, discounted using a discount rate equal to the government's assumed cost of borrowing (assumed to be RPI+2.2%), unless otherwise stated. Assumes all students take out the maximum loan to which they are entitled, repay following their repayment schedule and have no unearned income.
Source: Authors' calculations using IFS's graduate repayments model.

Figure 4. Expected average NPV repayments by decile of graduate lifetime earnings (2016 money)

NPV repayments (y-axis): £0 to £60,000

Decile of graduate lifetime earnings distribution (x-axis): Poorest, 2, 3, 4, 5, 6, 7, 8, 9, Richest, Overall

Legend:
- ■ Baseline 2016–17 system
- ■ Revised 2016–17 (no grants)
- ■ No grants + threshold freeze
- □ No grants + threshold freeze + uprated fees
- □ No grants + threshold freeze + uprated fees + discount rate of RPI+1.1%
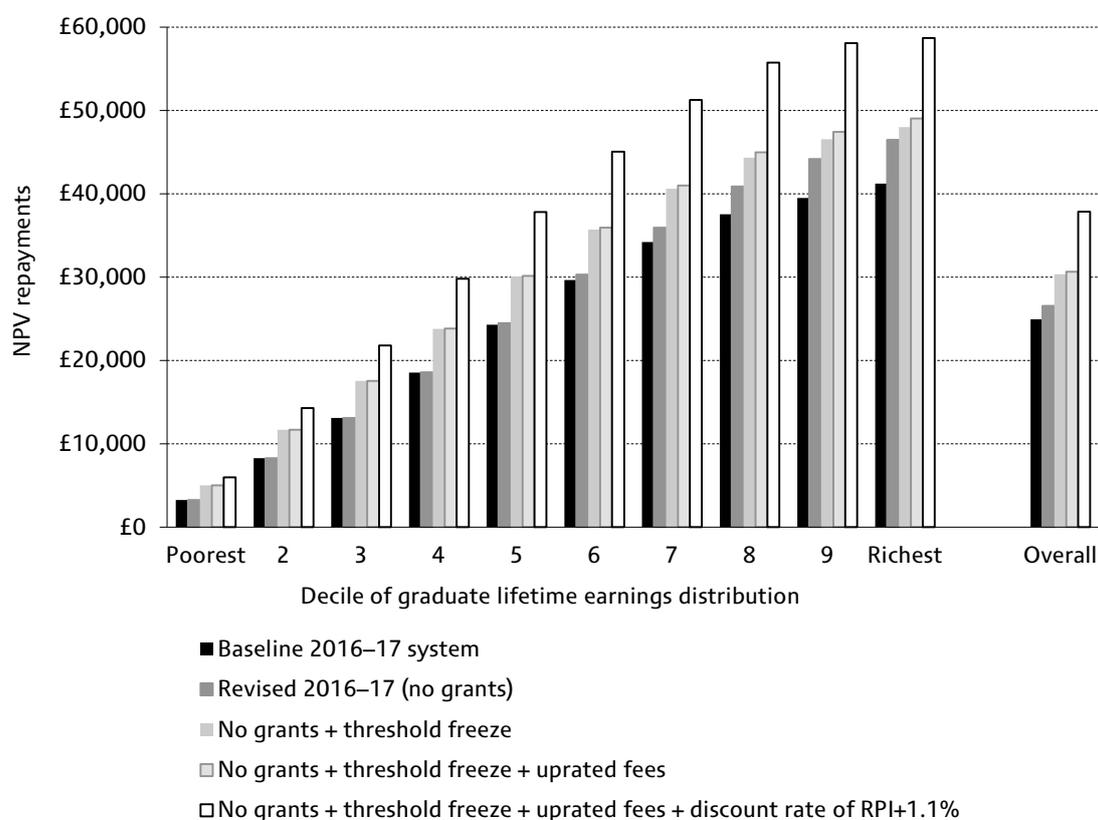
Source: Authors' calculations using IFS's graduate repayments model.

Threshold freeze

The announcement made by the Chancellor in the Summer Budget was that there would be a public consultation on freezing the loan repayment threshold for five years in nominal terms.

As outlined in Section 2, there are two relevant thresholds in the loan repayment system: the first is the income threshold beyond which repayments are made (currently £21,000 in 2016 prices); the second is the threshold that determines the level of income beyond which graduates face the maximum interest rate on their debt (currently £41,000 in 2016 prices). We assume that both would be frozen in nominal terms for five years from 2016. This would bring the value of the repayment threshold down close to the value of the pre-2012 income threshold of £15,000 in real terms.

After the five-year freeze, we assume that both thresholds would be increased in line with average earnings (as we assume happens in all years under the baseline scenario). We illustrate in Table A1 in the appendix

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how our estimates would change if we assumed that the thresholds increased in line with the RPI rather than average earnings beyond the initial five-year freeze, finding that this assumption makes an important difference.

This reform does not change the amount of money flowing to students or universities from the government. The only change this reform induces is a rise in the amount of loan repayments that students make to the government, both annually and in total over the repayment period. All else equal, our estimates (shown in Table 2) suggest that graduate repayments would increase by almost £4,000, on average, in NPV terms were this proposal to be enacted, and the RAB charge would fall to around 35.7% (compared with around 43.8% under the revised 2016–17 system).

We also estimate that there would be a reduction in the percentage of graduates who are not expected to repay their loans in full, to 64% (compared with 69% under the revised 2016–17 system). From a public finance perspective, this reform would increase the rate at which public debt declines over time, as the value of the repayments collected each year would rise. There would also be less outstanding debt to write off at the end of the repayment period, meaning future borrowing would rise by less than under the revised 2016–17 system.

Figure 4 shows that middle-income graduates would be hit hardest by this reform. A median graduate earner (earning around £23,000 per year in their early 20s, rising to £34,000 in their early 50s, both in 2016 prices) would see their annual repayments rise from £900 under the revised 2016–17 system to £1,100 with the threshold freeze. A graduate with this earnings profile would be expected to repay £27,000 in 2016 money in total under the revised 2016–17 system, compared with £33,000 in total in 2016 money under the system with a threshold freeze.

Increase tuition fee cap

The Chancellor announced in the Summer Budget that the government would consult on allowing institutions offering 'high teaching quality' to uprate fees in line with inflation from 2017–18 onwards. This is a first move to increase the fee cap beyond the £9,000 level it was set at in 2012, and, if delivered, will help prevent the real value of tuition fees from eroding further over time.

The details of which institutions would be eligible to increase fees if this reform goes ahead are unclear at this stage, but to provide some indication of the magnitude of the overall cost, we assume here that all institutions uprate their fees in line with inflation from 2017–18 onwards. (This analysis is still conducted for the 2016–17 cohort, however, so tuition fees in their first year of study are assumed to stay fixed and are then increased in line with inflation thereafter.)

Table 2 shows that, compared with the revised 2016–17 system, we estimate this will increase both the government's up front spending and the long-run cost of issuing student loans, by around £300 million and £200 million respectively for the 2016–17 cohort in 2016 money. This is because a large share of the additional fee loans that would be issued is not expected to be repaid.

The implications of this reform will be highly dependent on which institutions are allowed to increase their fees: if only institutions with high-earning graduates are allowed to do so, then the long-run cost to government of fee increases could be negligible (and vice versa).

Threshold freeze plus higher tuition fee cap

Table 2 and Figure 4 also provide estimates of the implications of the replacement of maintenance grants with maintenance loans, the five-year threshold freeze and the increase of fees in line with inflation assuming all three are introduced simultaneously for the 2016–17 cohort.

The result is an estimated RAB charge of 36.3% and increases in graduate repayments right through the distribution. Overall, it is the middle earners who are hit the hardest by this reform, as the threshold freeze impacts them the most. However, there is also a sizeable impact on the top earners.

These reforms will increase debt (in nominal but not in real terms) for some students (as a result of the fee change), and total repayments in net-present-value terms for all students (as a result of the threshold freeze). In both cases, we might expect their effects on participation to be negative. When combined with the potential effects on participation of the switch from maintenance grants to loans, we might therefore expect the participation rates of students from the most disadvantaged backgrounds to fall by more than they would as a result of the grant changes alone.

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Threshold freeze plus higher tuition fee cap plus lower discount rate

The final proposed change outlined in the Summer Budget is for the Treasury to 'review the discount rate applied to student loans ... to bring it into line with the government's long-term cost of borrowing'.[18] As the current cost of government borrowing is low, this implies that the discount rate would be reduced.

Table 2 provides an example of how the discount rate affects the estimated flow of funds in NPV terms, with the penultimate column illustrating the three combined reforms using the Treasury's current preferred discount rate of RPI+2.2%, and the last column illustrating the same scenario using a lower discount rate of RPI+1.1%. These estimates make clear that the discount rate has a dramatic effect on the value of expected future repayments and hence the RAB charge and the total taxpayer contribution.

For example, graduates are estimated to repay £7,000 more, on average, in 2016 money when using a discount rate of RPI+1.1% than when using a discount rate of RPI+2.2%. This reduces the total taxpayer contribution to the cost of teaching undergraduates to £12,500 per student, on average, in 2016 money, and would amount to a total cost of around £4.5 billion for a cohort of 362,000 students (while the equivalent figure using the higher discount rate was over £7 billion).

It is important to note that a reduction in the discount rate would not change real payments; it would simply mean that payments made in future would be valued more highly than they are under our baseline scenario. As a result, this reform should not affect participation rates.

5. Conclusions

The Summer Budget proposed a set of reforms to higher education funding and student support in England that, if they are all implemented, will represent the biggest change to the system since 2012.

The only certain proposal is the move to replace maintenance grants with slightly higher maintenance loans, due to be introduced for students in 2016–17. This will have the advantage of increasing 'cash in pockets' for

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[18] See paragraph 1.265 of HM Treasury, *Summer Budget 2015*, July 2015, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/4432 32/50325_Summer_Budget_15_Web_Accessible.pdf.

students from the poorest families whilst they are at university. But it also means that these students will leave university with the largest debts, and some will repay significantly more in net-present-value terms than they would have done in the absence of the reform.

An advantage of this change for the government in the short term arises from the fact that current spending on grants counts towards current borrowing, while current spending on loans does not impact borrowing until the debt is written off at the end of the 30-year repayment period. As a result of this change, we estimate that borrowing will fall by £2 billion per year in the short term (assuming a cohort of 362,000 students). But we estimate that it will only save the government around £270 million per cohort of students in the long run, because a high proportion of the additional loans made will not be repaid.

The additional reforms that were announced (but will be subject to public consultation) affect three different aspects of the system:

- The proposal to freeze the repayment threshold in nominal terms for five years does not change the real resources going to students or universities. But it will reduce the cost to government of the teaching of undergraduates, primarily by extracting higher loan repayments from middle-income graduates.

- The proposal to allow the fee cap to rise in line with inflation for institutions with 'high teaching quality' will prevent the real value of resources going to these universities from declining. But it will, all else equal, increase the cost to government of the teaching of undergraduates, because not all loans are estimated to be repaid in full.

- The proposal to reduce the discount rate is essentially an accounting 'trick': it will not change the real resources going to students or universities; nor will it increase repayments from graduates. Instead, it means that future repayments will be valued more highly today. This has the effect of increasing the value (but not the cash amount) of repayments made in future, hence making it appear that the cost of the system (in net-present-value terms) is lower than it was before.

If all of these reforms were to be introduced (assuming that the discount rate is reduced from RPI+2.2% to RPI+1.1%), then, compared with the baseline system in place in 2016–17, they would:

- increase graduate contributions by around £13,000, on average, per student in 2016 money;

- reduce the total taxpayer contribution to the cost of teaching undergraduates by around £3.9 billion (45%) per year in 2016 money;

- reduce the RAB charge by around 17 percentage points (from around 39% to around 22%).

The majority of these changes are driven by the change in the discount rate.

The big question, of course, is the effect we expect these changes to have on participation. Whether they lead to a reduction in participation, especially amongst students from the poorest backgrounds, will depend on how debt averse students are, how credit constrained they are whilst at university, and how responsive participation decisions are to expected increases in the long-run cost of higher education.

Full-time participation rates amongst students from poor backgrounds did not fall following the major changes to higher education finance introduced in 2012, but those reforms involved a real increase in grants and a reduction in the expected long-run cost of university for the poorest students. This is not the case with the proposed reforms, with students from poor family backgrounds seeing the biggest changes to the type of support, the level of support and the overall long-run cost of going to university. Only time will tell what the overall effect on university participation will be for students from these backgrounds.

Appendix

Table A1. Money flows per student (£000s unless stated otherwise, 2016 money)

	Revised 2016–17 system	Threshold freeze then rise in line with average earnings (fees not uprated)	Threshold freeze then rise in line with RPI (fees not uprated)
RAB charge	43.8%	35.7%	26.9%
Initial govt spending	49.2	49.2	49.2
Taxpayer contribution	22.6	18.8	14.6
Graduate contribution	26.6	30.4	34.5
University funding	27.8	27.8	27.8
Student funding	21.4	21.4	21.4
Of which: Maint. loan	19.8	19.8	19.8
Maint. grant	0.0	0.0	0.0
Bursaries	1.6	1.6	1.6
Per 362,000 students			
Total up-front govt spend	17,798m	17,798m	17,798m
Total long-run contribution	8,185m	6,811m	5,303m

Note: All figures are given in 2016 prices in £000s, discounted using a discount rate equal to the government's assumed cost of borrowing (assumed to be RPI+2.2%), unless otherwise stated. Assumes all students take out the maximum loan to which they are entitled, repay following their repayment schedule and have no unearned income.
Source: Authors' calculations using IFS's graduate repayments model.

Figure A1. Expected average NPV repayments: new system (default parental income correlation, 0.2) versus new system (high parental income correlation, 0.6) in 2016–17 (2016 money)