

## Designing Student Loans To Protect Low Earners

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### Executive Summary

This research note builds on evidence provided by the author to the Independent Review of Higher Education Funding and Student Finance<sup>2</sup>, which sets out a strategy to achieve the objectives of quality (high), size (large), and access (wider). This note amplifies one of the options in that evidence – the idea of a repayment extension in the student loan system.<sup>3</sup>

After establishing the groundwork in sections 1 and 2, section 3 explains the details of a loan scheme which simultaneously protects low earners and, through redistribution within the graduate cohort, is largely self-financing.

Building on that design, section 4 sets out a system of higher education finance which is fiscally parsimonious but where only higher earners pay fees. Section 5 discusses the different ways in which the resulting system can be interpreted.<sup>4</sup>

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<sup>1</sup> The ideas expressed in this paper are those of the author and do not necessarily reflect the views of Policy Exchange.

<sup>2</sup> Barr, Nicholas (2010a), *Paying for higher education: What policies, in what order?*, Submission to the Independent Review of Higher Education Funding and Student Finance, [http://econ.lse.ac.uk/staff/nb/Barr\\_HEReview100215.pdf](http://econ.lse.ac.uk/staff/nb/Barr_HEReview100215.pdf)

<sup>3</sup> The idea is old, going back at least to the author's evidence to the Dearing Committee (Barr and Crawford, 1998, *Funding Higher Education in an Age of Expansion*, -Education Economics, Vol. 6, No. 1, pp. 45-70).

<sup>4</sup> Sections 4 and 5 are written to be self-contained, and so can be read on their own.

## 1. The Current System

In round numbers, public spending on higher education is £11,200 per student per year - about twice public spending on children in primary school. On the face of it, graduates who earn enough repay loans which cover about £6,800 per year (roughly £3,200 for tuition fees and £3,600 for maintenance); the remaining £4,400 comes from taxpayers through the Higher Education Funding Council for England (HEFCE) grant to universities.

However, leakages from the loan system (discussed below) are about £1,500 on average, so in reality taxpayers cover around £5,900 of the cost of higher education and the typical graduate around £5,300.

The loan has built-in insurance against inability to repay: the income-contingent repayment formula (9% of a graduate's income above £15,000 per year) protects graduates with low current earnings, and any loan that has not been repaid after 25 years is forgiven, protecting those with low lifetime earnings. Thus from the point of the view of the individual, the system resembles a graduate tax with a cap on individual repayments, and with a maximum repayment duration of 25 years and for most people considerably less.<sup>5</sup>

The present loan system raises two sets of issues:

- **Cost of finance** - the loan charges a zero real rate of interest, hence does not cover the cost of finance. This arrangement is fiscally incontinent (even the highest earners do not repay their loan in full),<sup>6</sup> and deeply regressive.<sup>7</sup> There are two (and only two) ways of improving the performance of the system: by increasing monthly repayments, or by increasing the duration of repayments. Barr and Johnston (2010)<sup>8</sup> model both approaches. While not precluding changes in the repayment formula, this note looks only at the second option.
- **Insurance** - by design, the system protects graduates with low current and/or lifetime earnings. A policy question is who should bear the cost of such non-repayment. At present, the cost falls on taxpayers; this note considers that option and others.

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<sup>5</sup> Barr, Nicholas (2010b), A properly designed 'graduate contribution' could work well for UK students and higher education – even though the original 'graduate tax' proposal is a terrible idea, <http://blogs.lse.ac.uk/politicsandpolicy/?p=3737>

<sup>6</sup> In present value terms, using the government's cost of borrowing, currently a real rate of 2.2%, as the discount rate. This can be thought of as the interest rate the Treasury charges BIS on student loans.

<sup>7</sup> Barr, Nicholas (2010a), *Paying for higher education: What policies, in what order?*, Section 3.3, Submission to the Independent Review of Higher Education Funding and Student Finance, [http://econ.lse.ac.uk/staff/nb/Barr\\_HEReview100215.pdf](http://econ.lse.ac.uk/staff/nb/Barr_HEReview100215.pdf)

<sup>8</sup> Barr, Nicholas and Johnston, Alison, *Interest rate subsidies on student loans: A better class of drain*, 2010, [http://econ.lse.ac.uk/staff/nb/BarrJohnston\\_Interestsubsidies100528.pdf](http://econ.lse.ac.uk/staff/nb/BarrJohnston_Interestsubsidies100528.pdf)

In round numbers, the cost of the interest rate subsidy is about £1,000 per student and the cost of the insurance element for graduates with low earnings about £500 per student.

With a given income-contingent repayment formula, increasing the interest rate has no effect on a graduate's monthly repayments, but increases the duration of repayments. Thus the starting point is an understanding that discussions about the interest rate are discussions about the duration of repayments. There are two ways of increasing duration:

- Polar Case A raises the interest rate to the government's cost of borrowing. In this approach policy makers establish the interest rate (i.e. the government's cost of borrowing), with the duration of the loan following by implication.<sup>9</sup>
- Polar Case B increases the duration of repayments by a fixed amount, say three years. Thus someone who, at a zero real interest rate, finishes repaying at the end of year 12 would continue to make repayments until the end of year 15. In this approach, policy makers set the duration of the loan ( $n+3$ ), which determines the interest rate. Higher earners (who repay more in the extra three years than lower earners) in effect pay a higher interest rate.

The recommendations of this note are a combination of the two approaches. To explain why, it is helpful to discuss the polar cases in more detail.

## 2. Polar Cases

### A. A Higher Interest Rate<sup>10</sup>

#### The Idea

- The current repayment formula and forgiveness after 25 years remain in place.
- The interest rate is set at the government's cost of borrowing.
- Repayments continue until the individual borrower has repaid his/her loan in present value terms, using the government's cost of borrowing as the discount rate, but with the safeguards discussed below.

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<sup>9</sup> I.e. the interest rate is exogenous, the duration of the loan endogenous.

<sup>10</sup> Barr, Nicholas and Johnston, Alison, *Interest rate subsidies on student loans: A better class of drain*, 2010, Options 2 and 4, [http://econ.lse.ac.uk/staff/nb/BarrJohnston Interestsubsidies100528.pdf](http://econ.lse.ac.uk/staff/nb/BarrJohnston%20Interestsubsidies100528.pdf)

## Advantages

- Low earners are entirely unaffected: the higher interest rate has no impact on monthly repayments, protecting people with low monthly earnings; and people with low lifetime earnings continue to be protected by forgiveness after 25 years.
- The higher interest rate significantly improves the performance of the loan scheme.

## Problems

Improvement is limited for two reasons:

- Targeted interest subsidies: with a positive real interest rate, the outstanding balance of low earners will rise and, for someone out of the labour force, will rise fast. In a world of rationality this should not matter, since low earners are fully protected, as just described. But in practice spiralling nominal debt causes sleepless nights and political ructions, making it necessary to have targeted interest subsidies, which mute the improvement in the performance of the system.
- Because of those subsidies nobody, not even the highest earners, repays his or her loan in full. Everyone qualifies for an interest subsidy while a student<sup>11</sup> and virtually all continue to qualify early in their career. Thus even the top quintile of graduate earners do not repay in full.

## B. A Fixed Repayment Extension<sup>12</sup>

### The Idea

- The current repayment formula and forgiveness after 25 years remain in place.
- The interest rate remains a zero real rate.
- When people have finished repaying their loan at a zero real interest rate, they continue to repay for another three years, with two exceptions:
  - For people who take longer than 22 years to repay, the extension is less than three years, e.g. a two year extension for someone who repays after 23 years.
  - No individual overpays by more than a set amount, e.g. 120% of the loan in present value terms.

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<sup>11</sup> Interest subsidies while a person is studying, because they apply at the start of the loan, are very expensive even where a real interest rate applies thereafter.

<sup>12</sup> Barr, Nicholas and Johnston, Alison, *Interest rate subsidies on student loans: A better class of drain*, 2010, Option 3, [http://econ.lse.ac.uk/staff/nb/BarrJohnston Interestsubsidies100528.pdf](http://econ.lse.ac.uk/staff/nb/BarrJohnston%20Interestsubsidies100528.pdf)

With income-contingent repayments, higher earners repay more over the three additional years than lower earners. High earners repay 120% of what they borrowed, lower earners less and the least well-off no more than at present. As noted, by implication higher earners pay a higher interest rate. The arrangement is redistributive.

The choice of repayment extension and cap on overpayment has a crucial role. If the cap is low, there is little additional revenue, hence little improvement in the performance of the loan scheme; and there is little redistribution. If it is too high, the system creates incentives to adverse selection – the best off will opt out. One result is to dilute the redistributive effect; and if the cap is high it breaks the link between original loan and subsequent repayment. A long repayment extension with a high cap (or none) converts the loan into a graduate tax.

### **Advantages**

- Low earners are entirely unaffected: the higher interest rate has no impact on monthly repayments, protecting people with low monthly earnings; and people with low lifetime earnings qualify for forgiveness after 25 years.
- The extra years are at the end of the repayment period, when a person's earnings are typically considerably higher than earlier in his/her career. Thus the extra income to the loan system is substantial. Higher earners pay more in additional repayments than lower earners; and the lowest earners pay no extra because of the 25 year rule.
- The overpayments by high earners cover some or all of the cost of protecting the lowest earners. The system can be designed so that repayments by the graduate cohort as a whole cover 100% of the costs of the loan system in present value terms.
- At an individual level, repayments bear a fixed relation to the amount borrowed, i.e. 120%, with less for lower earners.

### **Problems**

The fact that the repayment extension is a fixed duration creates two sets of problems:

- The system is vulnerable to macroeconomic fluctuations. Since the interest rate underlying the system is a zero real rate, a macroeconomic downturn, by delaying repayments, reduces the performance of the system.
- The estimates in Barr and Johnston<sup>13</sup> for a zero real interest rate plus a repayment extension show the results for current levels of borrowing, but do not extend to higher levels. The reason

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<sup>13</sup> Barr, Nicholas and Johnston, Alison, *Interest rate subsidies on student loans: A better class of drain*, 2010, Tables 1 and 2, [http://econ.lse.ac.uk/staff/nb/BarrJohnston\\_Interestsubsidies100528.pdf](http://econ.lse.ac.uk/staff/nb/BarrJohnston_Interestsubsidies100528.pdf)

is simple: if borrowing is higher, repayment takes longer, so the loss from the interest subsidy is higher. As a result a given repayment extension covers less of the loss than with current levels of borrowing.

Analytically, the root of the problem is that the approach uses a single instrument (the repayment extension) to do two jobs, namely to reflect the cost of finance and to plug leaks in the system that arise from protecting low earners. It is a standard proposition that to achieve two targets it is necessary to have two instruments. This observation leads naturally to:

### 3. The Best of Both Worlds: Combining the Polar Cases

#### The idea

- The current repayment formula and forgiveness after 25 years remain in place.
- The interest rate is set at the government's cost of borrowing, with protection to prevent the real debt of low earners from rising.
- When people have finished repaying their loan at the government's cost of borrowing, they continue to repay for (say) another year, with the two exceptions noted earlier: the 25 year rule applies; and nobody repays more than 120% of the loan.

#### Advantages

To repeat, the only issue is how to analyse increasing the duration of repayments. The arrangement addresses the problems of the polar cases. The system has two instruments – a real interest rate and a repayment extension – to pursue twin targets. As a result:

- The system is robust in the face of macroeconomic turbulence: a macroeconomic downturn will slow a graduate's repayments, but the real interest rate covers the cost of finance by extending the duration of repayments.
- The system can accommodate larger loans, for example to cover an increase in fees. Again, someone with a larger loan repays for longer, but the real interest rate covers the cost of finance.
- Low earners are unaffected by either of the previous two points: the higher interest rate has no impact on monthly repayments, protecting people with low monthly earnings; and people with low lifetime earnings continue to be protected by forgiveness after 25 years.
- The fixed repayment extension can be smaller than in Polar Case B, e.g. one year. The increase in duration to cover the cost of finance means that the repayment extension has a much

smaller task. It no longer has to cover the cost of the interest subsidy for graduates who repay in full, but only to cover non-repayment by low earners.

- The purpose of the repayment extension is much clearer: it represents an insurance premium where – as in any insurance system – the premiums of the ‘lucky’ (in this case higher earners) cover the losses of the ‘unlucky’. If the objective is a loan system which is self-financing, the premium should cover non-repayment by low earners. Alternatively, the premium could cover some of the loss and the taxpayer the rest.<sup>14</sup>
- The fact that the repayment extension is smaller has additional advantages. The problems of adverse selection are largely resolved. Second, it is possible in political terms and desirable in policy terms to add the insurance element, wholly or in part, to upfront payment of fees.<sup>15</sup>
- The repayment extension is progressive. It has no effect on low-earnings graduates, who qualify for forgiveness after 25 years. It affects graduates in the middle quintiles, but they do not earn enough to hit the individual cap. Overpayment of 20% is highly concentrated towards the highest earners, that is, graduates who enjoy a high wage premium. Even the highest earners, however, still pay less than the cost of their higher education, since the overpayment is less than the HEFCE grant.

In sum, a combination of Polar Case A (an interest rate equal to the government’s cost of borrowing) and Polar Case B (a repayment extension) achieves the advantages of both. This is no accident, as explained in Box 1.

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<sup>14</sup> Government estimates in New Zealand during the 1990s suggested that in their then system a cohort risk premium of 2% would repay 100% of the loss on low earners. The system charged 1% above the government’s cost of borrowing; thus the cohort of graduates covered half of the loss, taxpayers the other half.

<sup>15</sup> Under the present arrangements, even with a zero real rate of interest, about 15% of fees are paid upfront, a non-trivial sum, which reduces the size of the SLC loan book and hence reduces the losses to the system due to the interest subsidy.

#### Box 1: Technical note

With a given income-contingent repayment formula, interest rate effects manifest themselves through changes in the duration of repayment. If the contract is specified in terms of an interest rate, repayment duration is the endogenous variable; for a given repayment duration, the interest rate is the endogenous variable, with higher earners *de facto* paying a higher interest rate.

The repayment regimes discussed above have a cost of finance element and an insurance element. They can be characterised as follows:

- Variant of Polar Case A: in Polar Case A the cost of finance was addressed by charging the government's cost of borrowing. To this could be added a cohort risk premium of (say) 2%. In this model the duration of repayment in respect of both elements is endogenous. Other things being equal, this is the least redistributive approach, since everyone except those covered by the 25 year rule exactly repays his or her loan plus cohort risk premium;
- Polar Case B: this model charges a zero real interest rate and covers both the cost of finance and the insurance element through a fixed repayment extension e.g. three years. Thus duration is exogenous, the interest rate endogenous. Other things being equal, this is the most redistributive approach, but with the problems outlined earlier in this note.
- Combination of the polar cases: in this model the cost of finance is covered by charging the government's cost of borrowing and the insurance element by a repayment extension of, say, one year. Thus duration in respect of the cost of finance is endogenous, that in respect of insurance exogenous, Other things being equal, the extent of redistribution lies between those of the previous two cases: since the additional duration in respect of the insurance element is exogenous, better-off graduates pay a higher insurance premium than less well-off graduates.

#### 4. Protecting Low Earners: The Full Monty

The loan system outlined in Section 3 can be extended to provide additional protection for low earners. The resulting arrangement has three elements: sound design of the basic loan, a higher threshold for fees loans, and additional action to widen participation.

**Sounds design of the basic loan:** The basic loan is that in Section 3. The system charges the government's cost of borrowing, with safeguards to prevent the real debt of low earners from rising. The loan incorporates a repayment extension of (say) one year, with safeguards through the 25 year rule, and with the maximum repayment capped at 120% of the individual's loan. This redistribution from



higher to lower-earning graduates makes the loan system largely self-financing, and has all the advantages listed earlier.

As Barr and Johnston<sup>16</sup> show, under the current system, with a zero real interest rate, the bottom quintile of graduate earners almost all qualify for forgiveness under the 25 year rule, and are thus already fully protected against any increase in the interest rate or the fees cap. However, some people in the bottom quintile repay at least part of their fees loan. The next element is designed to provide additional protection.

**A higher repayment threshold for fees loans:** The present system has a formal separation of maintenance loans and fees loans, it being deemed that repayments pay off the maintenance loan first. Neil Shephard's insight builds on this separation by suggesting separate parameters for the two loans.<sup>17</sup> At its simplest, such an arrangement would apply the basic loan just outlined in the following ways:

- Maintenance loans would keep the current repayment threshold, but would apply repayments only on income up to £30,000 per year, with forgiveness after 25 years. The repayment rate could remain at 9%, or be lower (Shephard suggests 6%). Thus the repayment formula for maintenance loans would be X% of income between £15,000 and £30,000 per year;
- Fees loans would have a higher repayment threshold (Shephard's estimates use £30,000 per year), and forgiveness after 25 years. Thus the repayment formula for fees loans would be 9% of income above £30,000 per year; and
- The repayment extension would have separate elements for maintenance loans and fees loans, i.e. there would be mutual insurance by the cohort for its maintenance loans and, separately, for its fees loans.

In principle, the result is a self-contained system of maintenance loans and a parallel self-contained, system of fees loans.<sup>18</sup> This also means:

- Only graduates earning more than £30,000 repay tuition fees. This arrangement makes it explicit that the bottom quintile of graduate earners (and hence everyone below national median earnings) do not pay fees, since they never earn enough to repay their fees loan;

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<sup>16</sup> Barr, Nicholas and Johnston, Alison, *Interest rate subsidies on student loans: A better class of drain*, 2010, [http://econ.lse.ac.uk/staff/nb/BarrJohnston Interestsubsidies100528.pdf](http://econ.lse.ac.uk/staff/nb/BarrJohnston%20Interestsubsidies100528.pdf)

<sup>17</sup> Shephard, Neil, Open letter to Vince Cable and David Willetts, <http://www.oxford-man.ox.ac.uk/~nshephard/slice.pdf>

<sup>18</sup> The two loans are not entirely hermetically sealed. Repayments on income between £15,000 and £30,000 only ever pay off maintenance loans. Repayments on income above £30,000 clear the fees loan but if, when fees have been repaid, outstanding maintenance loan remains then clear the maintenance loan.

- The repayment extension covers some or all of the non-payment of fees by lower earners; and
- A person who lives at home while studying and does not take out a maintenance loan repays fees only if his or her income exceeds £30,000 per year.

**Action to widen participation** is discussed in detail in *Paying for higher education: What policies in what order?*, and can include grants. However, policies should recognise that non-participation is more a 0-18 problem than an 18+ problem, so that their centre of gravity should be to improve attainment in school, raise aspirations and increase knowledge about higher education.

A particular cause of failure to participate, even where someone has good school results, is risk aversion, where someone does not know whether he or she is well-suited to university. One solution is to provide full scholarships to finance a student's first year, on the basis that once a student has successfully completed a year, he or she is likely to be well-informed both about process and outcome, and hence prepared to take out a loan for the rest of the degree.

## 5. Conclusion

A combination of (a) an interest rate equal to the government's cost of borrowing and (b) a short repayment extension with a carefully-chosen individual cap creates a loan scheme which simultaneously protects low earners and, through redistribution within the graduate cohort, is largely self-financing. The design can include separate loans for maintenance and fees in such a way that only higher earners repay fees; and the whole system can, and should, be buttressed by measures to widen participation.

The loan design can legitimately be interpreted in different ways:

- As a loan with mandatory insurance (like a mortgage);
- As a loan system which achieves a 100% repayment rate, hence with little impact on PSBR, making it plausible to increase the size of loans to cover an increase in fees and to expand the system to cover part-time and postgraduate students, and potentially to other students in tertiary education;
- As a redistributive system in which additional repayments by higher earners cover some or all of the non-repayment by lower earners;
- As a form of social insurance with a solidarity element within the graduate cohort (note that pensions redistribute from a person's younger to her older self; loans are exactly the same with redistribution from a person's older to her younger self – thus the social insurance analogy is apt); or
- As a capped graduate tax.

### About the Author

Nicholas Barr is Professor of Public Economics at the London School of Economics and the author of numerous books and articles including *Financing Higher Education: Answers from the UK* (with Iain Crawford), and *Reforming Pensions: Principles and Policy Choices* (with Peter Diamond). He spent two periods at the World Bank working on the design of income transfers in Central and Eastern Europe and Russia and has been a Visiting Scholar at the Fiscal Affairs Department at the International Monetary Fund. Since the late 1980s, he has been active in debates about pension reform and higher education finance, advising a number of governments.

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