





































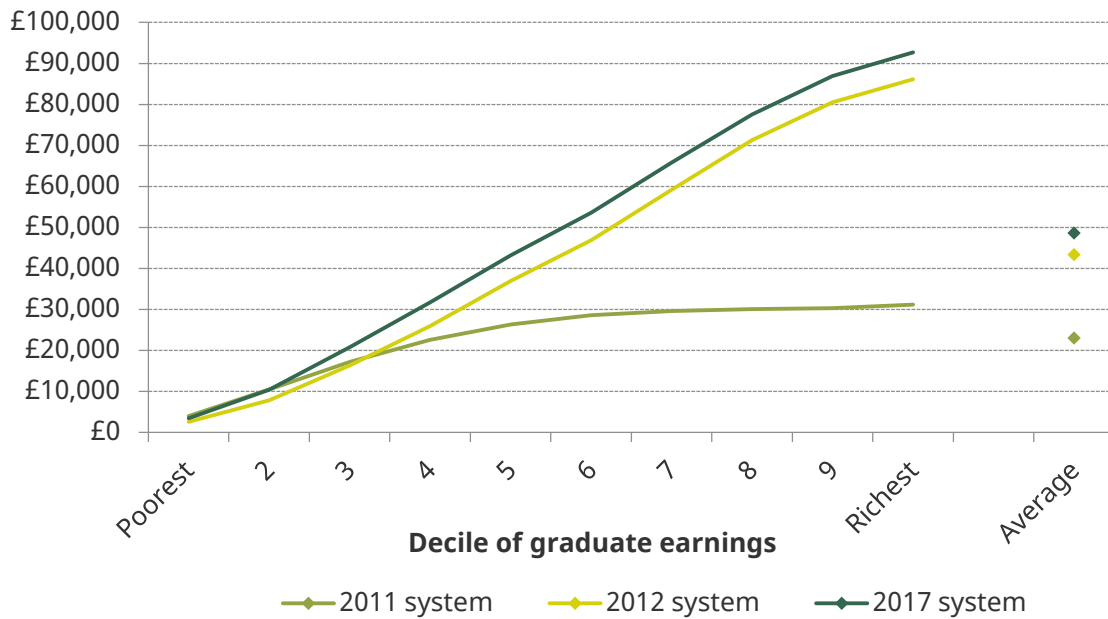








**Figure 3.3. Expected average lifetime repayments by decile of graduate lifetime earnings for 2017–18 cohort (2017 prices, not discounted)**



Note: Figures in 2017 prices, deflated using CPI inflation, not discounted. These figures apply to young full-time English-domiciled students studying at the 90 largest universities in England starting in 2017–18. Cohort of students is held constant across systems. We assume that all students take out the full loans to which they are entitled, that there is no dropout from university, that graduates repay according to the repayment schedule and that they have low unearned income.

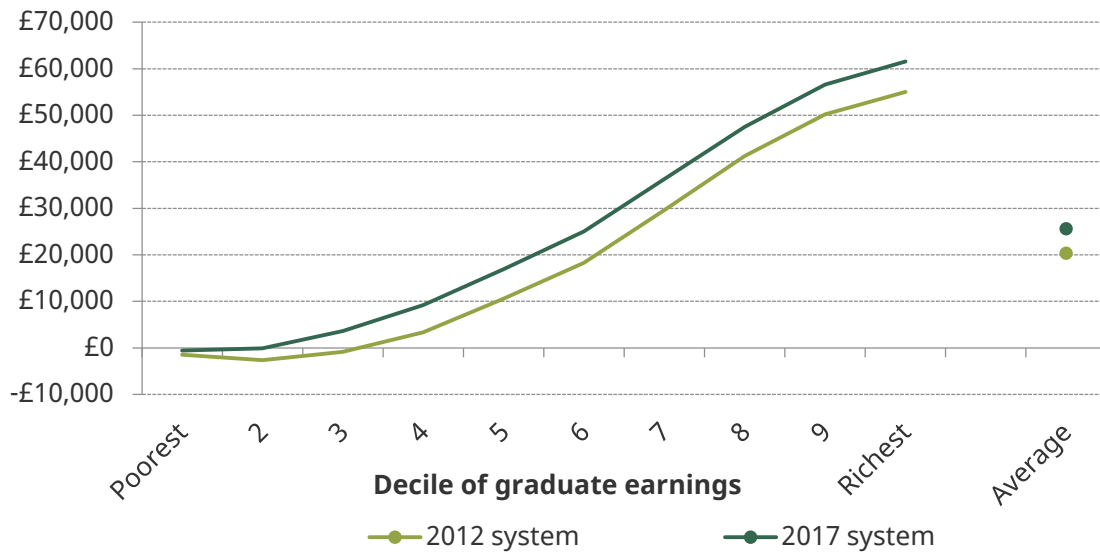
Source: Authors' calculations using IFS's graduate repayments model.

Figure 3.3 shows the value of repayments graduates can expect to make over their lifetime, both on average and across the distribution of graduate lifetime earnings. This is given in real terms (deflated to 2017 prices), but not discounted.<sup>19</sup> On average, graduates will repay £48,600 under the 2017 system, more than double what they would have paid if they had faced the 2011 system. Much of this difference was driven by the 2012 reforms, which increased average graduate repayments by more than £20,000. Reforms since 2012 have acted to increase average graduate repayments by a further £5,000.

However, focusing on these averages masks significant variation across graduates. The 2011 repayment system was progressive, with the highest-earning graduates making the largest contributions. Figure 3.4 shows the difference in expected repayments between the 2011 system and each of the 2012 and 2017 systems. The 2012 reform dramatically increased the progressivity of the system, by reducing repayments for graduates from the bottom 30% of the lifetime earnings distribution while significantly increasing repayments for the highest-earning graduates. Conversely, changes since 2012 have increased

<sup>19</sup> This is unlike in Section 2 (government finances), where future payments are discounted at 0.7% in real terms. It is typical to assume individuals do discount future payments, but it is unclear what rate should be used. Here we show the real value of non-discounted payments to provide an illustration of the repayments graduates can expect to make in today's money. In Appendix Figure A.2, we show the same figures using a real discount rate of 2.5%. This significantly reduces the value of expected long-run repayments but the pattern of findings shown here holds true.

**Figure 3.4. Change in average lifetime repayments by decile of graduate lifetime earnings for 2017–18 cohort relative to 2011 system (2017 prices, not discounted)**



Note: Difference in lifetime repayments compared with the 2011 system. Figures in 2017 prices, deflated using CPI inflation, not discounted. These figures apply to young full-time English-domiciled students studying at the 90 largest universities in England starting in 2017–18. Cohort of students is held constant across systems. We assume that all students take out the full loans to which they are entitled, that there is no dropout from university, that graduates repay according to the repayment schedule and that they have low unearned income.

Source: Authors' calculations using IFS's graduate repayments model.

**Figure 3.5. Impact of reforms on lifetime repayments as a proportion of lifetime income**



Note: Difference in lifetime repayments as a percentage of lifetime earnings compared with the 2011 system (for 2012 reform) or the 2012 system (for changes since 2012). Figures in 2017 prices, deflated using CPI inflation, not discounted. These figures apply to young full-time English-domiciled students studying at the 90 largest universities in England starting in 2017–18. Cohort of students is held constant across systems. We assume that all students take out the full loans to which they are entitled, that there is no dropout from university, that graduates repay according to the repayment schedule and that they have low unearned income.

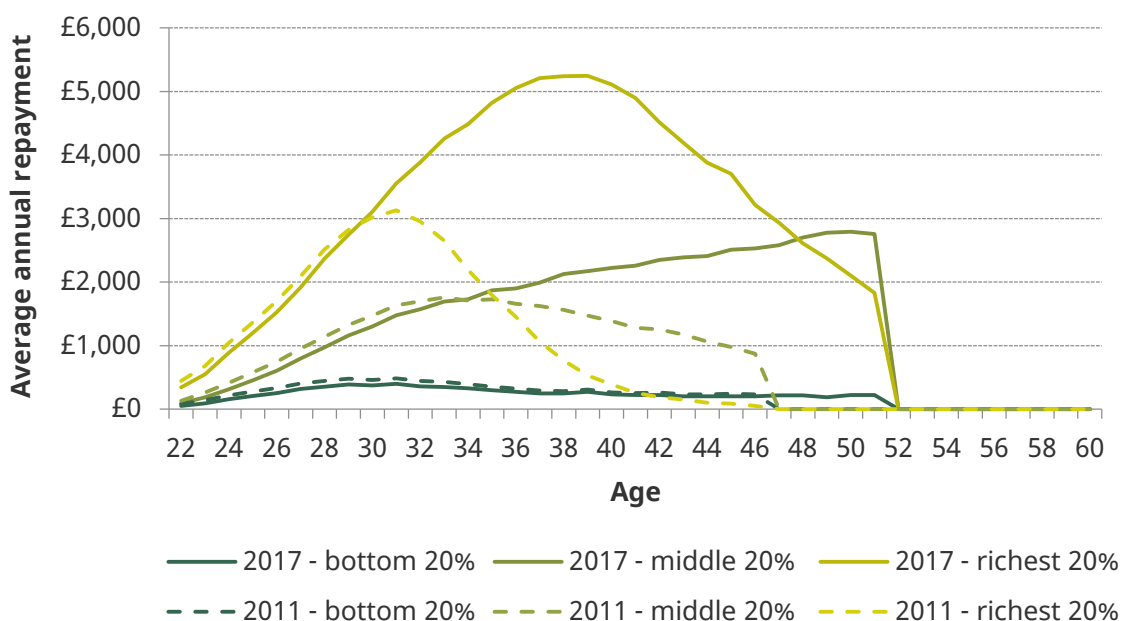
Source: Authors' calculations using IFS's graduate repayments model.

average repayments at all levels of earnings. Consequently, graduates from the bottom 30% are now no better off than they would have been had they faced the 2011 system.

We can also look at how the reforms in 2012 and the changes since 2012 have affected lifetime repayments as a proportion of graduates' lifetime income. This is shown in Figure 3.5.<sup>20</sup> Overall, the effects are small: the 2012 reform increased repayments by around 0.8% of lifetime income, and subsequent changes have increased repayments by a further 0.2% of lifetime income. Looking at these changes across the distribution of graduate earnings reveals the stark difference between these two reforms. Even as a proportion of income, the 2012 reform increased the repayment burden of high-earning graduates the most. However, the changes since 2012 have increased repayments as a proportion of lifetime earnings the most amongst graduates in the third and fourth deciles of earnings.

Figure 3.6 shows how these repayments are distributed across graduates' lifetimes. For the top 20% of earners, repayments are nearly identical under the 2011 and 2017 systems for the first nine years, but thereafter are much higher under the current system. Before the increase in fees in 2012, debt levels were such that some of the highest earners had repaid the full amount of the loan after about eight years. By age 47, when the loan was written off, virtually no graduates in the top 20% of earnings had any debt outstanding.

**Figure 3.6. Repayments over the lifetime by graduate lifetime earnings quantile (2017 prices, not discounted)**



Note: Average repayments by age for graduates in the top, middle and bottom 20% of the lifetime graduate earnings distribution. Figures in 2017 prices, deflated using CPI inflation, not discounted. These figures apply to young full-time English-domiciled students studying at the 90 largest universities in England starting in 2017-18. Cohort of students is held constant across systems. We assume that all students take out the full loans to which they are entitled, that there is no dropout from university, that graduates repay according to the repayment schedule and that they have low unearned income.

Source: Authors' calculations using IFS's graduate repayments model.

<sup>20</sup> Here we define lifetime income as earnings during the repayment period, between ages 23 and 53.

---

Under the new system, it takes much longer for the richest graduates to have repaid the full amount of their loan, and even a non-negligible part of the 20% richest graduates will have some of their loan written off after 30 years. The impact of the reforms on the lowest 20% of earners is negligible as they never repaid the full amount of their debt under the 2011 system. The only difference is that their repayments continue five years longer due to the change in the write-off period.

In Appendix Figure A.3, we show these numbers as a share of earnings by age, highlighting the repayment burden. With a repayment rate of 9% above the repayment threshold, repayment burdens can never exceed 9%, excluding voluntary repayments. The figure shows that repayment burdens are typically around 3%, are lowest for the lowest earners and reach a maximum of just over 5%.

We now explore two specific elements of the student finance system in more detail, focusing on the repayment threshold and interest rates applied to student debt.

### The repayment threshold

The 2012 reform set the threshold above which graduates begin to repay student loans at £21,000 in 2016, with the threshold increasing to reflect nominal earnings growth thereafter. However, in 2015, it was announced that the threshold would be frozen at £21,000 in cash terms until 2021.<sup>21</sup> The freeze means that the repayment threshold will be 10% lower than it would have been had it risen with earnings. As a result, more graduates will have earnings above the threshold, and hence have to start making repayments. For all those who were already above the threshold, annual repayments will be larger while they still have positive student debt.

Figure 3.7 shows the change in average repayments by decile of graduate earnings due to this threshold freeze relative to if the threshold had increased in line with nominal earnings as previously announced. This reform increases average graduate repayments by more than £4,000. This is because the threshold freeze has a permanent impact; in all future years, the threshold will be lower than it otherwise would have been. Therefore, graduate repayments are higher in every year. The impact is concentrated in the middle of the earnings distribution. Low earners are less affected as the majority of their earnings remain below the new lower threshold, while high earners experience little overall difference as they would have repaid their entire loan anyway (although it does bring their repayments forward so they have lower net incomes earlier in their lives but higher net incomes later). It is middle earners who repay up to nearly £7,000 more over their lifetime as a result of the threshold freeze. A cash-terms freeze for a further five years follows a similar pattern: it increases average repayments by £8,000 relative to no threshold freeze, again with the largest increases concentrated in the middle of the earnings distribution. A continued threshold freeze begins to affect more and more low-earning graduates.

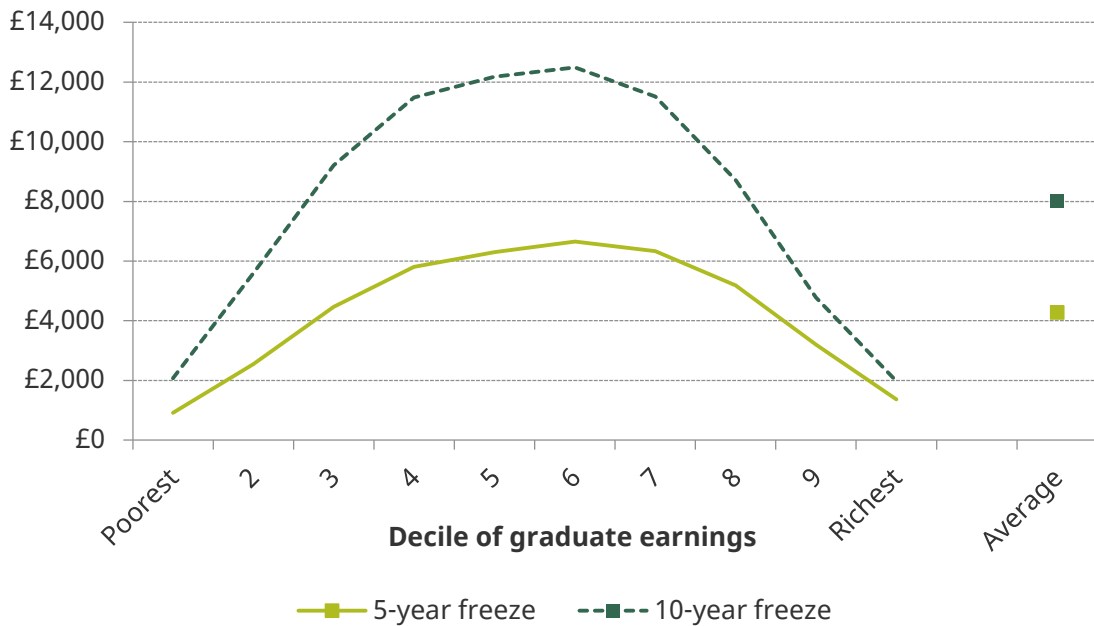
These increased graduate repayments result in a lower government subsidy. The threshold freeze between 2016 and 2021 reduced the long-run taxpayer cost from £7 billion to £5.9 billion. Continuing the freeze for a further five years would save the government a further £700 million.

---

<sup>21</sup> The rationale behind this freeze was that earnings grew by less than expected between 2012 and 2016, resulting in a threshold that was 'too high' in 2016 (Department for Business, Innovation and Skills, 2015).



**Figure 3.7. Impact of threshold freeze on average repayments by decile of graduate lifetime earnings (2017 prices, not discounted)**



Note: Difference in lifetime graduate repayments between the current system, had thresholds increased in line with nominal earnings growth from 2017, and the same system with a nominal freeze of the repayments thresholds for five or ten years. Figures in 2017 prices, deflated using CPI inflation, not discounted. These figures apply to young full-time English-domiciled students studying at the 90 largest universities in England starting in 2017–18. Cohort of students is held constant across systems. We assume that all students take out the full loans to which they are entitled, that there is no dropout from university, that graduates repay according to the repayment schedule and that they have low unearned income.

Source: Authors’ calculations using IFS’s graduate repayments model.

### Interest rates

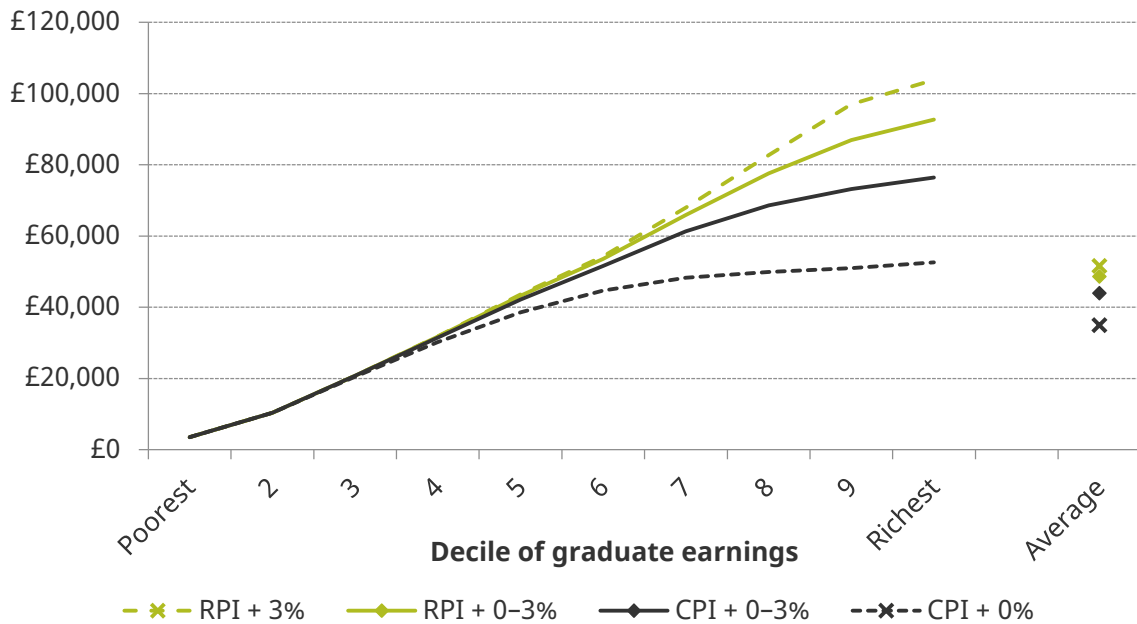
A second highly controversial area of the current student loans system is the high interest rate applied to debt. Until 2012, interest rates were fixed at the minimum of base rate + 1% or RPI. However, the 2012 reform increased interest rates on new loans to RPI + 3% while studying and an increasing rate of RPI + 0–3% depending on earnings. We now consider the impact of the positive rate above RPI, and the use of RPI itself to index interest rates. RPI has been shown to systematically overstate the rate of inflation by around 1 percentage point.<sup>22</sup>

The interest rate charged continues to affect the level of debt after graduation and hence impacts the repayments students can expect to make over their lifetimes. Figure 3.8 shows lifetime student repayments by graduate earnings decile under various interest rates.

The choice of interest rate has virtually no impact on the repayments of graduates in the bottom 40% of the graduate earnings distribution. This is because very few graduates with this level of earnings repay the full principal value of their loan and so most do not begin to repay the interest accrued. However, the interest rate has a significant impact on the

<sup>22</sup> Box 3.3 of Office for Budget Responsibility (2015).

**Figure 3.8. Impact of interest rates on real graduate repayments by lifetime earnings decile (2017 prices, not discounted)**



Note: Average graduate repayments under the current interest rate regime of RPI + 3% while studying and RPI + 0-3% depending on income thereafter; with the same tapered interest rate but using CPI + 0-3% after graduation; with a flat rate of RPI + 3% for all graduates; and with a flat rate of CPI + 0% interest. Figures in 2017 prices, deflated using CPI inflation, not discounted. These figures apply to young full-time English-domiciled students studying at the 90 largest universities in England starting in 2017-18. Cohort of students is held constant across systems. We assume that all students take out the full loans to which they are entitled, that there is no dropout from university, that graduates repay according to the repayment schedule and that they have low unearned income.

Source: Authors' calculations using IFS's graduate repayments model.

repayments of top earners. The higher the interest rate, the higher the real value of repayments made by top earners; under the current system, graduates in the top decile repay an average of £93,000 in 2017 prices over their lifetime. Under a zero real interest rate (CPI + 0%), the top decile of earners would only repay £53,000 on average.<sup>23</sup> It is worth noting that the interest rate does not increase the existing repayment burden in any given year. Instead it increases the length of time for which high-earning graduates repay their loans. Under a zero real interest rate graduates in the top decile would finish repaying their loans after an average of 16 years, whereas with an interest rate of RPI + 0-3% they will only finish repaying after 21 years on average.

As discussed in Section 2, positive real interest rates result in top earners paying back more in real terms than they borrow. Indeed, they may pay back more than they would have to if borrowing a similar amount privately (for example, through taking a larger mortgage loan in order to pay off student debt), either by taking out a loan after graduation or through parents. This raises an important issue: if top earners can acquire credit with a lower interest rate, they may be incentivised to repay loans early (or not take

<sup>23</sup> If instead the variable interest rate RPI + 0-3% were replaced with a fixed rate of RPI + 3%, this would increase the average repayments of the top decile of earners to £104,000 and again have no impact on low earners.

---

out loans in the first place). This will increase the overall taxpayer cost of HE provision in the long run.

We explored this potential risk to government finances in Section 2, showing that in the most extreme case – if no earners in the top quintile take out loans – the long-run taxpayer cost would increase by £700 million. However, the use of an interest rate of RPI + 0–3% rather than CPI + 0% reduces the long-run taxpayer cost by £2.9 billion. While the entirety of the saving may not be realised if some high earners do not take up loans, it is clear that charging a positive real interest rate has a large net benefit for government finances. This would be a challenging amount to raise elsewhere (we discuss options for raising more money from the student loan system in Section 5).

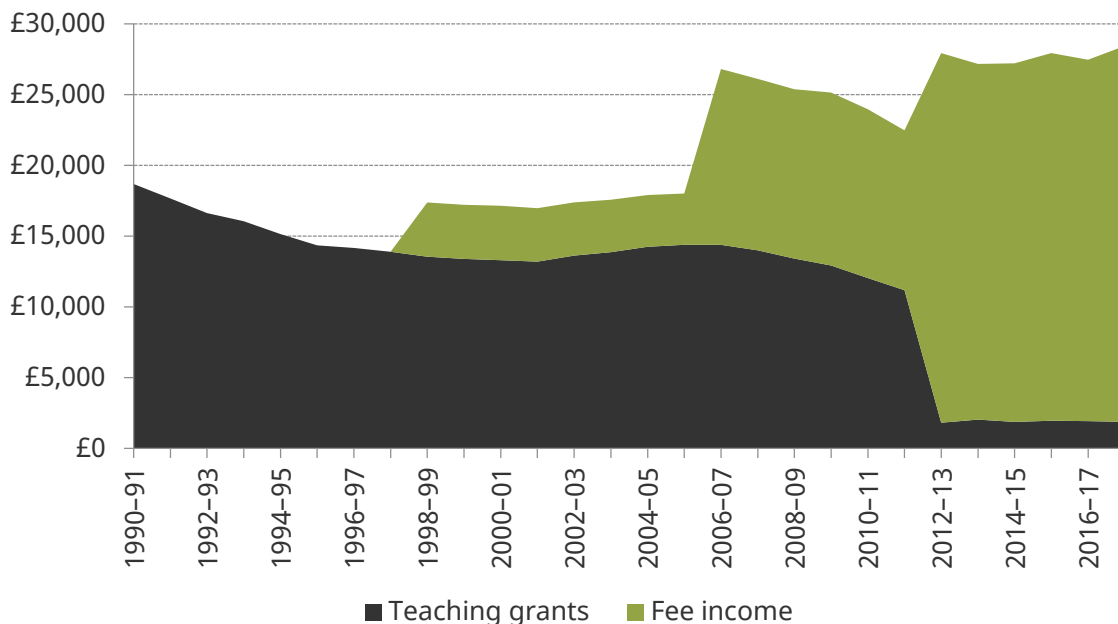
## 4. University Funding

The previous two sections explored how recent reforms have affected how the costs of HE are distributed between government and graduates, and between different types of graduates. Here, we look at how these reforms have impacted the level of HE funding and which subjects receive this funding.

Figure 4.1 shows the average level of resources universities receive per student to fund the cost of providing a degree, by cohort of entry into HE since 1990–91. The 2012 reform increased the total level of resources universities receive per student per degree by around 25% from £22,500 to £28,000 in 2017 prices. This was a result of the increase in tuition fee income exceeding the loss in teaching grant income. The falling real value of the fee cap since 2012 has reduced funding per student at some universities, but the average figure has been offset by increasingly more universities charging the maximum possible fees and by reductions in fee waivers and bursaries.

These changes continue a consistent trend of HE institution income transitioning from direct teaching grants to tuition fees funded by student loans. In the early 1990s, university teaching income per student in England consisted entirely of teaching grants, whereas now the vast majority of teaching income per student is through fees. Throughout the 1990s, the value of these grants declined in real terms per student

**Figure 4.1. University resources per student per degree for students starting between 1990–91 and 2017–18 (2017 prices)**



Note: Deflated using the GDP deflator. The fee incomes prior to 2012–13 assume all courses are three years, so they represent a slight underestimate. Institution-specific bursaries and fee waivers (when appropriate) are deducted from fee income.

Source: HEFCE Teaching Grant Letters, various years, <http://www.hefce.ac.uk/funding/annalocns/>. HM Treasury deflators, March 2016, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/509245/GDP\\_Deflators\\_Budget\\_2016\\_update.csv/preview](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/509245/GDP_Deflators_Budget_2016_update.csv/preview).

(Murphy, Scott-Clayton and Wyness, 2017). There have been three major increases in fees since then, in 1998, 2006 and 2012. Each of these increases resulted in a sudden boost to university income, followed by subsequent flatlining or declines in funding. This has resulted in extremely high variation in funding per student over the past 30 years, which is unlikely to be optimal.<sup>24</sup> However, it should be noted that the general trend is upwards, and that university funding per student is currently at the highest level it has ever been in the last 30 years.

The 2012 reform also affected the level of funding for different subjects. Universities receive different funding for different courses, based on the price group of each course. Group A courses include clinical stages of medicine and dentistry, Groups B and C include subjects with laboratory or fieldwork elements (Group C is split into two bands, C1 and C2, with C1 considered the marginally more expensive) and Group D includes all other subjects.

Table 4.1 shows teaching grant and fee income per student that universities would receive for each of the five course groups. The table again shows the big shift away from grants

**Table 4.1. University funding per student per year (2017 prices)**

	Course price group				
	A	B	C1	C2	D
<i>Share of students</i>	2%	20%	18%	28%	33%
<b>Funding under 2011–12 system</b>					
HEFCE funding	14,543	5,337	3,736	3,736	2,536
Fees	3,681	3,681	3,681	3,681	3,681
<b>Total</b>	<b>18,224</b>	<b>9,018</b>	<b>7,417</b>	<b>7,417</b>	<b>6,217</b>
<b>Funding in 2016–17 under new system</b>					
HEFCE funding	10,180	1,527	255	0	0
Fees	9,162	9,162	9,162	9,162	9,162
<b>Total</b>	<b>19,342</b>	<b>10,689</b>	<b>9,417</b>	<b>9,162</b>	<b>9,162</b>
<b>Change in funding</b>	+6%	+19%	+27%	+24%	+47%

Note: Per full-time undergraduate. Deflated using GDP deflator. Figures for both systems exclude London weighting. The figure includes the scaling factor to ensure HEFCE allocations remain within budget (1.018 for 2016–17).

Source: HEFCE, 'Recurrent grants and student number controls for 2012-13'

[http://www.hefce.ac.uk/media/hefce/content/pubs/2012/201208/12\\_08\\_1123.pdf](http://www.hefce.ac.uk/media/hefce/content/pubs/2012/201208/12_08_1123.pdf) for 2011–12 figures. HEFCE, 'Guide to funding 2016–17',

[http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/2016/201607/HEFCE2016\\_07.pdf](http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/2016/201607/HEFCE2016_07.pdf) for 2016–17 figures. HM Treasury deflators, March 2016,

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/509245/GDP\\_Deflators\\_Budget\\_2016\\_update.csv/preview](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/509245/GDP_Deflators_Budget_2016_update.csv/preview). Student numbers are from HESA data 2015–16 based on all students in university in 2015–16.

<sup>24</sup> Although we note that universities with multiple cohorts of students have the ability to smooth funding across cohorts.

---

towards fee income between the 2011–12 and 2016–17 systems. It also highlights how the relative incomes from each course group changed over that period. In 2011–12, funding for Group A courses was around £18,000 per student, around three times the funding for Group D of around £6,000. By 2016–17, average funding per Group A course increased to around £19,000, while funding for Group D courses was around £9,000. This is a 47% increase in funding for Group D courses compared with just a 6% increase for Group A.

This has not yet had a clear effect on the student number shares within each group, which are very similar to 2011 figures. However, it might have an important effect in future, particularly if universities have been slow to adjust to the changes. While universities may be deciding to reallocate funds to cross-subsidise subjects, these funding changes appear to be at odds with the government's intention to promote typically high-cost STEM subjects.<sup>25</sup>

---

<sup>25</sup> Science, technology, engineering and mathematics.

---

## 5. Directions for Policy

In their manifesto in 2017, Labour announced plans to scrap tuition fees and reintroduce maintenance grants for the poorest students. This would represent a major reversal of recent policy reforms and come at a significant cost, increasing the government deficit by £12.7 billion.

In this section, we explore the broad impact of these reforms and other potential reforms for the HE finance system. This is a complex area where there are multiple trade-offs to be managed and where there are no simple or costless reforms available that would unambiguously improve the system.

### Tuition fees

One oft-cited potential reform to the HE system in England is the reduction or removal of tuition fees. Under the current system, 93% of university income from teaching comes from tuition fees.<sup>26</sup> Therefore, any discussion of changing tuition fees is not complete without considering the impact on university income. The simplest case is to assume that university funding is held constant by replacing lost tuition fee income one-for-one with increased teaching grants.

Under this scenario, reducing (or scrapping) tuition fees has little impact on up-front government expenditure on HE. Outlay on tuition fee loans is replaced by spending on teaching grants, with a small increase in the up-front cost due to students who were not taking out loans under the current system. But moving from loans to grants increases measured government borrowing.<sup>27</sup> Tuition fee loans add to the overall level of government debt but do not appear in the deficit until they are written off 30 years later (this is because at least part of the value is expected to be repaid).

Reducing tuition fees also clearly increases the long-run cost to government as graduate contributions through loan repayments are reduced. The main beneficiaries from reducing fees would be high-earning graduates, as they are the ones making the highest repayments under the current system.

An alternative reform is to increase the cap on tuition fees, as is proposed for 2017–18 (fees are due to rise to £9,250 per year). Assuming teaching grants are unchanged, small increases in fees such as this raise the overall level of universities' resources and are paid for by high-earning graduates and the government (through loan write-offs). Low-earning graduates are unaffected in terms of repayments as they do not earn enough to repay even the current level of fees.

Larger increases in fees would have a relatively smaller impact on graduate contributions as very few graduates would end up repaying the loans (77% of students already expect to have some debt written off after 30 years). These increases end up effectively being a

---

<sup>26</sup> This definition of university income includes fee income and income from government teaching grants. Research grants and income from other sources (including international and postgraduate students) are excluded.

<sup>27</sup> Defined as public sector net borrowing.

---

transfer from government to universities, albeit one that does not affect the deficit in the short run.

## Student maintenance funding

In 2016–17, means-tested maintenance grants were abolished for students from low-income backgrounds and replaced with (slightly larger) maintenance loans. One impact of this is that students from poorer backgrounds now graduate with more debt than those from better-off families. One potential option for future policy would be to reverse this policy change by reintroducing maintenance grants for the poorest students.

Such a reform would increase measured public borrowing by around £2 billion (if the current loans were converted directly into grants). This would make no difference to the amount of cash-in-pockets students receive, although students may value ‘free cash’ more than loans – even if they do not expect to repay them. The long-run cost is considerably lower, because a significant part of the maintenance loans is not expected to be repaid.

## Funding for nurses and teachers

Nurses currently receive bursaries, which cover the full cost of tuition. These bursaries will be abolished from September 2017, meaning nurses will face tuition fees (which they can pay for with a fee loan from government) like the rest of the student population. This has the potential to reduce the supply of nurses; indeed applications dropped 23% in the last year.<sup>28</sup> Teachers also face tuition fees for their Initial Teacher Training, which they can also pay for with fee loans from government.

One potential policy would be to bring back (or introduce) bursaries to cover fees for students going into these two professions. As with a general tuition fee removal, this comes with a short-run disadvantage of increasing deficit spending. The number of places could be restricted to limit this effect. In the long run, these policies would be relatively low-cost because a large proportion of nurses’ and teachers’ tuition fee debt is expected to be written off anyway. This is particularly true for teachers who train through a postgraduate route as they have to fully repay their undergraduate loan before they begin repaying the additional loan for teacher training.

An alternative approach is to offer forgiveness on student loan repayments while individuals remain in the profession, as was promised for teachers in the 2017 Conservative manifesto. This may be more costly in the case of teachers as it reduces repayments on teacher undergraduate loans – as well as postgraduate loans – some of which would have been repaid. However, this policy would reclaim all potential repayments if a teacher left the profession for a more highly paid job and this provides an

---

<sup>28</sup> See: <https://www.ucas.com/corporate/data-and-analysis/ucas-undergraduate-releases/2017-cycle-applicant-figures-%E2%80%93-march-deadline>. Although in practice the number of nurses training this year may actually rise.



---

incentive for teachers to remain in teaching. Similar policies have been successful in other countries, such as in Florida, US (Feng and Sass, 2015).<sup>29</sup>

## Changing the student loan system

Under the 2017–18 HE system, 96% of the up-front government outlay on undergraduate teaching is through student loans. There are various policy levers in the student loan system that the government could adjust to increase graduate contributions. Each has a slightly different impact on graduates in different parts of the earnings distribution.

Under the current system, graduates repay their student loans at a rate of 9% of income over £21,000 per year and any outstanding debt is written off after 30 years. We consider in turn the impact of changing the interest rate, the repayment threshold, the repayment period and the repayment rate, and an alternative policy to implement a surcharge on debt.

### Interest rates

Interest rates on student debt are controversial. They are currently RPI + 3% during study and RPI + 0–3% (depending on income) while working. Reducing the real interest rate reduces the repayments for high-earning graduates and therefore increases the overall cost to government. Low-earning graduates are relatively unaffected by the interest rate charged (at least in terms of their scheduled loan repayments) as they typically do not earn enough to begin to repay the interest accrued on their loans. However, reducing the real interest rate would also reduce the risk posed to government finances of high-earning graduates repaying early or not taking out student loans. A lower (or zero) real interest rate reduces the incentive for students to find credit outside the student loan system and reduces the cross-subsidisation present in the current system.

### Repayment threshold

Reducing the repayment threshold increases graduate contributions and so reduces the taxpayer cost. The increase in graduate contributions is concentrated in the middle of the graduate earnings distribution. The highest-earning graduates are relatively unaffected over their lifetimes, as they are likely to repay the full value of their loans anyway; however, a lower threshold brings forward their future repayments, reducing net incomes in the short run (but increasing them later). Those low-earning graduates who earn below the new threshold are also unaffected, meaning it is typically middle-earning graduates who are most affected.

### Repayment period

Increasing the period before outstanding loans are written off increases the repayments of all graduates who would not have repaid their loans in full under the current system. Given that 77% of graduates are expected to have some outstanding loans written off, increasing the repayment period would increase the repayments of all but the richest graduates. Middle earners would again experience the largest increase in repayments as they are likely to be earning more than low earners during these additional years. However, given that the current repayment period ends when a typical graduate is 53 (and

---

<sup>29</sup> This example offered loan write-off, rather than repayment forgiveness, if a teacher remained in the profession for a number of years, but the principle is similar.

---

much later for mature students), it is worth considering the implications of an extended repayment period for retirement decisions.

### Repayment rate

Increasing the repayment rate increases the repayments in any given year of all graduates earning above the repayment threshold. As with lowering the repayment threshold, for high-earning graduates who are expected to repay their loans in full, this again acts to bring forward future repayments with little impact on the total value of contributions, while there is no impact for low earners below the repayment threshold. As such, increasing the repayment rate again reduces government costs by increasing the contribution from middle-earning graduates.

Wider implications of changing the repayment rate should be taken into account. An important consideration is that student loan repayments act very similarly to a tax on earnings. It is therefore possible that a higher repayment rate could reduce the incentive to work or earn more. This could reduce the level of graduate repayments and, more importantly, the receipts from income tax and National Insurance contributions.

### Surcharge on debt

An alternative way the government could increase contributions from high-earning graduates is to impose a surcharge on student debt upon graduation in conjunction with lower interest rates. This would reduce the incentives for high-earning graduates to make voluntary early repayments.<sup>30</sup> Those who would not have repaid the initial debt are unaffected as the additional debt will be written off after 30 years. However, a high surcharge may discourage individuals with well-off parents expecting to have high lifetime earnings taking out loans. It may also have adverse consequences for participation if lower-earning graduates are debt averse and are deterred by the high headline debt levels on graduation.<sup>31</sup>

## Increasing the number of high-quality STEM graduates

It is clear that producing high-quality STEM graduates is a priority for the English higher education system. In 2016, a government review explored the provision of STEM degrees and the employability of graduates.<sup>32</sup> Increasing the number of high-quality STEM graduates is a two-stage problem: encouraging high-quality students to apply for STEM subjects and incentivising universities to provide high-quality STEM courses.

The 2012 reform increased the funding of all subjects. However, this increase was largest amongst low-cost, typically non-STEM, courses, while STEM degrees experienced much smaller increases. Prior to the 2012 reforms, universities received much less funding for subjects that were cheaper to teach than they did for more expensive ones. Since the 2012 reform, however, the funding universities receive for a given course is much less dependent on the cost of providing this course. This change potentially increased the

---

<sup>30</sup> See Barr et al. (2017) for a discussion of the theoretical underpinnings of designing an income-contingent loan system from scratch for the US, and the distributional and revenue implications of imposing different combinations of surcharges and real interest rates using US data.

<sup>31</sup> For poor students, interest accrued whilst at university is equivalent to a 13% loan surcharge.

<sup>32</sup> The Wakeham Review (BIS and HEFCE, 2016).

---

incentive for universities to provide cheaper non-STEM over more expensive STEM courses.<sup>33</sup> One way to alleviate this problem might be to allow different subjects to charge different fees, as is the case in Australia. The prospect of receiving higher fee income for providing a STEM course might encourage universities to provide more or higher-quality degrees.

Encouraging more or higher-quality students to apply for STEM courses is likely to require a different set of policies. These may be in the form of additional teaching grants or bursaries to students, additional information provided about the returns to studying STEM courses, or training in schools to prepare more students for STEM degrees.

### Access for private providers

The Higher Education and Research Bill passed in April 2017 makes it easier for new providers to enter the market and obtain degree-awarding powers. The intention (outlined in the government White Paper on higher education<sup>34</sup>) was for new providers to increase competition and therefore quality.

A crucial area for government consideration is the provision of loans for students at these private providers. Currently, loans of £6,000 per student are available at a small number of institutions. Extending this loan availability could improve both the quality of private providers and access to them for poor students. However, similar policies in the US and Australia have run into difficulties, with low-quality institutions setting up to extract large profits from government while adding limited value to students. This is particularly pertinent in an environment with a lack of information on quality available to students, which results in competition not necessarily feeding into quality improvements. In this context, regulation of quality is essential.

### Targeted teaching grants

One feature of the current system is that there are very low levels of direct teaching grants. Instead, the government subsidy to HE is paid almost entirely through the loan subsidy. An implicit result of this is that the government subsidy is targeted at students with low expected future earnings, as these are the students who will not repay their loans. This would not seem to be an optimal targeting of the subsidy. A system with higher levels of teaching grants, on the other hand, would provide the government with more opportunity to target these teaching grants towards the subjects, institutions or students that yield the highest public benefit.

### Selling the loan book

Another way in which student loans can impact government finances is if the government chooses to sell the loan book. The intention to do this for loans issued between 2002 and 2012 was announced in February 2017.<sup>35</sup> Selling the student loan book trades an asset that

---

<sup>33</sup> Although, in practice, universities might cross-subsidise between subjects if they have a vested interest in providing particular courses.

<sup>34</sup> Department for Business, 2016a.

<sup>35</sup> <https://www.gov.uk/government/news/government-launches-first-sale-from-the-student-loan-book>.

---

has an expected return in the future (in the form of graduate repayments) for an up-front sum. It should be noted that selling the loan book for its expected value does not 'improve' government finances and the proceeds cannot be used to fund an additional expenditure; it merely brings forward expected future income. Selling the loan book could reduce the level of government debt if the asset is fully securitised; that is, the government no longer bears any of the uncertainty over the future value of repayments.

Under the proposals announced in February 2017, students would be completely unaffected by the sale of the loan book. In order for this to be the case, and for the asset to be accurately valued, the government must set out all future parameters of the repayment model including, for example, how the repayment threshold is to be updated over time. In the recent past, the government has appeared reluctant to do this, as evidenced by the retroactive cash-terms freeze in the repayment threshold for post-2012 loans. Trading future repayments for up-front income highlights the value the government places on certain money now over uncertain future money. The value at which the loan book is sold could reveal some information about the true government valuation of student loans (and hence the true government discount rate).

---

## 6. Conclusion

In this briefing note, we have provided up-to-date estimates of the long-run cost of higher education. We have shown the impact of various policy changes on the long-run cost to government, student debt and graduate repayments, and university income. We highlight the dramatic switch away from grants towards loans in recent years and point out that recent reforms have simultaneously reduced the long-run government costs of HE and increased university funding.

However, there remain major issues with the system. First, although we have yet to see large declines in student numbers, the long-run cost of university is now considerably greater – both in terms of debt on graduation and in terms of long-run repayments – for prospective students, and this may reduce participation in the longer term. Second, the current system does not give the government much flexibility to directly target courses or individuals that have high value to society. This is because the vast majority of the government contribution to HE teaching now comes through loans that are not repaid by low-earning individuals. A more grant-based system would allow the government to target high-return individuals or courses much more flexibly. Such an approach is reflected in the removal of maintenance grants for poor students and the large shift in per-student funding for different courses, with funding increasing much more for lower-cost ‘Group D’ courses than for high-cost ‘Group A’ courses.

The long-run government contribution to undergraduate teaching is considerably lower than before the 2012 reforms. However, if the government were to try to extract more money from graduates, there are numerous parameters in the student loan system that it can draw from. Different parameters will have different impacts on graduates, but it is important to recognise that the contributions of the highest earners are already considerably higher than the amount they borrow.

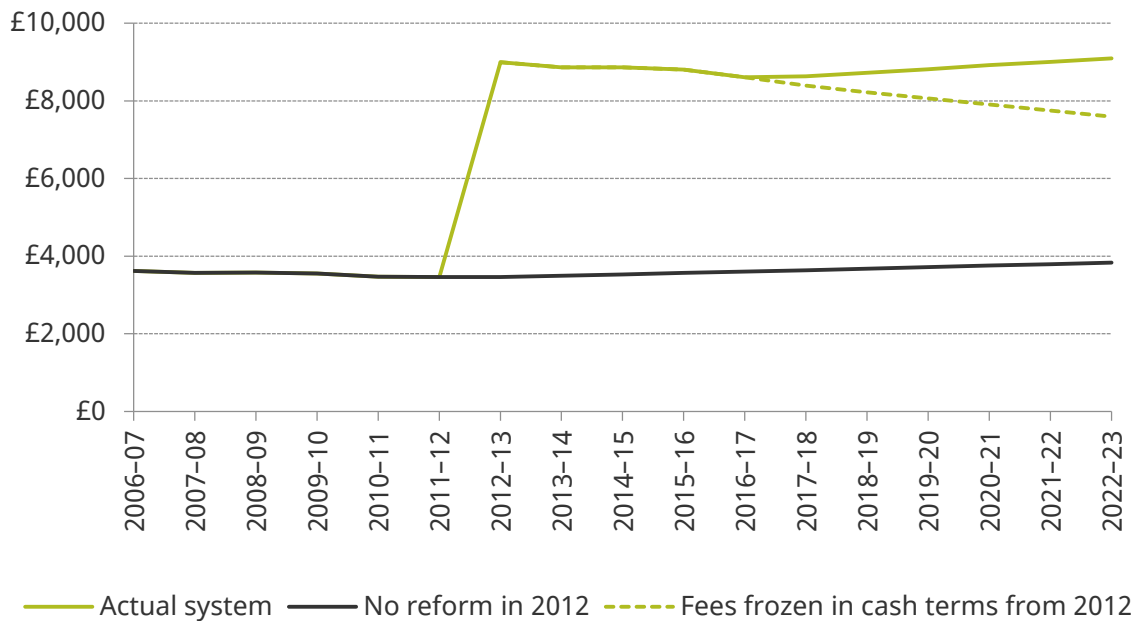
Finally, reducing tuition fees or bringing back maintenance grants would have the advantage of allowing government to target specific students or courses that have wider benefits to society. This would, however, significantly increase deficit spending and lead to a smaller, but still considerable, increase in the long-run government contribution. In future years, the government should put more weight on the latter than the former in its approach to making policy.

# Appendix

**Table A.1. Details of consecutive changes incorporated into Figure 2.1**

Change in earnings forecasts	Reduction in discount rate	Removing maintenance grants	Freezing thresholds	Real-terms decrease in fees	2017 increase in fees
Incorporates most recent OBR estimates of short- and long-run earnings growth and small modelling changes	Reduction in discount rate used by government from RPI + 2.2% to RPI + 0.7%	Maintenance grants replaced by maintenance loans as introduced in 2016	Freeze of the repayment threshold at £21,000 and the higher interest rate threshold at £41,000 in nominal terms for five years from 2017	Impact of the decrease in real value of fees since 2012, as fixed in nominal terms	Impact of increase in fees with RPI every year from 2017 onwards

**Figure A.1. Real value of maximum fees by cohort (in 2012–13 prices)**



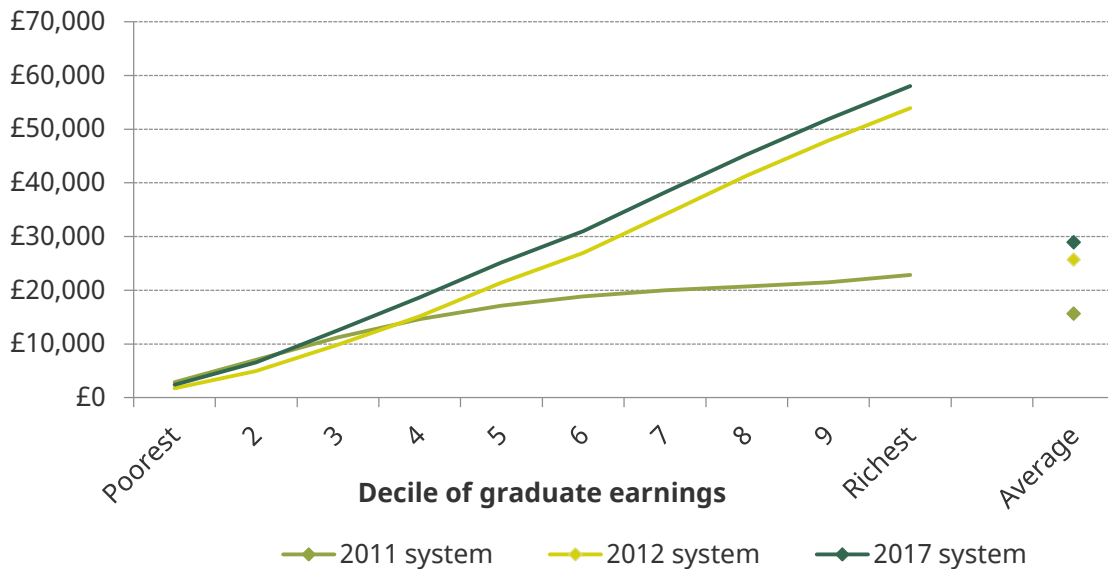
Note: Real value of fees in 2012–13 prices, deflated using CPI. Fees without 2012 reform assume tuition fees would have been updated at RPI after 2012. Actual system assumes all providers will be able to increase their fees by RPI inflation each year. Under the Teaching Excellence Framework, not all providers may actually be able to do so.

**Table A.2. Construction of debt at graduation estimates for 2017 system**

2017 system	Year 1	Year 2	Year 3	Graduation	Graduation (in 2017 prices)
Average fee loan for year	9,228	9,535	9,831		
Average maintenance loan for year	6,480	6,644	6,320		
Average total loan for year	15,708	16,179	16,151		
<b>Total loan without interest</b>	<b>15,708</b>	<b>31,888</b>	<b>48,038</b>	<b>48,038</b>	<b>45,003</b>
<b>Accumulated interest</b>	<b>1,021</b>	<b>3,061</b>	<b>6,178</b>	<b>6,178</b>	<b>5,788</b>
<b>Total loan including interest</b>	<b>16,729</b>	<b>34,949</b>	<b>54,217</b>	<b>54,217</b>	<b>50,791</b>

Note: Average loan amounts given for a three-year degree. Assuming full loan amount is received at the start of each year and interest is charged on a yearly basis at RPI + 3%, using November 2016 OBR predictions of RPI inflation of 3.5% in 2018, 3.2% in 2019 and 3.1% in 2020. The debt at graduation is the debt outstanding three years after starting the degree. The amount outstanding at graduation in 2020 is deflated using the CPI to put this into 2017 prices.

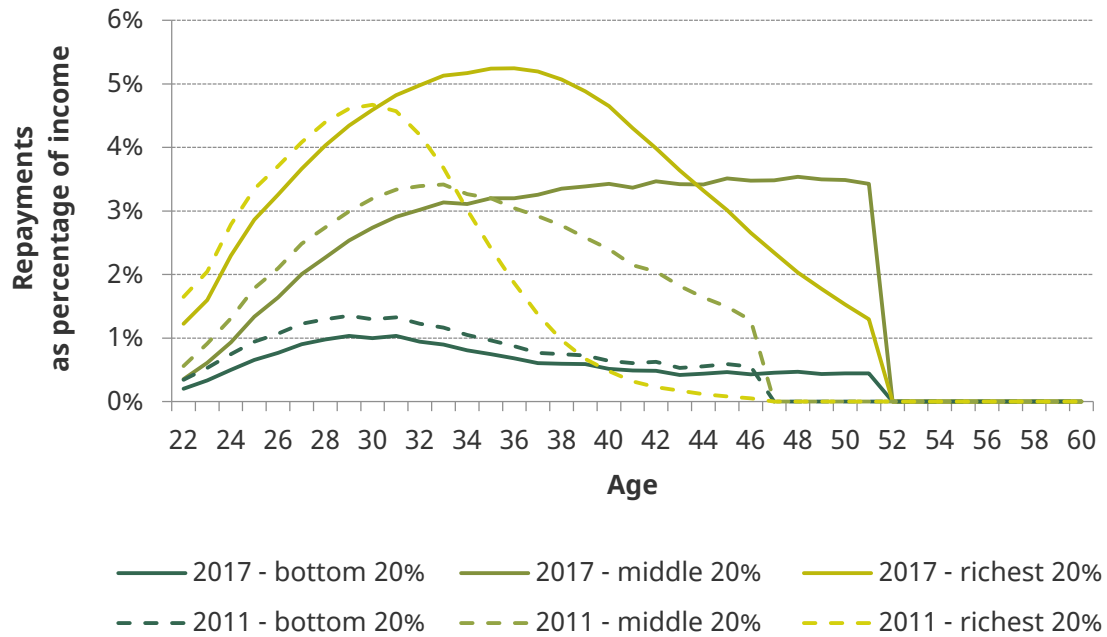
**Figure A.2. Expected average lifetime repayments by decile of graduate lifetime earnings for 2017-18 cohort (2017 prices, using a 2.5% real discount rate)**



Note: Figures in 2017 prices, in net present value terms using a CPI + 2.5% discount rate. These figures apply to young full-time English-domiciled students studying at the 90 largest universities in England starting in 2017-18. Cohort of students is held constant across systems. We assume that all students take out the full loans to which they are entitled, that there is no dropout from university, that graduates repay according to the repayment schedule and that they have low unearned income.

Source: Authors' calculations using IFS's graduate repayments model.

**Figure A.3. Repayments as a percentage of income over the lifetime by graduate lifetime earnings quantile**



Note: Average repayments as a percentage of average income by age for graduates in the top, middle and bottom 20% of the lifetime graduate earnings distribution. Figures in 2017 prices, deflated using CPI inflation, not discounted. These figures apply to young full-time English-domiciled students studying at the 90 largest universities in England starting in 2017-18. Cohort of students is held constant across systems. We assume that all students take out the full loans to which they are entitled, that there is no dropout from university, that graduates repay according to the repayment schedule and that they have low unearned income.

Source: Authors' calculations using IFS's graduate repayments model.



---

## References

Barr, N., Chapman, B., Dearden, L. and Dynarski, S. (2017), 'Getting student financing right in the US: lessons from Australia and England', Centre for Global Higher Education, Working Paper 16, <http://www.researchcghe.org/publications/getting-student-financing-right-in-the-us-lessons-from-australia-and-england/>.

BIS and HEFCE (2016), *Wakeham Review of Stem Degree Provision and Graduate Employability*, <https://www.gov.uk/government/publications/stem-degree-provision-and-graduate-employability-wakeham-review>.

Britton, J., Crawford, C. and Dearden, L. (2015), 'Analysis of the higher education funding reforms announced in Summer Budget 2015', IFS Briefing Note BN174, <https://www.ifs.org.uk/publications/7904>.

Britton, J., Dearden, L., Shephard, N. and Vignoles, A. (2016), 'How English domiciled graduate earnings vary with gender, institution attended, subject and socio-economic background', IFS Working Paper W16/06, <https://www.ifs.org.uk/publications/8233>.

Crawford, C., Crawford, R. and Jin, W. (2014), *Estimating the Public Cost of Student Loans*, IFS Report R94, <https://www.ifs.org.uk/publications/7175>.

Crawford, C. and Jin, W. (2014), *Payback Time? Student Debt and Loan Repayments: What Will the 2012 Reforms Mean for Graduates?*, IFS Report R93, <https://www.ifs.org.uk/publications/7165>.

Cribb, J., Joyce, R. and Norris Keiller, A. (2017), 'The UK labour market: where do we stand now?', IFS Briefing Note BN197, <https://www.ifs.org.uk/publications/9170>.

Department for Business, Innovation and Skills (2010), 'Higher education funding for 2011-12 and beyond', <https://www.gov.uk/government/publications/higher-education-funding-for-2011-12-and-beyond>.

Department for Business, Innovation and Skills (2015), 'Consultation on freezing the student loan repayment threshold', <https://www.gov.uk/government/consultations/freezing-the-student-loan-repayment-threshold>.

Department for Business, Innovation and Skills (2016a), *Higher Education: Success as a Knowledge Economy*, <https://www.gov.uk/government/publications/higher-education-success-as-a-knowledge-economy-white-paper>.

Department for Business, Innovation and Skills (2016b), 'BIS annual report and accounts 2015-2016', <https://www.gov.uk/government/publications/bis-annual-report-and-accounts-2015-to-2016>.

---

Feng, L. and Sass, T. (2015), 'The impact of incentives to recruit and retain teachers in "hard-to-staff" subjects: an analysis of the Florida Critical Teacher Shortage Program', Calder Center, Working Paper 141, <http://www.caldercenter.org/sites/default/files/WP%20141.pdf>.

HM Treasury (2015), *Spending Review and Autumn Statement 2015*, <https://www.gov.uk/government/publications/spending-review-and-autumn-statement-2015-documents>.

Murphy, R., Scott-Clayton, J. and Wyness, G. (2017), 'Lessons from the end of free college in England', *Evidence Speaks* report 2(13), Economic Studies at Brookings, <https://www.brookings.edu/research/lessons-from-the-end-of-free-college-in-england/>.

Office for Budget Responsibility (2015), *Economic and Fiscal Outlook: March 2015*, [http://budgetresponsibility.org.uk/docs/dlm\\_uploads/March2015EFO\\_18-03-webv1.pdf](http://budgetresponsibility.org.uk/docs/dlm_uploads/March2015EFO_18-03-webv1.pdf).

Student Loans Company (2014), 'Student support for higher education in England, academic year 2014/15 (provisional)', <http://www.slc.co.uk/media/5423/slcsfr052014.pdf>.

Wyness, G. (2016), 'Deserving poor: are higher education bursaries going to the right students?', *Education Sciences*, 6(1), 5.