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A GRADUATE TAX: WOULD IT WORK?



Executive Summary

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About London Economics

London Economics is one of Europe's leading specialist economics and policy consultancies and has its head office in London. We also have offices in Brussels, Dublin, Cardiff and Budapest, and associated offices in Paris and Valletta.

We advise clients in both the public and private sectors on economic and financial analysis, policy development and evaluation, business strategy, and regulatory and competition policy. Our consultants are highly-qualified economists with experience in applying a wide variety of analytical techniques to assist our work, including cost-benefit analysis, multi-criteria analysis, policy simulation, scenario building, statistical analysis and mathematical modelling. We are also experienced in using a wide range of data collection techniques including literature reviews, survey questionnaires, interviews and focus groups.

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million+ commissioned London Economics to develop the modelling tool which forms the basis of this report in its role as a university think-tank. Any conclusions reached are exclusively those of million+ rather than the 27 universities which affiliate to million+.

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A Graduate Tax: Would it work? is the latest in a series of research reports from the university think-tank million+ in association with London Economics which are intended to ensure that discussions about the future of fees and the funding of universities in England are informed by a robust evidence base.

The merits or otherwise of a graduate tax have been the subject of debate in the UK for over 20 years and there are good reasons why this debate has re-emerged in 2010. Lord Browne, the Chair of the Independent Review of Higher Education Funding and Student Finance, has confirmed that the Review (which will report in the autumn of 2010) will consider all funding options.

The outcome of the May 2010 General Election has meant that two parties, the Conservatives and the Liberal Democrats, have formed a Coalition Government and have to identify a way forward in terms of the future funding of higher education against a background of different manifesto commitments. The new Secretary of State for Business, Innovation and Skills, the Rt Hon Vince Cable MP and the new Minister for Universities and Science, the Rt Hon David Willetts MP have both indicated their interest in a more progressive system (and possibly a graduate tax). For their part, Labour Members of Parliament are re-examining policy options following defeat at the General Election. This follows 13 years of Labour Government during which time significant changes were introduced in terms of fees and funding which provided additional resources for universities in England but also saw different funding systems introduced by the Scottish Parliament and Welsh Assembly.

It is therefore surprising that, with the exception of the National Union of Students, no recent research has examined how a graduate tax might work or how it might impact on students and graduates, universities and the Exchequer compared to the present system of fees and funding. This report seeks to examine the principles and the issues associated with the introduction of a graduate tax. It also provides the economic modelling and analysis required to enable comparisons with different systems to be made. In particular, *A Graduate Tax: Would it work?* provides an assessment of outcomes, not only for universities and the Exchequer but also for graduates based on 'real-life' graduate profiles.

A Graduate Tax: Would it work? shows that:

- > there are significant differences between the current graduate contribution system in England (whereby full-time and part-time students pay fees upfront and full-time students can access state-funded fee loans that are repaid on an income-contingent basis after students leave higher education) and a graduate tax whereby fees are not charged and those who have participated in higher education contribute according to their earnings (once they leave higher education) for a specified or unspecified period of time
- > although a graduate tax has its own complexities, it is likely to be no more or less complicated than the current graduate contribution system; there are theoretical risks around tax avoidance, however, a graduate tax (like the current graduate contribution system) would be collected by HMRC through the PAYE system, and depending on the structure of the graduate tax (in terms of eligibility for repayment), it is no more likely to be the subject of tax non-compliance than income tax collection or the current graduate contribution system
- > a graduate tax would be more progressive than the current graduate contribution system
- > a graduate tax of 1% would deliver the same level of resources as currently available to universities, would make the Exchequer no worse off than under the current system and would have a small negative impact on graduates i.e. the total contribution made by all graduates would increase though some graduates – particularly low earners – would be better off
- > if a graduate tax of 2.4% was levied, universities would be approximately £3.1 billion per annum better off

- > a student support scheme would still be required to ensure that students could access maintenance loans and maintenance grants (according to household income) while they studied at university; without this participation, especially from lower socio-economic groups, could be damaged
- > the transition from a graduate contribution scheme to a graduate tax could be funded in part by amendments to the current student support scheme e.g. by applying an interest rate of 1-2% on maintenance loans or extending the repayment period from 25 years. However, it is likely that this would only limit rather than remove entirely the need to borrow additional funds until a transition to a 'steady-state' income from a graduate tax was complete

Inevitably, the introduction of a graduate tax raises wider issues. As a more progressive tax, higher earners in particular would pay more than under the current graduate contribution system although they (and other students) would no longer be required to pay fees.

Given that a graduate tax would be part of more general Exchequer tax receipts, it is possible for a government to amend the graduate tax rate – thereby increasing the cost of higher education for those who have already completed their studies. There could be uncertainty as to how much of the proceeds collected from a graduate tax would be spent on higher education. For their part, universities might be concerned that there would be more centralised control of funding than currently exists and that the level of funding which they would actually receive might decline. However, as we note, universities in countries which do not have fees successfully bargain with their governments about the level of funding to be spent on higher education.

These wider concerns have to be considered against the pros and cons of the current package of fees and funding and the fact that the Coalition

Government (like its immediate predecessor) has reduced the funds available for teaching and capped student numbers. There is also the prospect of further significant reductions in Government funding for universities and students in the near future and as a result, the prospect of further increases in fees.

Against this background, it is important that the possibilities of a graduate tax are fully considered and compared to the present system and any amendments to it which may be proposed. *A Graduate Tax: Would it work?* and our previous evidence to the Browne Review, *Fair Funding for All*, provide the tools to enable the economic comparisons and social consequences of different funding, contribution and taxation systems to be better understood. We would therefore commend these reports to policy makers, politicians and all those interested in the future of higher education and universities in the UK.



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Chair



Pam Tatlow

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Chief Executive

London Economics were commissioned by million+ to undertake an analysis of the possible introduction of a graduate tax. This would replace the current system of student support and the partial funding of higher education teaching through tuition fees which are paid upfront by students or via the Student Loans Company.

This report considers a number of the primary issues associated with hypothecated taxes and some of the practical difficulties associated with the implementation of a graduate tax in England. Based on previous work¹ undertaken for million+ for the Independent Review of Higher Education Funding and Student Finance (Browne Review), this report extends the detailed economic modelling to consider the aggregated impact on students and graduates, higher education institutions and the Exchequer associated with the introduction of a pure graduate tax. In addition, this report provides an analysis of the distributional impacts associated with a graduate tax illustrating the relative impact of such a tax on graduate contributions in a range of scenarios.

What is a graduate tax?

Interest in a graduate tax has long been part of the discussions about amendments to the funding and student support arrangements that have been introduced into the UK since 1997.

As a result of public statements by Coalition Government Ministers about the potential for graduate taxes to deliver a contribution to the funding of higher education in England, a wider debate has been promoted about the options and merits of introducing such a tax. It remains a matter of conjecture as to whether the Secretary of State for Business, Innovation and Skills¹ stated support for a graduate tax was actually intended or whether he was advocating a more progressive system of graduate contributions than is currently in place in England.

It is therefore vital that there is a clear understanding about what is actually meant by a graduate tax; what are the key differences between a graduate tax and the current system of income contingent graduate contributions; what are the challenges associated with the implementation of a graduate tax and how might institutional and individual behaviour be altered in response to a graduate tax. This section of the report attempts to answer a number of these questions. The next section of the report provides a detailed analysis of:

- > the aggregate resource flows associated with the current system of higher education funding and student support
- > an alternative approach to higher education funding and student support that treats part-time and full-time undergraduate students more equivalently (*Fair Funding for All*), and finally
- > a number of graduate tax alternatives

“It is vital that there is a clear understanding about what is actually meant by a graduate tax”

The report also considers the distributional impacts of a graduate tax versus the current student support system and possible alternatives and relate these to ‘real-life’ graduate profiles.

The difference between a graduate tax and current graduate contributions

In theory, a graduate tax is a tax on income levied on higher education participants in order to compensate the state (at least in part) for the cost of their higher education. In practical terms, under a graduate tax, tuition fees would be removed entirely and universities would receive their teaching funding from the government directly, rather than upfront from students or via the Student Loans Company. In steady state, under a graduate tax the revenue to fund higher education free at the point of entry is generated from previous higher education participants who pay a specified additional tax on earnings in excess of some set amount (£15,000 per annum for instance) for a specified (or unspecified) period of time.

It might be the case that to avoid the graduate tax being too great, students will still receive a loan for maintenance and the repayment terms will stay the same as under the current system. The level of the graduate tax will be dependent on the level of Higher Education Funding Council for England (Hefce) teaching funding made available to universities. This is because following the removal of tuition fees, which would occur under a graduate tax system, universities will experience a decrease in income. This lost income will need to be compensated for, and this might be achieved through graduate tax revenue via an increase in the Hefce teaching grant. Furthermore, the level of the Hefce teaching funding would primarily determine the graduate tax rate imposed on re-payers.

A graduate tax could last indefinitely and payments would be likely to continue for a longer period of time than a graduate contribution.

Unlike the current graduate contribution system, there is no proposed ‘cap’ on how much the graduate will pay back under a graduate tax system. However, first-time students would not be faced with the prospect of paying upfront fees or taking out fee loans.

Currently, graduates participate in a graduate contribution scheme whereby universities in England are paid tuition fees upfront, either directly from the student or via the Student Loans Company (SLC). Full-time students receive a loan for maintenance and a loan for tuition fees, as well as a means tested maintenance grant. The maintenance and fee loans are predominantly non-means tested, ‘interest free’, and are provided by the government through the Student Loans Company. The loan is paid back at the level of 9% of the graduate’s earnings in excess of £15,000, making it income-contingent. It is also progressive in the sense that those earning the least are not permanently liable to repay their loan – currently, any part of the student loan left unpaid 25 years after the repayment start date will be written off. If the cost of the loan is repaid before 25 years, then repayments cease. Under current arrangements, *there is a direct link between the amount borrowed and the amount repaid.*

Under a pure graduate tax, this link is broken. Some individuals in possession of a degree may contribute substantially more than the cost of provision and may continue to contribute for as long as that individual is generating income. As with the current system, a graduate tax is progressive as it is possible that a proportion of students will never contribute an amount equal to the cost of their tuition. In theory, a graduate tax should be more progressive than the current approach to student support as those on high incomes will generally contribute across their entire working life, rather than for a limited proportion of their working life as is currently the case (approximately 8-9 years post-graduation).

¹ *Fair Funding for All – An analysis of the relationship between student support, graduate contribution and the funding of universities in England: scenarios for the future*, million+, May 2010.

Graduate tax versus tuition fees

In economic terms, taxes can produce changes in behaviour and as such may be considered distortionary; however, the question is whether a graduate tax is less distortionary compared to the current system. For instance, the introduction of a graduate tax will undoubtedly have some negative consequences (in the sense that the cost of higher education may increase for future high earners and may deter some people from entering higher education); however, these deterrent effects are focused on particular groups (high earners) and only arise following the decision to complete a degree has been undertaken *and* the positive labour market outcome has been achieved. The imposition of a potentially unlimited tax is likely to increase the cost of higher education to future high earners and as such may reduce the demand for higher education amongst this group.

However, the advantage of a graduate tax – compared to a simple increase in the tuition fee levied – is that a graduate tax is levied based on the outcomes achieved by individuals after university (*ex post*), while an increase in tuition fees is a charge levied before university (*ex ante*). In terms of equity effects (and given individual risk aversion), if prospective students were entirely unaware of their own personal characteristics that could determine the amount they pay towards higher education (such as earnings potential, gender, ethnic origin or family background), they would select a graduate tax rather than an upfront tuition fee, because it is essentially a less risky option. Even if the outcome arises where the graduate pays a significant amount in graduate tax, the fact that this outcome is associated with very high earnings makes it likely that an individual would prefer this outcome to an outcome where less is paid in graduate tax and less is generated in earnings.

Graduate tax versus income tax

There are a number of fundamental differences between income tax and a graduate tax. Income tax is essentially unrelated to the personal characteristics of the individual paying that tax. In other words, subject to certain personal allowances, the rate at which income tax is paid is independent of the characteristics of the tax-payer, and as such, all individuals with the same earnings will pay the same amount of tax irrespective of whether they are graduates or non-graduates. Under a graduate tax, the specific observable characteristic (participation in higher education at undergraduate level for the first time) will result in those individuals paying a larger amount of tax than those individuals not in this category. The most important characteristic of a graduate tax is that it is a tax on a specific individual characteristic (participation in higher education at undergraduate level) rather than a tax on some outcome achieved by an individual (high earnings). Income tax is a tax on an outcome in the labour market, while a graduate tax is a tax on an input: participation in higher education.

Given the strong link between qualifications and earnings, many people advocate that a more straightforward approach to the funding of higher education might be to increase the top rate of income taxation. The rationale for this argument is that many graduates earn a sufficient amount to pay the top rate of income tax; however, the selection of the top rate of income tax to fund higher education is really only a proxy for a graduate tax. A graduate tax may be a more effective targeting mechanism than an increase in general income taxation. This is because a graduate tax is based on an observable and identifiable characteristic (participation in higher education), such that only graduates contribute towards the cost of going to university. If the current rate of income tax was increased (either top rate or standard rate), then both graduates and non-graduates would be paying for the cost of higher education.

Essentially, this means that non-graduates would be further subsidising higher education for graduates despite the fact that non-graduates do not derive the same benefits from higher education as graduates.² An increase in the current rate of income tax is progressive in terms of earnings, but may be relatively regressive in relation to an individual's personal characteristics, such as participation higher education.

Complexity

It is uncertain as to whether the introduction of a graduate tax would be overly complex. The current system for full-time undergraduates consists of upfront tuition fees, which can be paid by the student directly or via a loan from the SLC, alongside grants and income contingent loans for maintenance. Loans taken for tuition fees and maintenance are both repaid at a rate of 9% of earnings in excess of £15,000 per annum. Part-time undergraduates pay fees upfront and are eligible for fee and course grants depending on the intensity of study. There are no maintenance or fee loans available to part-time students.

Under a graduate tax system, different methods of student contribution and repayment would occur simultaneously: graduates would essentially be contributing towards the cost of higher education via the graduate tax, while repaying any maintenance loan which they had taken out at the current 9% rate. This co-existence of different repayment methods that would occur until any maintenance loan was paid off, may add to the complexity of the current system. However, the closer alignment of the treatment of full-time and part-time students would greatly simplify the system.

“A graduate tax may be a more effective targeting mechanism than an increase in general income taxation”

It is important to stress that, as with any other form of taxation, the rate and applicability of the tax may vary by student/graduate cohort, potentially retrospectively. For example, a cohort of students entering university in the 2010/11 academic year may be subject to a 1% tax, while those entering in 2011/12 could be subject to a 1.5% tax. In addition to this, individuals who completed a proportion of an undergraduate degree may have to pay some element of the full graduate tax depending on the proportion of their degree studies completed. Both cohorts may also see changes in the rate of tax levied depending on macroeconomic circumstances as part of the annual budget process.

As suggested in a number of previous pieces of research, increasing the complexity of the student support system leads to mis-information and can potentially deter students from applying and entering higher education. However, this has to be set against the complexities of the current system that provides for upfront and deferred payment of fees, means tested maintenance grants, fee loans and maintenance loans, income contingent repayments and two completely different fee and student support regimes according to whether students study full-time or part-time.

Hypothecated taxes

The final significant characteristic associated with a graduate tax is that, given the fact that it is being collected from graduates specifically to meet the costs of their higher education, the tax may be hypothecated. This means that the revenues obtained from a tax are used for a particular purpose rather than spent on general government expenditure on goods and services.

² Moretti, E. (2003) *Human capital externalities in cities*, in: J. V. Henderson & J. F. Thisse (ed.), *Handbook of Regional and Urban Economics*, edition 1, volume 4, chapter 51, pages 2243-2291 (Elsevier).

A hypothecated tax does not imply that there is some separate means of collection or that the taxation receipts are held separately. In general, an assessment of the revenues generated by the hypothecated tax would be estimated based on the numbers of students entering higher education, completion rates and graduate employment and earnings outcomes with the amount then set aside for the funding of the activity in question. Hypothecated taxes are relatively rare and, as far as we are aware, no other country has implemented a graduate tax. However, there are some examples of hypothecated taxes.

Generally, hypothecated taxes have been designed to fund certain activities that have been undertaken (or may need to be undertaken) as a result of the behaviour of consumers or producers that is currently taking place. Some examples include the funding of road infrastructure in the United States through the US Federal Fuel Excise,³ the funding of the health service in Australia through a tobacco tax; or the funding of recognised Churches in Germany (*Kirchensteuer*).

There are examples of limited hypothecated taxes in the United Kingdom – most obviously the BBC operates through the levy of a TV licence fee.

It is certainly the case that hypothecated taxes can reduce taxpayers' resistance to tax increases because they make the allocation of revenue more transparent,⁴ however, hypothecation of taxes restricts a government's ability to respond to cyclical fluctuations in the economy and can be subject to reputational effects. For example, in the case of cyclical fluctuations, if there is a large budget deficit and more funds are needed for the 'general pot' then revenue cannot be diverted from the hypothecated fund. In the case of reputational effects, it is always possible for

the Exchequer to amend the graduate tax rate retrospectively and this, in itself, may result in lower than expected participation rates.

The tax gap

In theory, a switch from the current graduate contribution system to a graduate tax will change the incentives associated with entering higher education. Under the current system, higher earnings imply that the loan will be repaid more quickly, whereas with a graduate tax, higher earnings mean larger total repayments.⁵ This change will affect the behavioural choices of future higher-earning graduates specifically. In particular, those earning more in the labour market are likely to have the greatest incentive to avoid the graduate tax.

However, it is difficult to assess the extent to which avoidance of this particular tax might occur as, currently, the true extent of tax avoidance in the UK is unclear. The tax gap is generally defined as the difference between the tax that taxpayers should pay and what they actually pay on time. According to the HMRC (2005),⁶ in broad terms the tax gap in the United Kingdom is the difference between the theoretical liabilities arising from a given level of economic activity and the amount of tax actually collected. The theoretical liability is the amount due to the Exchequer assuming all individuals and companies complied with the letter and the spirit of the law. Of this theoretical liability, a considerable amount of tax will come in through voluntary compliance. The difference between the theoretical liability and the amount raised through voluntary compliance is the 'gross tax gap', and provides a measure of the amount of non-compliance taking place. Some of this 'gross tax gap' will be recovered through compliance and enforcement activity. Therefore, the 'net tax gap' is the 'gross tax gap' minus the amount recovered through compliance and enforcement activity.

³ *The Role of Federal Gasoline Excise Taxes in Public Policy*, Robert Pirog. Despite its hypothecated nature, previous governments have implemented tax increases whereby the revenue is allocated to deficit reduction rather than for its hypothecated purpose. In 1993 President Clinton proposed an increase in the gasoline tax which led to 4.3 cents per gallon steered into deficit reduction.

⁴ However, this may only be the case for 'popular services' such as education and health, rather than less popular services such as defence.

⁵ Barr, (February 2010) *Fees and Loans, Lord Dearing Memorial Conference: The Future of Higher Education*.

⁶ HM Revenue and Customs, (April 2005), *Estimation of the tax gap for direct taxes: KAI Analysis 8 – Compliance Strategy*.

⁷ *ibid*

“Under the current system, higher earnings imply that the loan will be repaid more quickly, whereas with a graduate tax, higher earnings mean larger total repayments”

The total net direct tax gap is estimated to be approximately £22 billion in 2005⁷ although by the very nature of the exercise, this estimate is subject to wide margins of error. Of the £22 billion, approximately £10 billion was estimated to be associated with avoidance, while the greatest component of the tax gap was associated with non-compliance (£11.6 billion). Of the £10 billion associated with avoidance activities, approximately £3.9 billion is associated with individual non-payment of income tax, National Insurance contributions and Capital Gains Tax, while £4.4 billion is associated with the non-payment of Corporation Tax, and £1.5 billion is associated with non-payment of Inheritance Tax and stamp duties.

In addition to the information on the direct tax gap, HM Revenue and Customs also undertakes on-going assessments of the indirect tax gap. Information in relation to the tax gap for VAT, illicit cigarettes and tobacco, spirits and fuel indicates that the gap between the theoretical liability and actual tax receipts was in the region of £12.5 billion in 2005/06.

Combining this information with the estimates of the direct net tax gap implies that the total net tax gap in the United Kingdom in 2005/06 was in the region of £34-£36 billion per annum, equivalent to 2-3% of GDP or 7-8% of total tax receipts.

Tax avoidance

In some respects, the avoidance of a graduate tax could be compared to Inheritance Tax or Stamp Duty because the amount to be repaid could be classed as a 'big ticket item'. Non-compliance of inheritance tax and stamp duty is relatively low, standing at approximately 4% of total theoretical liability (compared to the total tax gap of between

7% and 8%). One of the reasons why Inheritance Tax and Stamp Duty are associated with relatively low rates of avoidance is because of the need for third party disclosure (i.e. solicitors are involved in the transaction). This results in the transaction becoming relatively transparent, which drives up the level of compliance.

However, a graduate tax may be much more comparable to general income tax because both would be paid via the PAYE system. Due to the degree of financial transparency, the avoidance of income tax paid through the PAYE system is exceptionally difficult, with non-compliance rates standing at approximately 1% of theoretical liability. Therefore, if properly structured, and if employers are provided with a relatively simple system of assessing whether that tax should be withheld at source and the appropriate rate, a graduate tax should not suffer from higher levels of systematic non-compliance.

There may be some behavioural changes in the labour market in an attempt to avoid the tax. The income and earnings of the self-employed are substantially less visible to tax authorities given the lack of third party reporting and as such the opportunity for under-reporting is significantly greater than for those having their tax withheld at source. The customer group associated with the largest source of non-compliance are the self-employed who account for 31% of non-compliant activity in the UK. Accordingly, increased self-employment may be one particular response to an introduction of a graduate tax.

There are a number of other issues in relation to tax avoidance that would need to be considered, though these are difficult to quantify. In particular, a graduate tax can only be levied on those living and working (and declaring their taxes) in the UK. There is no legal means of collecting a graduate tax from individuals upon leaving the country. This apparent disadvantage has to be set against the fact that the level of current fee loan repayments is exceptionally low amongst non-UK residents in spite of the current contractual arrangements. As a result, it is unlikely that the move to a graduate tax would result in additional non-compliance when compared to the current graduate contribution system. Under a graduate tax system, students from the European Union would be eligible to study in the UK. As with the current system, there would be no effective means of recouping any of the cost associated with the public provision of that education if graduates returned to their home countries or worked and were taxed 'overseas'. If it were the case that these potential students could be charged an upfront fee, then there would be significant incentives for individuals to claim residency abroad in order to exercise the option of prepayment and thus avoid the tax post-graduation. As with the removal of the graduate contribution in Scotland in 2007, and the equal treatment of Scottish and EU students, it would be difficult to see how EU students could be treated differently from UK students. As previously noted, the extent to which these unintended consequences may occur is unclear although they should not be ignored as inconsequential.⁸

Other behavioural issues

Perceptions of cost and postgraduate study

A graduate tax may have some important and positive spill-over effects. By reducing the level of expected debt upon graduation (by approximately £10,000 under 2010/11 fee rates), the introduction of a graduate tax may alter the perception of the costs associated with attending higher education, especially for those from lower socio-economic backgrounds, thereby improving participation rates. In addition, the lower perceived debt upon graduation may reduce the need to find employment immediately and might result in more students undertaking postgraduate courses.

University bargaining power

In practical terms, under a graduate tax approach, universities would receive funding from the government directly, rather than upfront from students and the SLC. Even this simple amendment to the current system of higher education funding would have important behavioural implications for universities in respect of students. In particular, universities currently 'bargain' with students in relation to the tuition fee that may be charged. Under a graduate tax, university funding would be at the discretion of the government-sponsored funding body. Depending on the agreed distribution of funding, the introduction of a graduate tax may have an ambiguous effect on an individual university's level of funding. More importantly, a graduate tax would potentially reduce the degree of bargaining or negotiating power that universities may have going forward i.e. they would need to bargain with an arguably more informed and larger purchaser in the government rather than students. Universities could be placed in a less advantageous position compared to the current position.

“.. a graduate tax may alter the perception of the costs associated with higher education, especially for those from lower socio-economic backgrounds”

In fact, there is nothing in itself unreasonable in requesting the state to acquire goods and services on behalf of its consumers, especially in an area where consumers may suffer a significant disadvantage or informational asymmetry. The introduction of a fee-free option, paid for through a graduate tax, would result in universities in England having the equivalent bargaining position as universities in those jurisdictions where there are currently no tuition fees levied on students. Universities in these countries (for instance, Denmark and Sweden) lobby the state to determine the level of funding and are essentially dependent upon political and economic imperatives for their level of funding. The introduction of a graduate tax would in principle move English higher education institutions to a situation where, rather than being majority reliant on Exchequer funding, they would become entirely reliant on Exchequer funding. On the other hand, there is nothing in the current graduate contribution and funding system in England which protects universities from Exchequer determination of the level of funding or the funded student numbers made available as demonstrated by the £1bn⁹ reduction in higher education funding implemented since 2009 and the 2009 and 2010 government-imposed caps on student numbers.

Charitable contributions

Universities may find that some funding via charitable contributions is crowded-out by the increased contribution of higher earners via the graduate tax. However some caution needs to be exercised as to whether this will have a significant impact bearing in mind the limited scale of alumni donations in the United Kingdom.

Determining eligibility

Several issues need to be considered in respect of who might be *eligible* to pay for a graduate tax. First, all full-time and part-time students should be eligible to pay the graduate tax (irrespective of the intensity of study) since they would benefit from the removal of upfront fees. It should be noted that if part-time students were exempt from the graduate tax, universities would have an incentive to offer their students the option of undertaking an undergraduate degree on a part-time basis (at a high level of study intensity), thereby charging upfront fees and facilitating avoidance of the tax.

Linked to the requirement that all students receiving free tuition would be required to pay the graduate tax, the option of prepayment would need to be removed otherwise those individuals with the greatest current resources – and the least credit constraints – would be able to prepay an agreed amount for their higher education. This would clearly benefit individuals from higher socio-economic groups the most. Allowing prepayment would essentially produce a system that is notionally equivalent to the current approach to higher education funding and student support.

The second eligibility criterion is that only those undertaking (not necessarily completing) first undergraduate degrees should be eligible for the tax i.e. only those individuals whose current undergraduate degrees are in receipt of some Exchequer funding should be eligible for a graduate tax.¹⁰ Although there may be incentives for individuals to claim that their proposed undergraduate qualification is not their first degree in order to avoid the tax, we believe that it should be relatively straightforward to ask individuals seeking to pay upfront to provide evidence of previous qualification attainment.

⁸ Note that under the current system of student support, EU students are eligible to receive repayable fee loans to cover the tuition fees associated with attendance at English universities. We do not see any fundamental reason why there should be a change in the behaviour of EU students following the introduction of a graduate tax, nor do we see any change in the extent of loan non-repayment or equivalently non-compliance with a graduate tax amongst EU students.

⁹ This figure excludes reductions in teaching funding as a result of the withdrawal of teaching funding from 'second-degree' students from 2008 and takes no account of any further reductions in higher education that may be imposed in the Treasury's October 2010 Spending Review.

¹⁰ This correlates with current Government policy whereby there is no public funding for individuals who want to study for an equivalent or lower higher education qualification than that which they have already obtained. These students are currently required to pay fees upfront and in the overwhelming majority of cases are not entitled to student support.

The third point in relation to eligibility is that there would need to be some agreed tapering of the tax to account for *non-completion*. If a graduate tax was not applied to non-completers, then there would be an incentive to 'almost' complete a degree (e.g. to complete 99% of the course) in order to avoid the tax. Tapering is therefore a necessary condition to avoid the considerable behavioural change of this type that might occur, although this would significantly increase the complexity of the tax system when moves are being made to simplify the tax code. However, it is unlikely to be any more complex than applying differential interest rates to the current income-contingent repayment system in order to make the latter more progressive.

The final point in relation to eligibility is that, given the devolved powers in relation to higher education funding and the significant differences in the tuition fees levied and student support on offer across the four Home Nations of the UK, in practical terms, a graduate tax may only apply to students who have graduated from an *English university*. It is uncertain whether there would be any change in institutional behaviour in the sense that Scottish universities (for instance) may have an incentive to offer undergraduate degree programmes to English students through operations based in England thereby allowing these students to effectively avoid the taxation in exchange for the prepayment of tuition fees.

Tax treatment and transition

There is one important difference between the current system of student support and the operation of a graduate tax. Currently, the resource cost of student loans is measured through the Resource Accounting and Budgeting (RAB) charge.

The RAB charge reflects the proportion of the nominal face value of the loan that is not expected to be repaid (either because of the interest rate subsidy or the write-off criteria that are applied). Currently the RAB charge stands at approximately 27%, which implies that the resource cost to the Exchequer associated with £1,000 of student loans stands at £270. If additional Hefce funding replaces tuition fees, tuition fee loans are removed and a levy through a graduate tax is introduced, the initial resource cost to the government associated with the graduate tax is likely to be significantly greater than is currently the case until 'steady state' is achieved. As detailed in the next section, the elimination of tuition fee loans would be expected to net the Exchequer approximately £1 billion per annum. However, we have estimated that the increase in Hefce funding required to make higher education institutions no worse-off, would be in the region of £3 billion per annum.

To fund the additional expenditure in the short run, the Exchequer could access the bond markets and finance the borrowing at the prevailing rate of interest. However, on the assumption that the government may be unwilling to borrow the additional funds in the capital markets during the transition to steady state phase, some amendment to the cost of maintenance loans may need to be undertaken to subsidise the compensatory funding received by institutions following the removal of tuition fees. Previous research undertaken by London Economics for million+ illustrates that there are a number of options relating to the tightening of repayment criteria. This includes the introduction of a positive real rate of interest of a maximum of 2% and the extension of the current 25 year repayment period which would limit the need to borrow funds in the short term.

As with previous research undertaken by London Economics for million+, this report models the resource flows between the Exchequer, students and graduates and higher education institutions under a range of alternative scenarios. In particular, through the use of publicly available information from Hefce, HESA, Labour Force Surveys, and ONS Statistical First Releases, this report assesses the resource flows between the various stakeholders under the current system of fees and student support.

We have also modelled a scenario whereby the treatment of part-time students and full-time students converges such that part-time students become eligible for student support on the same basis as that currently available to full-time students. At the same time, we assume that the repayment terms associated with student loans are tightened with the introduction of a positive real rate of interest and an extension of the period of repayment. This *Fair Funding for All* option was considered in detail in recent London Economics work undertaken for million+¹¹. Although the methodological approach remains unchanged, there have been a number of amendments to the model to reflect the availability of new and updated data, as well as the various changes to headline costs associated with higher education (for instance a full-time undergraduate fee of £3,290 in 2010/11 compared to a fee of £3,225 in 2009/10). For a detailed illustration of the modelling approach adopted, we would refer the reader to the previous research work undertaken.

As a result, it is very important to note that the findings presented here will not exactly replicate previous work. In summary the model has been updated in the following ways:

- > Updated the value of full-time and part-time fees

- > Updated part-time student support parameters to reflect the slightly increased generosity resulting from increased fees
- > Updated the model to reflect the lower proportion of full-time students in receipt of either full or partial maintenance grants
- > Updated lifetime age-earnings profiles using the LFS to reflect wage inflation and more recent labour market outcomes
- > Updated the number of students currently undertaking undergraduate degrees for the first time
- > Updated the assumptions underpinning the model in relation to student study intensity for part-time students and associated degree durations

In addition to the presentation of the previous scenarios, London Economics have also modelled a number of scenarios in relation to a pure graduate tax. We compare the outcomes of the various stakeholders under each of the options and describe these in more detail in the next section.

Finally, although we suggest that a graduate tax would need to be implemented irrespective of the intensity of study, to ensure comparability in the analysis undertaken, we have modelled the graduate tax based on the assumption that only students studying at intensities in excess of 30% are liable. The inclusion of all first time undergraduate students in the analysis will clearly increase both the expenditure and incomes associated with the provision of higher education by the state. Given the way in which we have structured the modelling, we do not believe that there will be a significant change in the relative effect on the Exchequer compared to the current system of higher education funding and student support.

¹¹ *Fair Funding for All – An analysis of the relationship between student support, graduate contribution and the funding of universities in England: scenarios for the future, million+, May 2010.*

Methodological approach and amendments

continued

Full-time and Mixed Mode institutions

As in the previous work undertaken by London Economics for million+, to reflect the diversity of the higher education sector, we have attempted to illustrate the potential effect of changes in student finance arrangements on different types of institution. As such we have split higher education institutions into two separate groups reflecting the profile of students undertaking undergraduate degrees attending those institutions. In very general terms, *Mixed Mode* institutions rely to a greater extent on part-time students compared to *Full-time* institutions, with at least 17% of Mixed Mode students being enrolled on a part-time basis compared to 13% for Full-time Institutions. We provide full details of the allocation of institutions to groups in Annex 1.¹²

Based on this assumption and information from HESA, we have estimated that there are 308,725 undergraduate students entering higher education in 2010/11 of whom 173,615 are full-time undergraduates entering Full-time institutions and 135,111 are full-time students entering Mixed Mode institutions. In addition, there are 52,400 part-time students¹³ split between Full-time institutions (5,627) and Mixed Mode institutions (46,773).

What might a graduate tax look like

Fees: Although we previously suggested that all first time undergraduates would be eligible for a graduate tax, for modelling purposes, we have assumed that instead of tuition fees, any individual undertaking an undergraduate degree for the first time – either on a full-time or a part-time basis at an intensity of study greater than 30% FTE – would pay no tuition fee. We have assumed those students who no longer pay fees are eligible to pay a graduate tax. To avoid the manipulation of the system and the avoidance

of future tax obligations, we have also assumed that a credit based system operates in some format such that individuals who complete a proportion of an undergraduate degree programme are eligible for a graduate tax in some proportion to the number of credits undertaken. For UK-domiciled students (home students), we have also assumed that there is no way of making an upfront payment for fees. Finally, to ensure comparability with previous work undertaken, we have assumed that only higher education degrees currently associated with Hefce financing are included in the analysis.

Hefce funding: Clearly the removal of tuition fee income will make higher education institutions worse off. Assuming that the current maximum tuition fee stands at £3,290 and the assumed fee income is £1,310, the abolition of tuition fees will reduce university income by approximately £1,980 per student per annum (although universities would no longer be eligible to fund student bursaries and as such would save £329 per annum for those students eligible for a full maintenance grant). Therefore, we have assumed that the Hefce base price teaching grant is increased by £2,290 under Graduate Tax Scenario 1 and by £4,580 under Graduate Tax Scenario 2.

Currently the Hefce base-price teaching funding allocation stands at approximately £3,951 per student per annum (which is equivalent to £4,096 per full-time student per annum and £1,387 per part-time student per annum once subject-weighting and London uplift are incorporated into the model). Under Graduate Tax Scenario 1, the increase in the Hefce base-price teaching funding allocation by £2,290 to £6,241 results in an average Hefce resource allocation of £7,230 per full-time student per annum and £3,281 per part-time student per annum.

Meanwhile, under Graduate Tax Scenario 2, the increase in the Hefce base-price teaching funding allocation by £4,580 to £8,531 results in an average Hefce resource allocation of £10,364 per full-time student per annum and £4,725 per part-time student per annum. Therefore, even under Graduate Tax Scenario 1, universities would be in receipt of additional Hefce funding that *more than compensates* them for the loss in tuition fee income.

Grants: In terms of grants, we have assumed that the current maintenance grant paid to full-time students remains unchanged, both in terms of the current level and the means testing elements. However, we have assumed that under a graduate tax, the part-time course grant is removed in full. We have assumed that the statutory bursary equivalent to 10% of the maximum fee charged and currently paid to those students in receipt of the maximum maintenance grant is also removed.

Loans: As a result of the removal of tuition fees for all students, we have assumed that the non-means tested tuition fee loan available to full-time students is withdrawn. We have also assumed that the maintenance loans available to full-time students remain unchanged in every way. In particular, we have assumed that the method of repayment remains unchanged (9% contribution on incomes in excess of £15,000 for 25 years assuming a zero percent real rate of interest). We have also assumed that some pro-rata maintenance loans are introduced for part-time students depending on the intensity of the part-time study. In particular, we have assumed that students studying part-time at between 30-50% FTE receive a means-tested maintenance loan of £1,000 per annum, increasing to £2,000 for individuals studying 50-59% FTE, £2,800 for individuals studying 60-74% FTE and £3,200 for those studying at more than 75% FTE.

“.. there will not be a significant change in the relative effect on the Exchequer compared to the current system”

Tax Structure: In terms of the structure of the graduate tax, we have assumed that there is a fixed and flat rate tax under each of the scenarios described above. Note that we have assumed that the level of income over which the graduate tax may be levied stands at £15,000 per annum and we have assumed that the tax is levied for a maximum of 40 years post-graduation. The model can be easily extended to illustrate alternative tax rates, multiple tax rates, different thresholds and durations.

To understand the impact of the removal of tuition fees and the introduction of a graduate tax, we have modelled the resource flows between the various stakeholders, and estimated the appropriate graduate tax rates to ensure that the Exchequer is essentially no worse off compared to the current system of higher education funding and student support. The estimated graduate tax rate under Scenario 1 stands at 1.0% compared to a rate of 2.4% under Scenario 2.

Comparing the current system with a graduate tax

We have provided the detailed impact of the removal of tuition fees for full and part-time students alongside the increase in Hefce funding and introduction of the graduate tax in Table 1. The analysis indicates that under the current system of higher education funding, the total Exchequer commitment to the higher education sector stands at £6.665 billion per cohort of students, of which approximately 55% relates to the Hefce Teaching Grant for full-time students and 5% relates to the Hefce Teaching Grant for part-time students. Grants to students account for 15% of Exchequer expenditure with 24% of expenditure used to subsidise student fee and maintenance loans.

¹² It is important to note that the findings of the model are not particularly sensitive to assumptions in relation to the allocation of institutions at the margin. In other words, there may be a small number of institutions that are designated as Full-time institutions but might be considered Mixed Mode institutions and vice versa. The re-allocation of a small number of these institutions does not change the overall conclusions of the analysis.

¹³ The base model includes students undertaking a part-time first undergraduate degree, with the assumption that all these students are undertaking study at a rate above 30% FTE. This includes a total of 52,400 part-time students (around 20% of all part-time students).

Table 1: Exchequer Costs by higher education item

Item	2010/11 system	Fair Funding for All	Graduate tax Scenario 1	Graduate tax Scenario 2
Hefce funding per student p.a. (Base price)	£3,951	£3,951	£6,241	£8,531
Tuition Fees – assumed fee income	£1,980	£1,980	£0	£0
Hefce Teaching Grant (FT)	£3.688 bn.	£3.688 bn.	£6.508 bn.	£9.329 bn.
Hefce Teaching Grant (PT)	£0.322 bn.	£0.310 bn.	£0.574 bn.	£0.827 bn.
Grants to full-time students	£0.989 bn.	£0.989 bn.	£0.989 bn.	£0.989 bn.
Loans to full-time students	£1.612 bn.	£0.522 bn.	£0.651 bn.	£0.651 bn.
Grants to part-time students	£0.055 bn.	£0.123 bn.	£0.079 bn.	£0.079 bn.
Total Expenditure	£6.665 bn.	£5.632 bn.	£8.801 bn.	£11.875 bn.
Graduate tax receipts (1%)			(£2.140 bn.)	
Graduate tax receipts (2.4%)				(£5.221 bn.)
Net Expenditure	£6.665 bn.	£5.632 bn.	£6.661 bn.	£6.654 bn.
Difference from current system	-	+£1.033 bn.	+£0.003 bn.	+£0.011 bn.

Source: London Economics' student finance model.

Under Scenario 1, the total expenditure of the Exchequer stands at £8.801 billion. However, the graduate tax (at 1%) generates an income of £2.140 billion in present value terms. Combining this income and expenditure, the Exchequer is approximately £3 million per annum better off than under the current system of student support. Under this scenario, the proportion of gross expenditure associated with the Hefce teaching grant for full-time and part-time students increases to 74% and 6% respectively (compared to 55% and 5% respectively under the baseline scenario).

Grants to students remain unchanged. However the removal of tuition fees and the associated removal of tuition fee loans, results in significant Exchequer savings. In particular, the Exchequer now contributes approximately £0.65 billion per annum towards student loans (compared to £1.61 billion under current arrangements). Under this scenario, student loans account for 7% of government expenditure compared to the 24% that is currently the case.

In Figure 1, we have presented the resource flows for all the various stakeholders. The analysis illustrates that students currently

contribute approximately £382 million per annum towards the costs of their studies, compared to the Exchequer contribution of £6.665 billion per annum. The estimate of the level of student contribution is approximately £400 million per annum greater than in the research undertaken by London Economics for million+ in 2009, primarily as a result of the reduced proportion of students eligible for both full and partial grants. The baseline model also illustrates that institutions are in receipt of approximately £7 billion per annum in funding from the Exchequer and student tuition fees.

In Figure 2, we have presented the resource flows under the *Fair Funding for All* option, where part-time students are provided with equivalent student support in the form of loans and grants. However, a positive real interest rate of 2% is imposed on loans, as well as the loan write-off period being extended to 35 years from the current 25 years. Under this scenario, the Exchequer is approximately £1.033 billion better off than is currently the case, while graduates are approximately £1.131 billion worse off (as a result of the tighter loan criteria). Higher education institutions are approximately £100 million per annum better off.

“Under a 1% graduate tax.. the impact on all stakeholder groups is relatively unchanged”

Figure 1: Baseline resource flows

From	To				
	Students/Graduates	Full time Inst.	MM Inst.	Exchequer	Total
Students/Graduates	NA	£1,632m	£1,406m	(£2,655m)	£382m
FT Institutions	(£1,632m)	NA	NA	(£2,108m)	(£3,740m)
MM Institutions	(£1,406m)	NA	NA	(£1,901m)	(£3,307m)
Exchequer	£2,655m	£2,108m	£1,901m	NA	£6,665m
Total	(£382m)	£3,740m	£3,307m	(£6,665m)	£0m
Difference from 2010/11	£0m	£0m	£0m	£0m	

Source: London Economics' student finance model.

Figure 2: Fair Funding for All resource flows with amended student loan terms

From	To				
	Students/Graduates	Full time Inst.	MM Inst.	Exchequer	Total
Students/Graduates	NA	£1,644m	£1,504m	(£1,634m)	£1,513m
FT Institutions	(£1,644m)	NA	NA	(£2,107m)	(£3,751m)
MM Institutions	(£1,504m)	NA	NA	(£1,891m)	(£3,394m)
Exchequer	£1,634m	£2,107m	£1,891m	NA	£5,632m
Total	(£1,513m)	£3,751m	£3,394m	(£5,632m)	£0m
Difference from 2009/10	(£1,131m)	£11m	£88m	£1,033m	

Source: London Economics' student finance model.

Under Graduate Tax Scenario 1, and in part because we have estimated a graduate tax rate to ensure revenue neutrality, the impact on all stakeholder groups is relatively unchanged. Under this scenario, graduates are approximately £39 million worse off per annum than under the current system. In particular, rather than being in receipt of Exchequer support in the form of loans and grants to the tune of £2.655 billion per annum, students now receive approximately £1.65 billion in the form of maintenance grants and loans but as graduates contribute approximately £2.140 billion through the

graduate tax resulting in a net contribution of approximately £421 million to the Exchequer. However, counteracting this, students now make no contribution to higher education institutions rather than the £3.144 billion per annum under the baseline scenario. The removal of tuition fees, combined with the removal of bursaries and augmented Hefce Teaching funding, results in higher education institutions being approximately £54 million per annum better off than under the current system. These resource flows are presented in Figure 3.

Methodological approach and amendments

continued

Figure 3: Resource flows under increased Hefce base case funding of £2,290 per student p.a. (Scenario 1)

From	To				
	Students/ Graduates	Full time Inst.	MM Inst.	Exchequer	Total
Students/Graduates	NA	£0m	£0m	£421m	£421m
FT Institutions	£0m	NA	NA	(£3,722m)	(£3,722m)
MM Institutions	£0m	NA	NA	(£3,361m)	(£3,361m)
Exchequer	(£421m)	£3,722m	£3,361m	NA	£6,661m
Total	(£421m)	£3,722m	£3,361m	(£6,661m)	£0m
Difference from 2010/11	(£39m)	(£18m)	£54m	£3m	

Source: London Economics' student finance model.

Figure 4: Resource flows under increased Hefce base case funding of £4,580 per student p.a. (Scenario 2)

From	To				
	Students/ Graduates	Full time Inst.	MM Inst.	Exchequer	Total
Students/Graduates	NA	£0m	£0m	£3,502m	£3,502m
FT Institutions	£0m	NA	NA	(£5,335m)	(£5,335m)
MM Institutions	£0m	NA	NA	(£4,821m)	(£4,821m)
Exchequer	(£3,502m)	£5,335m	£4,821m	NA	£6,654m
Total	(£3,502m)	£5,335m	£4,821m	(£6,654m)	£0m
Difference from 2010/11	(£3,120m)	£1,595m	£1,515m	£11m	

Source: London Economics' student finance model.

Finally in this section, we have assessed the resource flows under the scenario where higher education institutions receive an additional £4,580 base funding per student per annum. Clearly, the impact of this substantial increase in Hefce Teaching funding is to increase the resources made available to institutions. Higher Education institutions would be approximately £3.1 billion per annum better off, with graduates paying for this additional resource through a graduate tax of 2.4%. The Exchequer would be essentially unaffected in resource terms under this option. This is presented in Figure 4.

'Real Life' graduate profiles

To extend the analysis and make it more real-life, we have generated a number of graduate profiles that might better reflect real world economic and personal circumstances rather than a position on a particular income decile. We have generated five different graduate profiles called *Public Sector Professional*, *Working Parent*, *Late Earner*, *Lifelong Learner*, and *High Flyer*. A summary of their graduate careers is presented in Box 1.

Box 1: 'Real Life' graduate profiles

Public Sector Professional

Gender: Male
 Mode of attendance: Full-time Student
 Age of graduation: 21
 Career:
 1. Part-time occasional employment while undertaking postgraduate qualification
 2. Starts full-time employment on £20,000 as teacher (5th decile) aged 23
 3. Works continuously in public sector till the age of 64 (moving to 6th decile between ages 36 and 45 and slipping down 1 decile every 10 years thereafter)
 4. Takes retirement at 64

Working Parent

Gender: Female
 Mode of attendance: Full-time Student
 Age of graduation: 21
 Career:
 1. Starts employment on 6th decile (and works between 21 and 33)
 2. Economically inactive between 34 and 39 (childcare responsibilities)
 3. Part-time employee between age of 40 and 48 (1st decile)
 4. Full-time employee between age of 49 and 59 (3rd decile)
 5. Part-time employee between age of 60 and 64 (2nd decile)

Late Earner

Gender: Male
 Mode of attendance: Full-time Student
 Age of graduation: 21
 Career:
 1. In and out of low wage employment/travel until 26 (1st and 2nd deciles)
 2. Starts continuous employment on 4th decile aged 27
 3. 1 year spell of unemployment aged 34
 4. Returns to labour market age 35 (3rd decile)
 5. 1 year spell of unemployment aged 39
 6. Returns to labour market age 40 (5th decile)
 7. 1 year spell of unemployment aged 47
 8. Returns to labour market age 48 (5th decile)
 9. Retires at 65

Lifelong Learner

Gender: Female
 Mode of attendance: Part-time Student
 Age of graduation: 37
 Career:
 1. Employed full-time pre degree up to age 31 earning £23,000 per annum
 2. Employed part-time earning £23,500 pa pro rata (3rd decile), 6 year degree
 3. Returns to work full-time on £27,000 (6th decile)
 4. Works continuously till the age of 64 (moving up to 8th decile)
 5. Retires age 64

High Flyer

Gender: Male
 Mode of attendance: Full-time Student
 Age of graduation: 21
 Career:
 1. Employed full-time in financial services on 9th decile
 2. Retires aged 64

Table 2: Graduate contribution outcomes under current student support arrangements

Baseline Scenario	Public Sector Professional	Working Parent	Late Earner	Lifelong Learner	High Flyer
Debt upon graduation	£21,206	£21,206	£21,206	N/A	£21,206
Outstanding debt at point of write-off	0	£1,928	0	N/A	0
Age when/if contribution is paid off	34	Never	37	N/A	29
RAB charge	(18.3%)	(25.0%)	(22.9%)	N/A	(12.1%)
NPV of loan repayments	16,421	14,740	15,455	N/A	16,565
NPV of Graduate Tax	0	0	0	0	0

Table 3: Graduate contribution outcomes under Fair Funding for All option

Fair Funding for All Scenario	Public Sector Professional	Working Parent	Late Earner	Lifelong Learner	High Flyer
Debt upon graduation	21,206	21,206	21,206	16,961	21,206
Outstanding debt at point of write-off	0	0	0	0	0
Age when/if contribution is paid off	35	53	40	56	30
RAB charge	(1.8%)	(2.4%)	(2.3%)	(1.5%)	(1.1%)
NPV of loan repayments	19,932	19,534	19,815	14,311	18,895
NPV of Graduate Tax	0	0	0	0	0
Difference from current baseline	+3,510	+4,794	+4,360	-	+2,330

Table 4: Graduate contribution outcomes increased Hefce base case funding of £2,290 per student p.a.

Increased Hefce funding and 1% GT Scenario	Public Sector Professional	Working Parent	Late Earner	Lifelong Learner	High Flyer
Debt upon graduation	11,336	11,336	11,336	8,144	11,336
Outstanding debt at point of write-off	0	0	0	0	0
Age when/if contribution is paid off	31	30	33	49	27
RAB charge	(14.5%)	(13.7%)	(19.0%)	(11.1%)	(9.1%)
NPV of loan repayments	9,214	9,044	8,705	5,485	8,641
NPV of Graduate Tax	10,720	3,071	8,454	3,781	24,153
Difference from current baseline	+3,512	-2,625	+1,704	-	+16,228

In Table 2, we present the likely impact on the real life students under the current system. All the full-time students graduate with a debt of £21,206. In general, students (with the exception of the working parent who never repays and has an outstanding debt at the time of write off of almost £2,000) repay their loan obligation between the age of 29 in the case of the high flyer and 37 in the case of the late earner. The public sector professional repays by the age of 34. Under the current system, the RAB charge associated with the loans (reflecting the extent of the Exchequer loan subsidy), stands at between 12.1% and 25%.

We have presented the equivalent information under the *Fair Funding for All* scenario in Table 3. Under this option, the debt upon graduation is generally the same. However, the lifelong learner is now eligible for fee and maintenance loans and graduates with loans of approximately £17,000. The imposition of a positive real rate of interest, and the extension of the period of repayment, dramatically reduces the extent of the Exchequer subsidy. This is reflected in the fact that the RAB charge associated with loans has been dramatically lowered – now standing at between 1.1% and 2.4%. Graduates repay the loans for considerably longer – especially in the case of the working parent. Most interestingly, the net present values (NPV)¹⁴ of the loan repayments under this option are significantly higher than under the baseline scenario. The public sector professional pays approximately £3,510 more for their education than under the baseline scenario, while the late earner pays an additional £4,360. The high flyer contributes an additional £2,330, while the working parent is hit the hardest, now contributing almost £4,800 more for their education than under the baseline scenario.

In Table 4, we have presented the distributional effects of a graduate tax of 1% on the different graduate profiles. The analysis illustrates that the volume of debt that students graduate with is approximately £10,000 less than under the current system following the abolition of fees and associated tuition fee loans. As expected, the RAB charge is slightly lower than under the baseline scenario and it is also the case that these (smaller) loans are repaid in full to the Exchequer more quickly. However, the imposition of a graduate tax has significant distributional effects. Compared to the current system, the combined contribution of the graduate tax and loan repayments may significantly exceed current contributions. In particular the high flyer is estimated to contribute approximately £32,700 in total compared to their current contribution of £16,500, while the public sector professional and late earner contribute approximately £3,500 and £1,700 more over their working life than is currently the case respectively. The working parent pays less under a graduate tax than is currently the case by approximately £2,600 over their working life.

In Table 5 (overleaf) we have replicated the analysis presented in Table 4 in relation to the larger 2.4% graduate tax and augmented Hefce funding. The information in terms of the maintenance loans is unchanged. However, the higher graduate tax results in higher tax payments irrespective of the characteristics of the student. The high flyer pays approximately £51,000 more under this option, while the public sector professional pays approximately £18,900 more than is currently the case. The late earner pays approximately £13,900 more than the current baseline student contribution scheme, while the working parent pays £1,796 more than is currently the case.

¹⁴ The net present value is a means of converting a stream of income payments in the future into today's money terms. In simple terms, £1,000 in 10 years time is not worth £1,000 today given the fact that there is inflation, which erodes the purchasing power of money in the future. To convert future income and expenditure into a present value, we adjust these future payments using a (compound) discount rate (determined by HM Treasury in the Green Book), which currently stands at 3.5%.

Methodological approach and amendments

continued

Table 5: Graduate contribution outcomes increased Hefce base case funding of £4,580 per student p.a.

Increased Hefce funding and 2.4% GT Scenario	Public Sector Professional	Working Parent	Late Earner	Lifelong Learner	High Flyer
Debt upon graduation	11,336	11,336	11,336	8,144	11,336
Outstanding debt at point of write-off	0	0	0	0	0
Age when/if contribution is paid off	31	30	33	49	27
RAB charge	(14.5%)	(13.7%)	(19.0%)	(11.1%)	(9.1%)
NPV of loan repayments	9,214	9,044	8,705	5,485	8,641
NPV of Graduate Tax	26,157	7,493	20,627	9,225	58,933
Difference from current baseline	+18,949	+1,796	+13,877	-	+51,008

Source: London Economics

Real Life repayment profiles

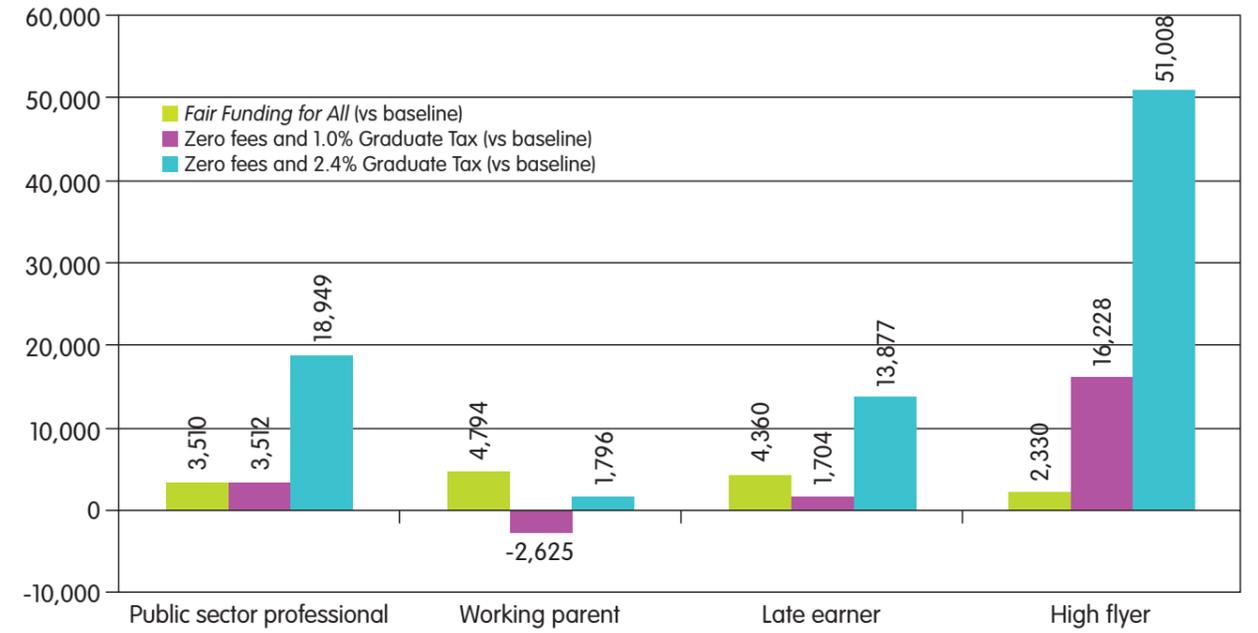
In addition to the analysis presented above, based on information from the Labour Force Survey, we have attempted to illustrate the actual annual repayments under current student support arrangements, as well as under the scenario where tuition fees and associated loans are removed and replaced by a 1% graduate tax.

In Figure 6 the analysis illustrates that for a public sector professional, between the ages of 22 and 29, the *loan* repayments under either the current system of student support or the alternative graduate tax system are identical. This is because under either scenario, income contingent *maintenance* loans are repayable. Under the current system, between the ages of 31 and 34, the fee loan is repaid at a rate of approximately £2,000 per annum. In contrast, instead of making tuition fee loan repayments between the ages of 31 and 34, under the graduate tax approach a tax is levied on earnings equivalent to approximately £250 per annum over the next 30 years. On average, under the graduate tax approach, between the ages of 22 and 30, the public sector professional pays approximately

£21 more per month than under the current system and £85 a month less between the age of 31 and 34; while paying approximately £21 per month more (again) between the ages of 35 and 64. As described in the previous section, the increased contribution by the public sector professional amounts to approximately £3,500 in today's money terms.

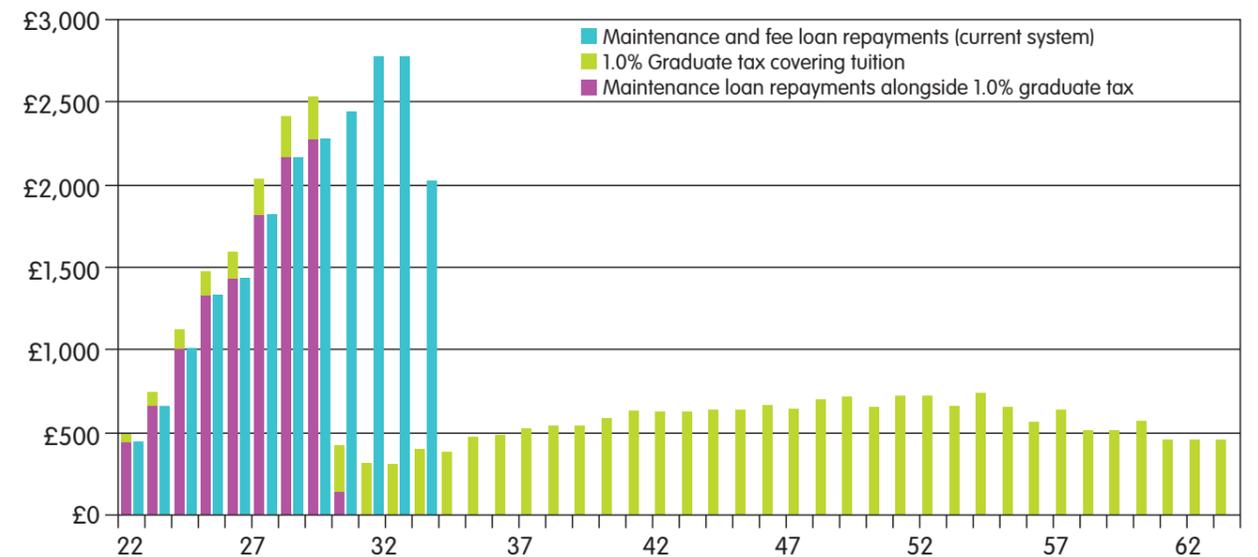
In Figure 7 (overleaf) we have provided the equivalent analysis for the working parent. The repayment profile is very similar to the public sector professional up to the age of 34, primarily as a result of the fact that the period of absence from the labour market as a result of childcare responsibilities has yet to occur. For this graduate profile, the level of repayments undertaken is significantly less under a graduate tax approach than under the current system of student support, as the repayment of the fee loan between the aged of 28 and 32 has been replaced by a much less onerous graduate tax. The second point to note is that although some additional repayment of the fee loan is made upon the parents return to work, this is relatively minor, although it is also the case that the graduate tax is relatively small given the low earnings of the working parent.

Figure 5: Distributional impacts by student profile compared to baseline case



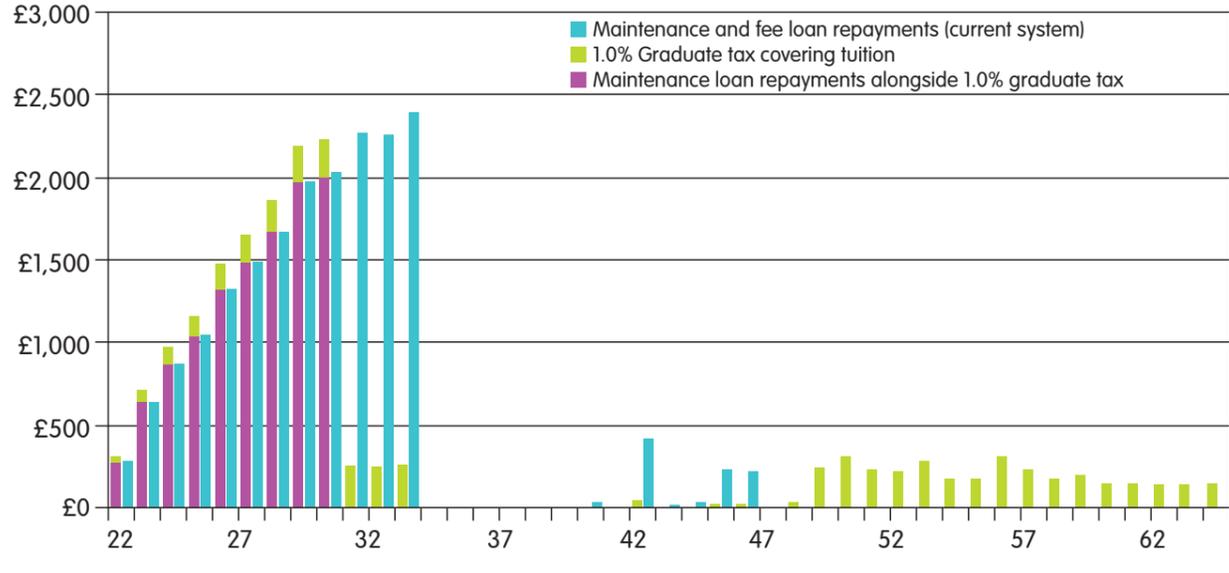
Source: London Economics' student finance model.

Figure 6: Annual repayment profile – public sector professional



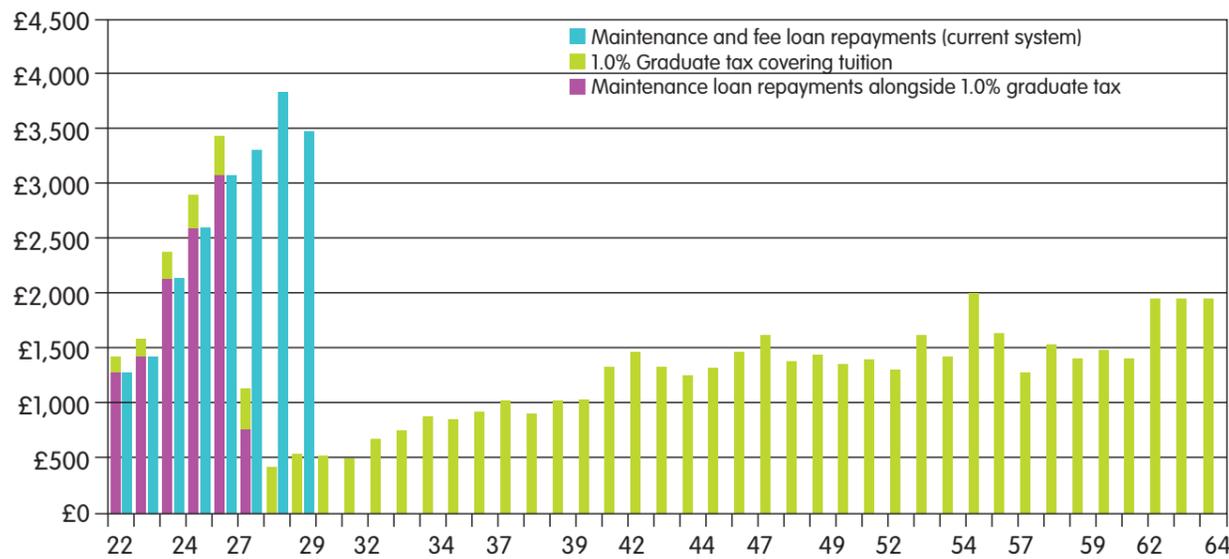
Source: London Economics

Figure 7: Annual repayment profile – working parent



Source: London Economics

Figure 8: Annual repayment profile – high flyer



Source: London Economics

“.. the 1% graduate tax is highly progressive with men in the bottom income decile contributing approximately £3,249 less than under the current system”

Under the graduate tax approach, between the age of 22 and 30, the working parent pays approximately £6 per month more in total than under the current system and approximately £96 a month less between the ages of 31 and 34, while paying approximately £6 per month more (again) between the ages of 35 and 64. As described in the previous section, the reduced contribution by the working parent amounts to approximately £2,600 in today’s money terms.

Finally in this section, we provide an illustration of the annual repayments under the different student support options for the high flyer (Figure 8).

As with the outcomes in relation to the public sector professional and late earner (presented in Annex 1), the analysis in relation to the high flyer indicates that the average level of repayment for the high flyer is approximately £47 per month more between the ages of 22 and 27 and approximately £144 per month less between the ages of 28 and 30, reverting to an additional contribution of approximately £47 per month up to the age of 60. As described in the previous section, for the high flyer, the total increase in repayments under the graduate tax approach stands at £16,288.

Distributional Effects – Income Deciles

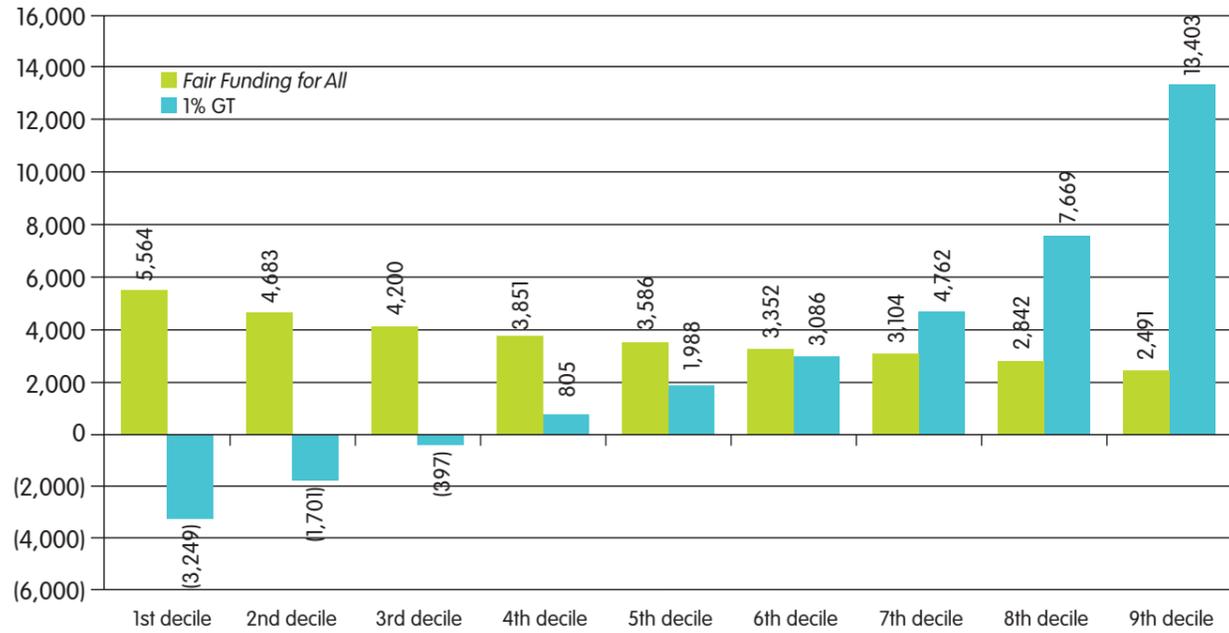
In addition to the consideration of the distributional impact of the various alternatives based on the characteristics of the graduate in question, we have also provided a more general analysis of the expected contribution of students under the alternative scenarios by income decile. In Figure 9 (overleaf) we present information on the difference in the total contribution for male full-time undergraduates under the *Fair Funding for All* option and the 1% graduate tax, compared to the current system of student support. We present the equivalent information for female full-time undergraduates in Figure 10 (also overleaf).

In simple terms the analysis illustrates that under the *Fair Funding for All* scenario, all students contribute more towards their education (thus reducing Exchequer expenditure by over £1 billion per cohort annually). However, those individuals in the lowest income decile bear the greatest increase in cost under this scenario, with contributions of over £5,000 more than is currently the case. For women, the additional contribution under the *Fair Funding for All* option is marginally greater than for men.

In contrast the 1% graduate tax is highly progressive with men in the bottom income decile contributing approximately £3,249 less than under the current system, while women in the bottom decile are essentially unaffected. However, there are significant impacts associated with the graduate tax for middle income females. Women in the third decile will pay approximately £3,500 less for their education than is currently the case, while only women in the top decile will contribute significantly more than under the current system (£2,689). The primary impact of a graduate tax will fall on men in the top income deciles. Men in the 7th decile will contribute approximately £4,762 more than is currently the case, compared to £7,669 for men in the 8th decile and £13,043 for men in the top decile.

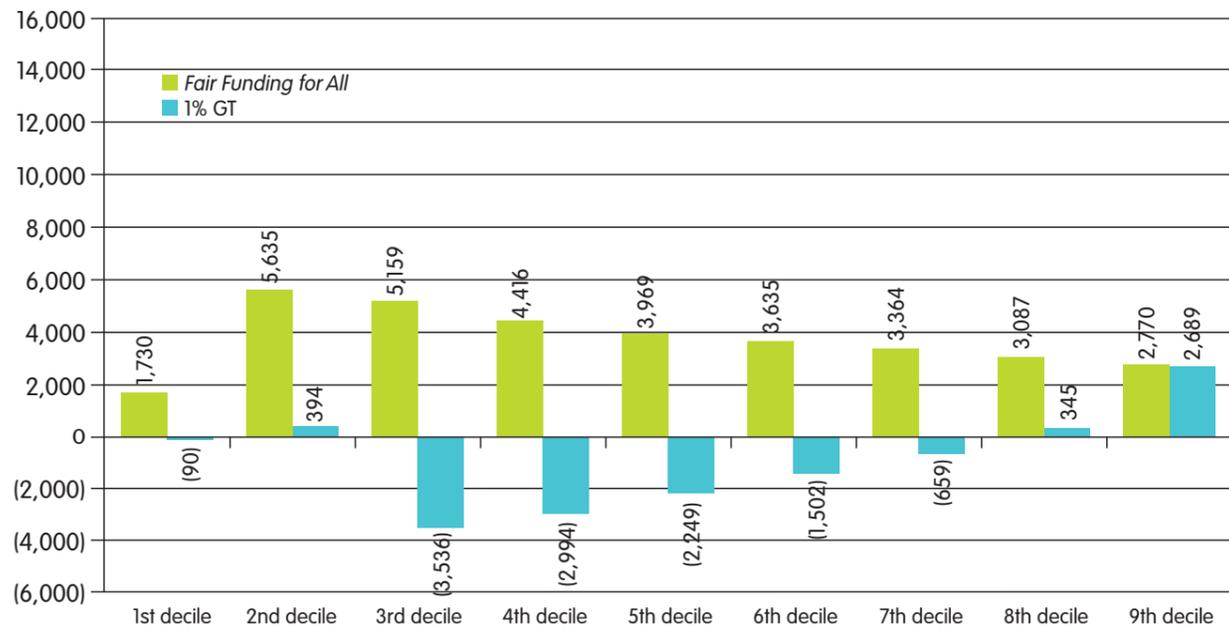
One additional point to note is that part-time students contribute marginally more for their degree than full-time students under a graduate tax. Our analysis indicates that part-time male students contribute approximately £1,700 more in graduate tax compared to full-time undergraduates (presumably because in general they are more likely to earn income in excess of the eligibility threshold more quickly than younger full-time students). The same is true for female part-time undergraduates, who would pay approximately £900 more in graduate tax compared to their full-time counterparts.

Figure 9: Distributional impacts by income decile compared to baseline case (male FT UG)



Source: London Economics

Figure 10: Distributional impacts by income decile compared to baseline case (female FT UG)



Source: London Economics

A Graduate Tax: Would it work? assesses the pros and cons of a graduate tax. In particular, it seeks to end the confusion between a graduate contribution system and a graduate tax. As we outline, a graduate contribution system (however progressive) is linked with a fee while a graduate tax would remove the requirement to pay tuition fees entirely and would tax those who had participated in higher education on the basis of their income. This would end the link to all students paying a 'cost' for their education. Instead all graduates would repay according to the economic 'value' of their qualification in the workplace.

A graduate tax could be levied on earnings in excess of a certain amount, for example, £15,000 (the earnings level used to trigger graduate contributions in respect of the current system in England) and could be levied for a specified or unspecified period of time.

A graduate tax could be collected by HMRC through the PAYE system. While there is scope for tax-avoidance, we estimate that it is unlikely to be any more significant than under the present graduate contribution system.

In economic terms, a graduate tax might produce changes in behaviour – for example, in relation to high earners who are likely to pay more. However, any deterrent effects would only arise following the decision to complete a degree *and* once a positive labour market outcome has been achieved. The clear advantage of a graduate tax – compared to a simple increase in tuition fee – is that it is based on outcomes achieved *after* study at university while an increase in tuition fees is a charge levied *before* university.

Under a graduate tax system, universities would need to be compensated for the loss of fee income. The level of a graduate tax would therefore be related to the teaching funding required to compensate for this loss of fee income. It would also be determined by the extent governments were prepared to invest in higher education. The economic modelling included in this analysis confirms that the Exchequer would be no worse off than under the current system, and universities could expect to receive the same level of resources as currently available, if a 1% graduate tax was levied. A graduate tax of 2.4% would mean universities would be approximately £3.1 billion per annum better off.

By assessing the impact of a graduate tax upon 'real life' graduate profiles and contrasting this with the impacts of alternative scenarios, this report confirms that a graduate tax would be more progressive.

However, the use of a graduate tax as a means of contributing to the funding of higher education does pose wider questions. These include the relationship between universities and government and whether and to what extent fees provide greater institutional freedom. Conversely, in the event that the fee cap is raised, differential fees may create greater inequity in the unit of resource available to institutions whose capacity to increase fee levels is intrinsically linked to the social profile of their student body.

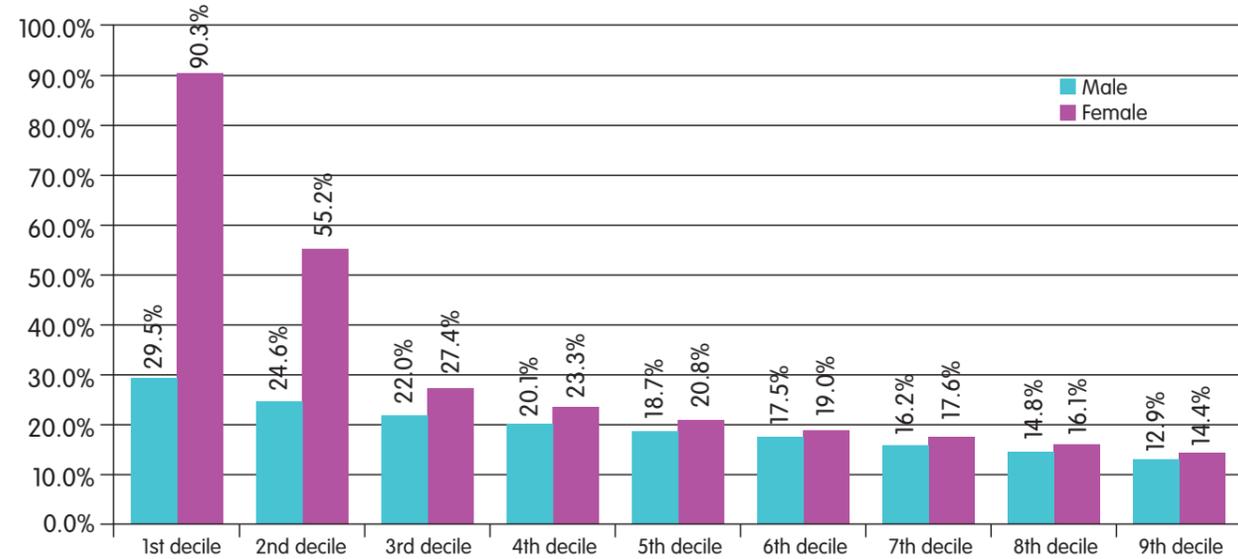
This report sets out the key evidence on which the merits of a graduate tax can be assessed and contrasted with other proposals, including amendments to the current graduate contribution system. It is now vital that a graduate tax option and other sustainable and fair scenarios, are assessed in the light of the Government's own commitments to funding higher education and ensuring that access to study at university remains an option open to all.

Annex 1

Distributional outcomes

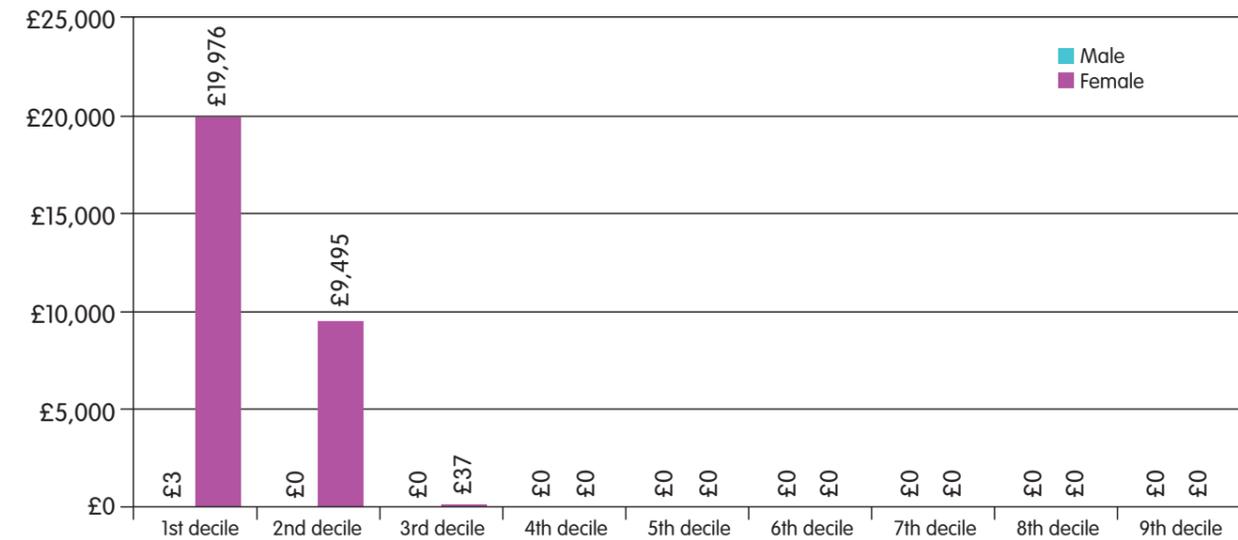
Distributional outcomes under Baseline scenario

Figure 11: Distributional impacts by income decile baseline case (RAB Charge)



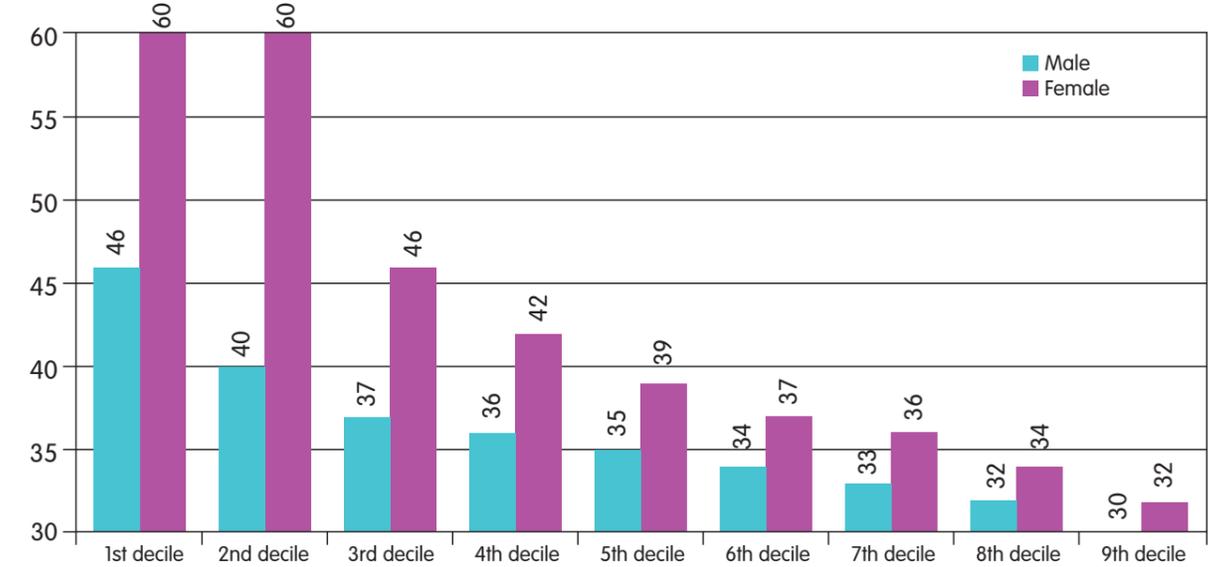
Source: London Economics

Figure 12: Distributional impacts by income decile baseline case (Outstanding Debt)



Source: London Economics

Figure 13: Distributional impacts by income decile baseline case (Age of repayment)



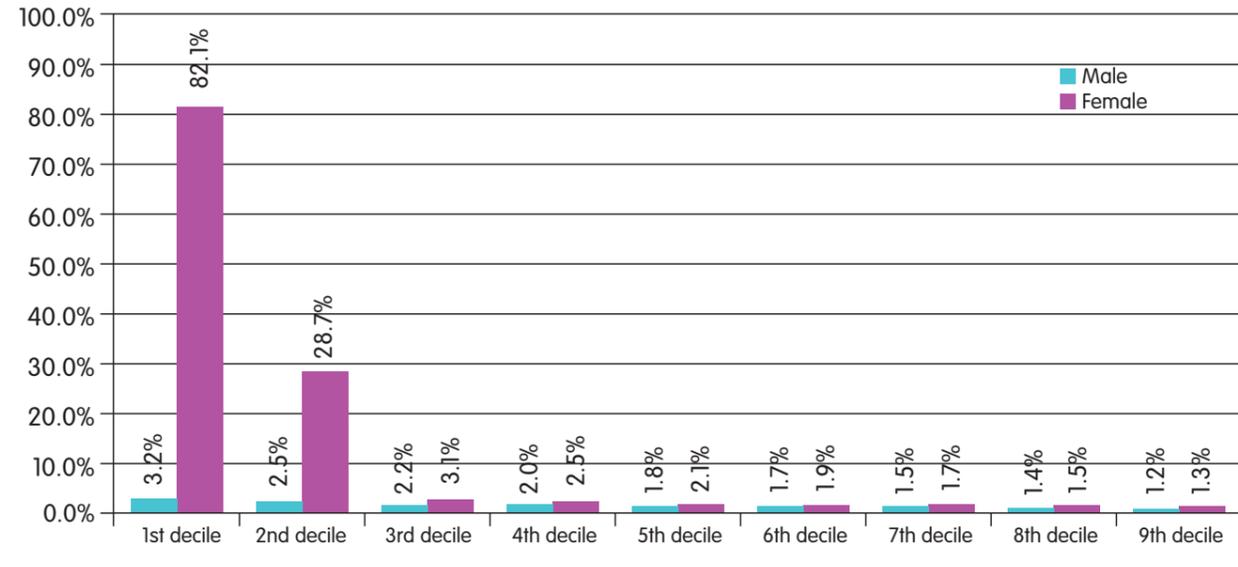
Source: London Economics

Annex 1

Distributional outcomes

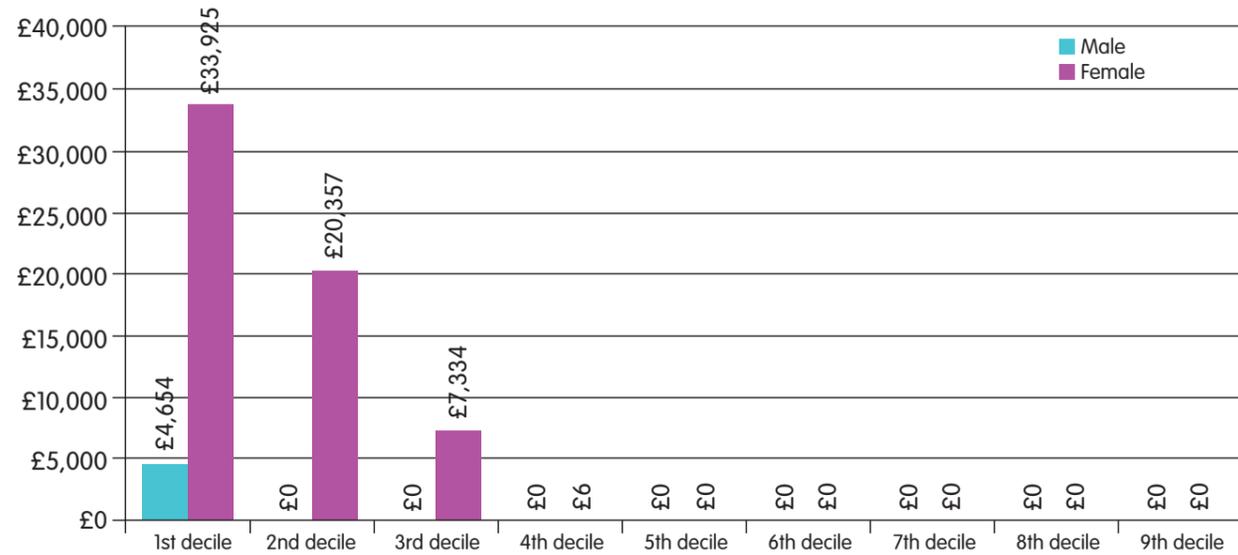
Distributional outcomes under Fair Funding for All scenario

Figure 14: Distributional impacts by income decile Fair Funding for All case (RAB Charge)



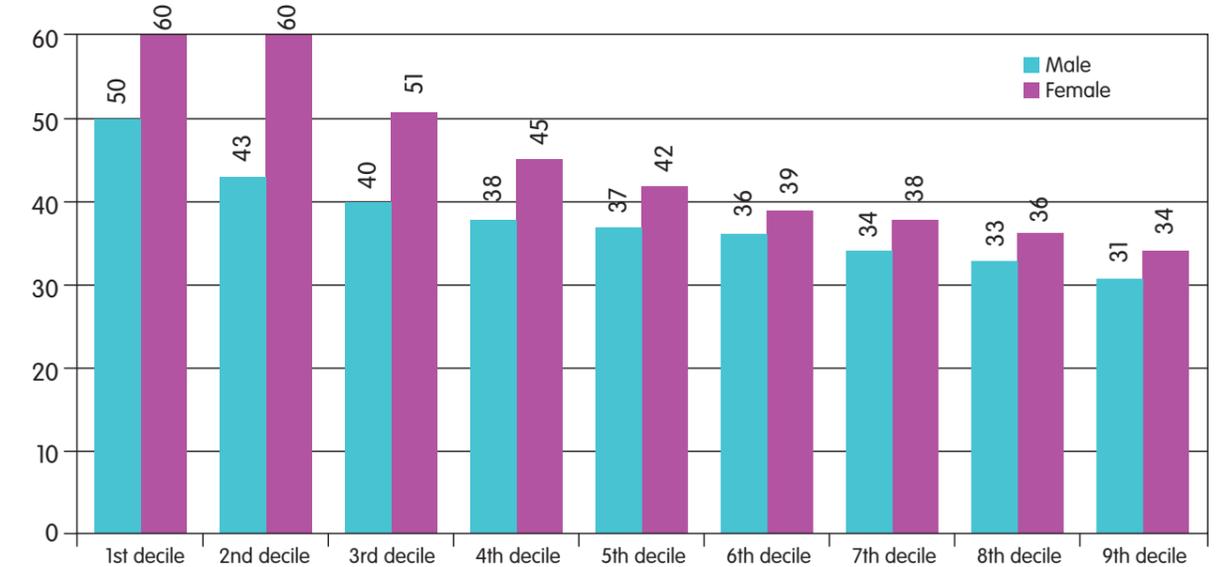
Source: London Economics

Figure 15: Distributional impacts by income decile Fair Funding for All case (Outstanding Debt)



Source: London Economics

Figure 16: Distributional impacts by income decile Fair Funding for All case (Age of repayment)



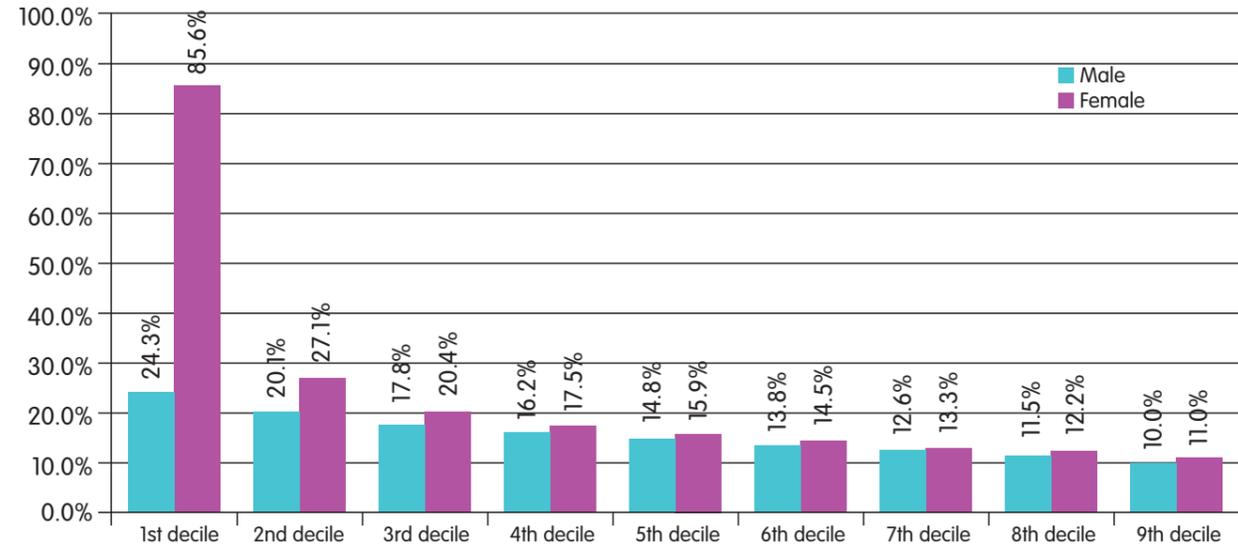
Source: London Economics

Annex 1

Distributional outcomes

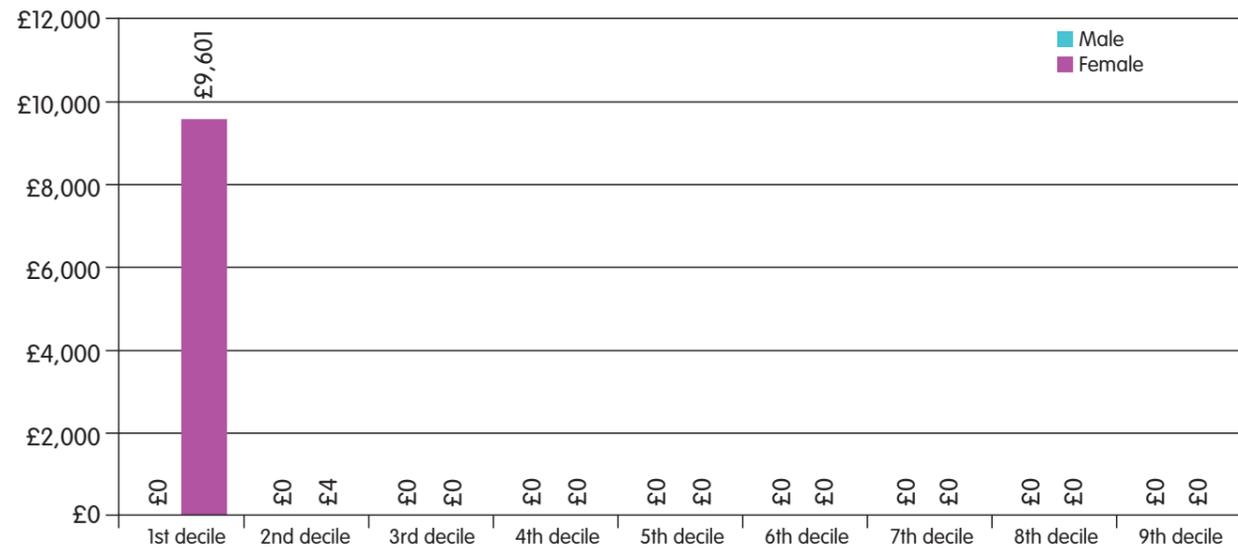
Distributional outcomes under Graduate tax

Figure 17: Distributional impacts by income decile under graduate tax (RAB Charge)



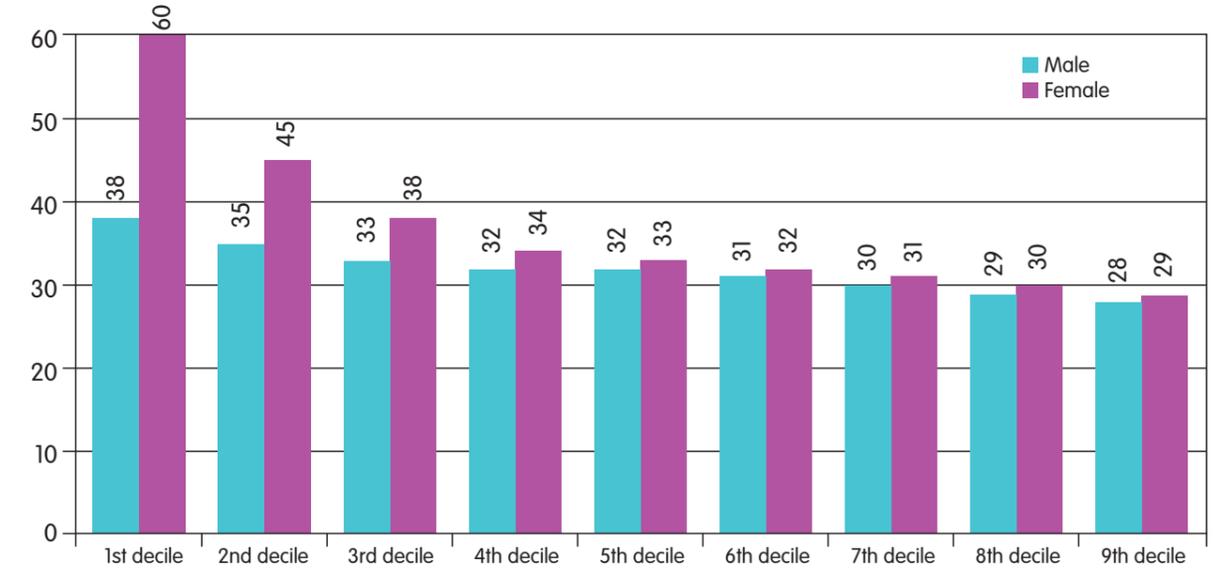
Source: London Economics

Figure 18: Distributional impacts by income decile under graduate tax (Outstanding debt)



Source: London Economics

Figure 19: Distributional impacts by income decile under graduate tax (Age of repayment)



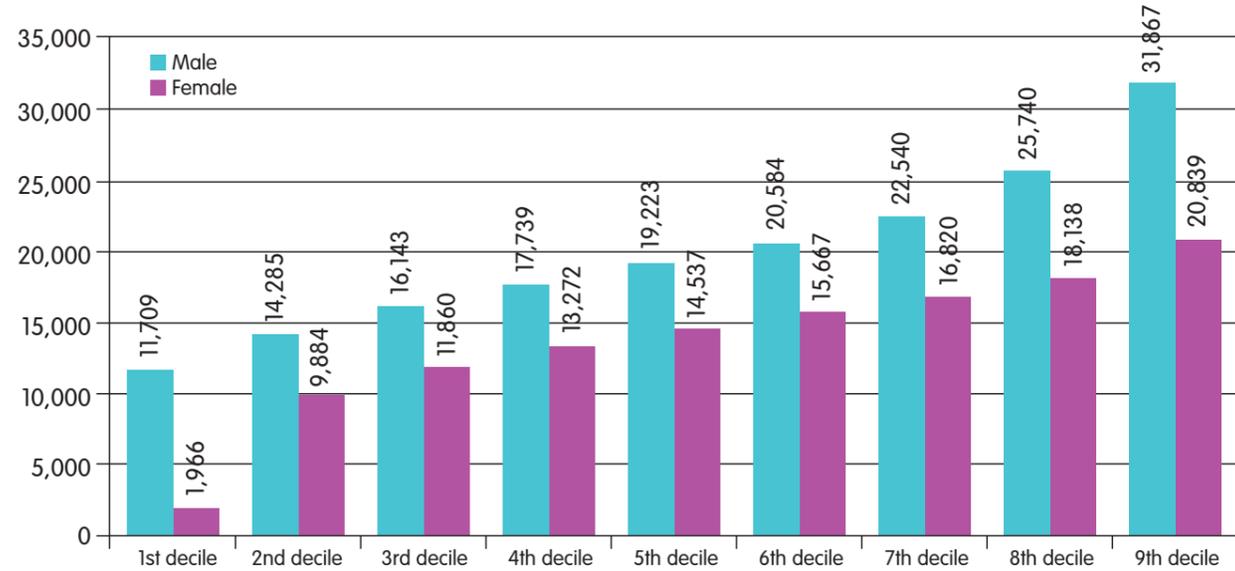
Source: London Economics

Annex 1

Distributional outcomes

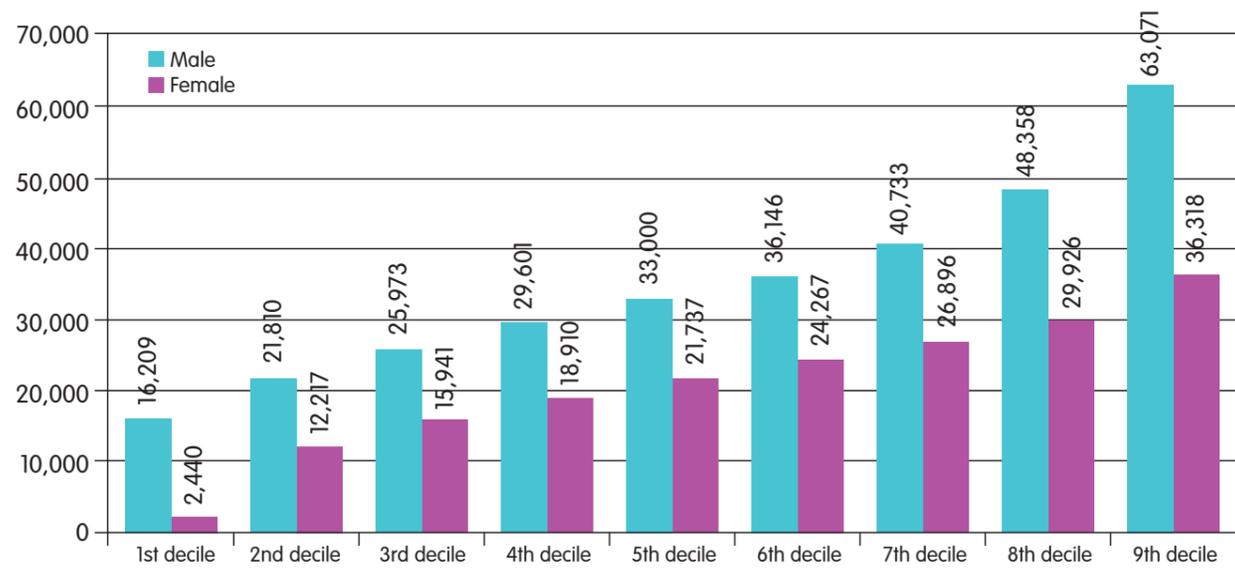
Total repayments under alternative graduate tax rates

Figure 20: Distributional impacts by income decile 1% graduate tax case (Total contribution)



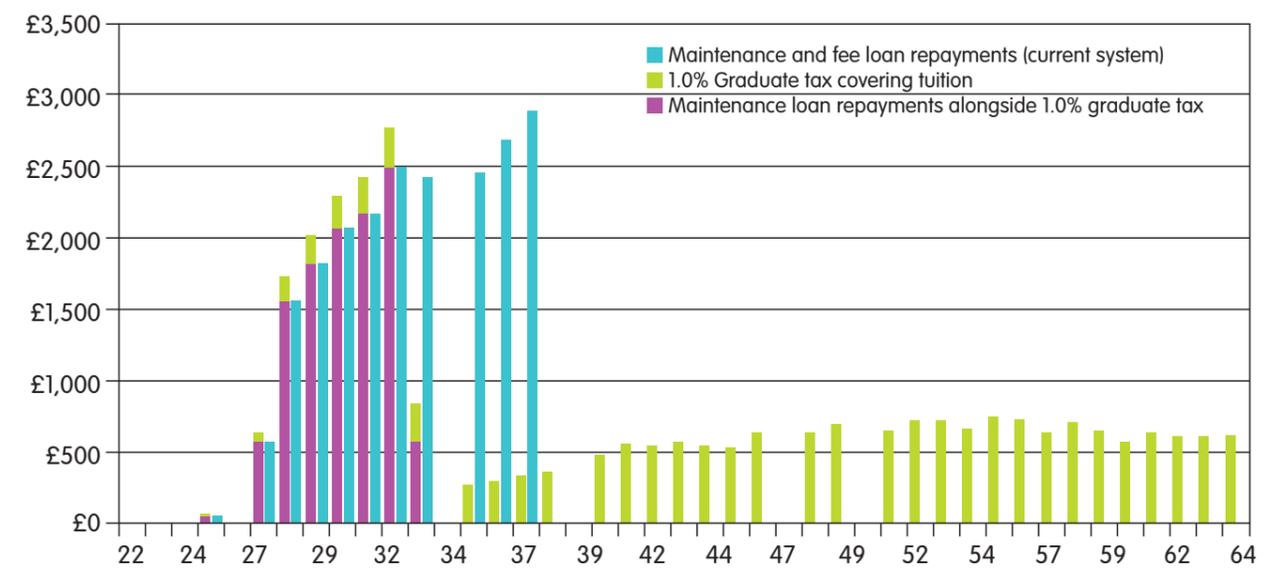
Source: London Economics

Figure 21: Distributional impacts by income decile 2.4% graduate tax case (Total contribution)



Source: London Economics

Figure 22: Annual repayment profile – late earner



Source: London Economics

Annex 2 Full-time and Mixed Mode institutions

For the purposes of modelling the higher education institutions (as identified by HESA) in England were split into two groups: Full-time institutions and Mixed Mode institutions. The institutions included in each group are listed below.

Full-time institutions	Mixed Mode institutions
Aston University	Anglia Ruskin University
Bath Spa University	University of Bedfordshire
The University of Bath	Birkbeck College
The University of Birmingham	Birmingham City University
Bishop Grosseteste University College Lincoln	University College Birmingham
The Arts Institute at Bournemouth	The University of Bolton
The University of Bradford	Bournemouth University
The University of Bristol	The University of Brighton
Brunel University	Buckinghamshire New University
The University of Buckingham	Canterbury Christ Church University
The University of Cambridge	The University of Central Lancashire
The Institute of Cancer Research	University of Chester
Central School of Speech and Drama	The City University
The University of Chichester	Coventry University
Conservatoire for Dance and Drama	University of Cumbria
Courtauld Institute of Art	De Montfort University
Cranfield University	University of Derby
University for the Creative Arts	The University of East London
Dartington College of Arts	Edge Hill University
University of Durham	University of Gloucestershire
The University of East Anglia	The University of Greenwich
The University of Essex	Harper Adams University College
The University of Exeter	The University of Huddersfield
University College Falmouth	The University of Hull
Goldsmiths College	Leeds Metropolitan University
Guildhall School of Music and Drama	The University of Lincoln
University of Hertfordshire	Liverpool Hope University
Heythrop College	Liverpool John Moores University
Imperial College of Science, Technology and Medicine	London Metropolitan University
Institute of Education	London South Bank University
The University of Keele	Middlesex University
The University of Kent	The University of Northampton
King's College London	The University of Northumbria at Newcastle
Kingston University	The Open University
The University of Lancaster	The University of Plymouth
Leeds College of Music	The University of Salford
The University of Leeds	Southampton Solent University
Leeds Trinity and All Saints	Staffordshire University
The University of Leicester	University Campus Suffolk
The Liverpool Institute for Performing Arts	The University of Sunderland
The University of Liverpool	The University of Teesside
University of the Arts, London	Thames Valley University
London Business School	University of the West of England, Bristol
University of London (Institutes and activities)	The University of Westminster
London School of Economics and Political Science	The University of Wolverhampton
London School of Hygiene and Tropical Medicine	The University of Worcester
	York St John University
Loughborough University	
The Manchester Metropolitan University	
The University of Manchester	
The University of Newcastle-upon-Tyne	
Newman University College	
Norwich University College of the Arts	
The University of Nottingham	
The Nottingham Trent University	
Oxford Brookes University	
The University of Oxford	
University College Plymouth St Mark and St John	
The University of Portsmouth	
Queen Mary and Westfield College	
Ravensbourne College of Design and Communication	
The University of Reading	
Roehampton University	
Rose Bruford College	
Royal Academy of Music	
Royal Agricultural College	
Royal College of Art	
Royal College of Music	
Royal Holloway and Bedford New College	
Royal Northern College of Music	
The Royal Veterinary College	
St George's Hospital Medical School	
St Mary's University College, Twickenham	
The School of Oriental and African Studies	
The School of Pharmacy	
Sheffield Hallam University	
The University of Sheffield	
The University of Southampton	
The University of Surrey	
The University of Sussex	
Trinity Laban	
University College London	
The University of Warwick	
The University of Winchester	
Writtle College	
The University of York	



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