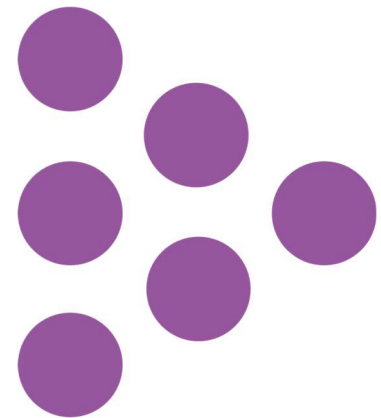


Report

Policy analysis of student loan reimbursements for improving teacher retention

National Foundation for Educational Research (NFER)



Policy analysis of student loan reimbursements for improving teacher retention

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Executive Summary

Ensuring there are enough teachers in state schools in England has been a significant challenge for governments for over a decade (McLean, Worth and Smith, 2024). Although the next few years will see pupil numbers fall in both the primary and secondary phases (Julius, 2023), forecasts suggest that this will not be sufficient to ease shortages, particularly in shortage subjects (Worth and Tang, 2024). One persistent issue is that of large numbers of teachers leaving during their first five years after qualifying.

Recent initiatives to increase teacher numbers have included increasing bursaries to boost recruitment to teacher training in shortage subjects. Evidence suggests that bursaries have a positive impact on recruitment rates – see our report for an overview of the evidence (McLean, Tang and Worth, 2023).

In 2018/19 early-career retention payments (ECRPs) were introduced for maths and physics teachers (Sims and Benhenda, 2022) and have taken various forms since then (such as early-career payments and levelling up premium payments). Designs have varied, but all have focussed on paying fixed payments to teachers during the first five years of their careers.

The Department for Education (DfE) ran a pilot scheme from 2018/19 whereby eligible teachers could claim back the student loan

repayments they had paid in the previous year (Department for Education, 2017). Eligible teachers were those teaching certain shortage subjects in the state-sector in schools in one of the 26 pilot local authorities (LAs) in the first ten years of their teaching career. The DfE ran some analysis looking at the impact of this scheme on leaving rates. All estimates showed that the scheme reduced the leaving rate but none of the estimates were statistically significant (CFE Research, 2023).

NFER was commissioned by the National Association of School-Based Teacher Trainers (NASBTT) and Universities' Council for the Education of Teachers (UCET) to estimate the costs and possible impact on teacher supply of introducing a new teacher student loan reimbursement (TSLR) scheme. We also compared the value for money of a TSLR scheme to other financial incentives designed to improve teacher supply, namely bursary increases and ECRPs.

Key findings

Our modelling estimates that introducing a TSLR scheme in 2025/26 for all teachers who are in their first ten years since qualifying would lead to an increase of around 2,100 teachers in the first year of the programme. It is important to highlight that this modelling uses the mean estimate of the impact of the pilot TSLR scheme, and outcomes vary between just under 900 to nearly 3,000 depending on which estimate is used¹.

¹ All estimates from the DfE evaluation have confidence intervals that cross zero meaning that there is not enough evidence to confidently conclude that the TSLR has an impact on retention rates (CFE Research, 2023).

We assessed the relative value for money of a TSLR scheme by modelling the progress of a hypothetical cohort of 100 teachers over their teaching career under a TSLR scheme, an ECRP policy and a bursary increase policy. The total cost was kept the same for each scenario.

We found that:

- The cost per additional teacher-year gained was lowest for bursaries, where a subject had no existing bursary (around £9,000) or where the existing bursary was low (around £10,000 per additional teacher-year for an existing bursary of £10,000). This suggests that a policy approach of first raising bursaries where they are low is likely to be most cost effective.
- The cost per additional teacher-year gained was similar for TSLRs and ECRPs (around £12,500). Both were also very similar to the cost per additional teacher-year where bursaries are already around £30,000. This suggests that where there is already a high bursary (e.g. maths and physics currently attract a £28,000 bursary) it is worth focusing on incentivising retention.
- ECRPs and a TSLR scheme both boost teacher supply by improving retention rates over the time the policies are running. Bursaries operate by attracting more teachers into teacher training which feeds through to increased numbers entering the state-sector teaching workforce. One outcome of this difference is that the average level of experience for additional teachers due to ECRPs or a TSLR scheme will be higher in the short term.

- ECRPs and a TSLR scheme are functionally similar but there are two differences which are important for policymakers to consider. Firstly, ECRP amounts are fixed across teachers² whereas TSLR payments vary across gender, experience and working patterns as the level of repayment is related to income. Secondly, ECRPs potentially offer more flexibility than a TSLR scheme because policymakers can vary the payment amounts due to circumstances, rather than linking the payment to a fixed amount defined by each teacher's loan repayments.

We recommend that:

- Government should carefully consider the merits of introducing a TSLR scheme as part of its teacher recruitment and retention strategy. Where bursaries are zero or low for subjects this is likely to be the most effective policy to implement. A TSLR scheme could be considered alongside ECRPs for subjects or phases where bursaries are already high.
- Further analysis should be conducted of the 2017 pilot TSLR scheme's on-going impact on retention, to gain more information about the impact over the length of the policy, on teachers with more than five years' experience and more precise estimates of impact now that data from more cohorts is available. Data from the pilot TSLR scheme could also be used to assess whether there is a differential impact of the scheme for teachers at different stages of their career.

² Although ECRPs may vary across some school characteristics such as proportion of pupils eligible for free school meals.

1. Introduction

1.1. Policy background

The persistent challenge of teacher shortages in England has been on successive governments' agendas. Most recently a key pledge of the incoming Government is 'to recruit 6,500 additional expert teachers' (Worth, 2024). The above-inflation increase in teacher pay for 2024/25 of 5.5 per cent reflects this commitment (GOV.UK, 2024a).

NFER's *Teacher Labour Market in England Annual Report 2024* shows that after subsiding during the pandemic, leaving rates are back to pre-pandemic levels (McLean, Worth and Smith, 2024). A recent select committee report acknowledges that although teacher numbers are increasing in absolute terms they are not increasing relative to pupil numbers (Education Committee, 2024).

Increases in pupil numbers have put more pressure on teacher supply as higher numbers of teachers are needed to maintain pupil-teacher ratios. Although since 2018/19 primary age pupil numbers have started to fall, projections suggest secondary pupil numbers will remain stable until 2025/26 before the smaller cohorts of pupils reach secondary age (Julius, 2023).

High leaving rates for teachers early on in their careers have been a focus for policymakers (Zuccollo, 2023). The Early Career Framework (ECF), which aims to provide improved support for teachers in their first two years of teaching, was a key part of the Government's Teacher Recruitment and Retention Strategy (DfE, 2019). Alongside

the ECF, a range of ECRPs have been introduced for teachers of shortage subjects during their first five years after qualifying.

A recent select committee report highlights that leaving rates were at their highest in 2021/22 since 2017/18 (9.7%). The leaving rate for 2022/23 is very similar (9.6%) (GOV.UK, 2024b). This rate is increasingly made up of working-age teachers leaving teaching (at least teaching in the state-sector) and not those leaving due to retirement (Education Committee, 2024).

As well as retaining existing teachers, the other important determinant of teacher supply is recruitment into the profession. Bursaries have been a policy aimed at boosting recruitment to initial teacher training (ITT) in shortage subjects. Government spending on bursaries has grown steadily since the pandemic.

1.2. Student loan reimbursements

Alongside changes in pay, a range of financial incentives has been used to boost recruitment and retention over the past 20 years. These incentives are generally targeted rather than universal; received by those training in (or teaching) particular subjects and/ or who are teaching in areas where filling teacher vacancies has proved particularly challenging.

In 2001 the then Labour Government introduced a student loan repayment scheme for teachers of shortage subjects (Department for Education and Employment, 2001). The Repayment of Teacher Loans (RTL) scheme was a generous policy whereby the entirety of an

eligible teacher's student loan was repaid over a ten-year period if they stayed in teaching in the state sector. The last cohort eligible for this policy were those entering teaching in 2004.

More recently in 2017, a pilot policy was launched where student loan repayments of teachers in some shortage subjects were reimbursed during the first ten years of their teaching career in the state sector (Department for Education, 2017).

The pilot scheme was not rolled out nationally and teachers needed to have worked in a state school in one of 26 LAs³ when they originally paid the loan repayment to qualify. As well as working in a school in a pilot LA when they made the original payments, teachers also needed to have spent at least 50 per cent of their contracted time teaching one or more of the eligible subjects namely biology, chemistry, computing, languages and physics (Department for Education, 2024b). To be eligible for the pilot, these teachers needed to have completed their teaching qualification between 2013/14 and 2020/21. The first eligible cohort could have claimed reimbursements for five years (from 2018/19 through to 2023/24 and the last eligible cohort can claim for ten years from 2021/22 through to 2030/31.

The DfE ran its own statistical analysis estimating the impact of the TSLR pilot (CFE Research, 2023 and see Section 1.3). We build on this analysis to explore whether a TSLR scheme could provide a viable and cost-effective policy option to aid teacher retention.

³ 26 LAs were part of the pilot TSLR evaluation. For a list of the pilot LAs see (DfE, 2019b).

Since the DfE evaluation there have been reforms to the student loans system in England which may provide reason to return to discussions around a new TSLR scheme. The reforms involved freezing the repayment threshold for four years for current cohorts of students and then increasing it in line with the retail prices index (RPI). For future cohorts of students, the threshold is lower and the time period after which outstanding loans are written off for future cohorts has increased to 40 years. These changes have been shown to negatively impact future lower- to middle-earners (Ogden and Waltmann, 2023). The combination of reforms to the student loan system mean that those teachers under both plans are likely to repay more over their career than under the previous system (Bolton, 2022).

Teacher shortages are high on the agenda for the incoming Labour Government, as recruiting 6,500 new teachers was one of six central manifesto pledges (Labour Party, 2024). NFER analysis (Worth, 2024) shows that a combination of pay and other more targeted financial incentives could help to address the current teachers shortages in some subjects. In this report we consider whether a new TSLR scheme could have a valuable role to play.

1.3. Research evidence on TSLRs

As described above, the DfE introduced a pilot TSLR scheme in 2017 with eligible teachers first able to claim for 2018/19 academic year. An evaluation of the scheme was commissioned by DfE, which looked at awareness of the scheme, barriers in the application process and self-reported impacts in terms of teacher retention (CFE Research, 2023).

The DfE undertook their own internal statistical analysis of the impact of the pilot scheme on teacher retention (see final section of main evaluation (CFE Research, 2023)). This involved using four cohorts of teacher data from the School Workforce Census (SWC) from 2016 to 2019. Two cohorts (2016 and 2017) are from before the policy was implemented and two cohorts (2018 and 2019) while the scheme was running.

A quasi-experimental approach was used to compare the leaving rate of state-sector teachers who were eligible for reimbursements with the leaving rate of those who were not. The analysis used an intention-to-treat approach as the data did not include information on which individual teachers actually claimed the reimbursement. Data on the LA of individual teachers' schools, subject and the academic year were used to determine their eligibility⁴.

⁴ The sample was restricted to those with at most five years' teaching experience.

⁵ The models differed only in the covariates included and the data used to determine a teacher's subject. (This was either the subject they qualified in or the subject they spent most time teaching).

Six models were run for each pilot year to estimate the impact of the TSLR scheme on leaving rates, giving twelve estimates of impact⁵. The estimates are expressed in terms of the difference in log odds of leaving teaching between eligible teachers and ineligible teachers. These were all negative (implying the TSLR was associated with a lower leaving rate) and ranged from -0.056 to -0.2. This suggested that the TSLR scheme led to approximately a five to 20 per cent reduction in leaving rates.

It is important to acknowledge that all of the confidence intervals around these estimates include zero and therefore do not rule out the possibility of the TSLR scheme having had no impact on leaving rates. The authors acknowledge that with the available data, an impact would have to have been larger to provide statistically significant results, or a larger sample size needed to be able to detect the given effect size⁶.

There was an evaluation of the RTL scheme but this did not include any analysis of impact on recruitment and retention rates (Barmby and Coe, 2004).

⁶ This is due to the small size of the pilot and the Covid-19 pandemic affecting decisions around leaving the profession.

1.4. Aims

The overarching aim of this report is to better understand the impact and cost effectiveness of the TSLR scheme in the context of other available policy options. Previous work has estimated the effect of changes to bursaries and ECRPs on teacher supply. We were commissioned by NASBTT and UCET to examine student loan reimbursements as a potential tool for improving teacher supply.

The analysis undertaken for this report considers the implications of introducing a new TSLR scheme in England from 2025/26. We model the associated costs of rolling out a scheme based on projected future earnings and the impact on teacher supply using the findings from the pilot TSLR scheme evaluation.

We model a policy that is offered to all teachers in the first ten years of their teaching career regardless of subject (including teachers in the primary phase) in all schools in England.

We aim to answer the following research questions:

1. What is the estimated cost of introducing a TSLR scheme?
2. What is the likely impact of introducing a TSLR scheme on teacher supply?
3. How does a TSLR scheme compare to other targeted financial incentives in terms of value for money?

1.5. Structure of report

The following section (Section 2) provides an overview of the methodology used to investigate the research aims outlined in Section 1.4. Sections 3 – 6 present the findings from the modelling and analysis. Section 3 provides estimates of the average repayments made by different groups of teachers if a TSLR scheme was introduced in 2025/26. These estimates are used to produce estimates of the cost of introducing a TSLR scheme.

Section 4 presents the short and medium-term impact on teacher supply of introducing the scheme through providing estimates of the numbers of additional teachers each year from 2025/26. Long-term impacts are presented in Section 5 using a single cohort approach.

Section 6 brings together the costs and impacts from previous sections to present cost-effectiveness estimates of a new TSLR scheme. Comparisons are made with the cost effectiveness of bursaries and ECRPs.

Section 7 discusses the findings of the modelling and considers their implications for implementation. Conclusions and recommendations are presented in Section 8.

2. Methodology

2.1. Estimating costs of TSLR scheme

Data on teachers and their pay was drawn from the most recent year of the School Workforce Census available (2022/23) to understand the overall earnings distribution of the teacher workforce⁷.

We estimated teacher pay for all years from 2023/24 to 2035/36 using total remuneration (including teaching and learning responsibility (TLR) payments and other additional payments) in 2022/23 and inflating it using annual percentage pay increases⁸.

To calculate estimates of the cost of introducing a TSLR scheme in 2025/26, we estimated the average repayments made across all teachers, split by the number of years since qualification. Through examination of policy guidance (Department for Education, no date) and using RPI forecasts, we established which repayment plan each cohort of teachers was on and therefore which repayment threshold applies.

As described in Box 1 there are currently three different repayment plans determining the percentage of graduates' income they pay back annually towards their student loan and the threshold at which

repayment starts that are relevant for PGCEs (and other non-salaried routes) and undergraduate courses in England.

Box 1: Student loan reforms

Reforms to the student loans system in 2022 changed both repayment thresholds for those on existing repayment plans (Plan 2) and introduced a new plan (Plan 5) for those entering study in 2023/24 (Ogden and Waltmann, 2023; Department for Education, no date)⁹.

Table 1: Overview of different repayment plans

	Annual threshold (2024/25 tax year)	How does threshold change over time? ¹⁰	Percentage paid (above threshold)
Plan 2 if starting PCGE or undergraduate between September 2012 and July 2023	£27,295	will rise in line with the RPI (after 2024/25)	9%
Plan 5 if starting PCGE or undergraduate from August 2023	£25,000	will rise in line with the RPI (after 2026/27)	9%

⁷ This data was accessed through the SRS.

⁸ We used actual pay increases for 2023/24 (7.1% for beginner teachers for those in Rest of England and 6.5% for all others) and for 2024/25 (5.5%). Estimated pay increases were used for 2025/26 and beyond (2%).

⁹ Some teachers are making repayments under Plan 1 but these teachers would not qualify for the TSLR scheme as they have been qualified for longer than ten years in 2025/26 (our proposed year of introducing the scheme).

¹⁰ <https://www.gov.uk/guidance/previous-annual-repayment-thresholds>

Changes for those making repayments under Plan 2 (which are also reflected in Plan 5) are a lower repayment threshold and linking threshold increases to RPI rather than growth in average earnings. In addition, under Plan 5, the loan repayment period is up to 40 years compared to 30 years under Plan 2. The interest rate applied to loans is RPI for all under Plan 5 (rather than RPI + 3% for higher earners under Plan 2).

Plan 1 is not relevant for our analysis as those teachers who took out loans for PGCEs on this plan would not be eligible for a new TSLR scheme in 2025/26. This is because it will have been more than ten years since they gained Qualified Teacher Status (QTS). We model reimbursements for teachers under Plan 2 (cohorts that gained QTS up to 2024) and Plan 5 (cohorts that gained QTS after 2024). The only difference between plans that is relevant to the analysis is the threshold value over which repayments are made, as the repayment rate is nine per cent for both plans.

In the analysis, the year in which teachers started their PGCE determines which plan is applied to determine their average annual repayments. We estimated the implied repayments for each year from 2025/26 to 2035/36. The repayments were also estimated for teachers at different parts of the income distribution, as well as the average repayments for different groups – namely males/females, and full-time/part-time workers.

In addition to the repayments calculated from earnings through teaching, the loan reimbursements from the previous year are

considered additional income in terms of calculating student loan repayment for that year. Student loan repayments paid in year x are reimbursed the following year ($x + 1$). The reimbursements are paid through Pay As You Earn (PAYE) and are both taxable and counted as income for calculating the student loan repayments due for year $x + 1$. We modelled this when calculating the costs of a TSLR scheme.

We made the following simplifying assumptions to calculate estimates for average annual repayment amounts:

1. We assume teachers retain the same salary for the whole academic year and calculate the estimated repayments on this basis.
2. In the analysis we assume that the threshold rate applies to the whole academic year not just the time from September through to March. In reality, changes to repayment thresholds and changes to teacher pay do not happen at the same time, as the former is aligned with the financial year beginning in April and the latter the academic year beginning in September.
3. We assume that all PGCE trainees get student loans to cover their living costs during their ITT. This seems a reasonable assumption although there is likely to be a small group of trainees who do not do this – those receiving large bursaries, for example. (Note: some of these trainees may be making repayments under Plan 1 due to only having an undergraduate loan before September 2012 (Department for Education, no date)).
4. Some routes into teaching are salaried (i.e. Teach First) and some subjects can apply for bursaries to cover the cost of their training,

but these are ignored here to simplify the modelling and to aid comparison between bursaries and the proposed TSLR scheme.

Assumption one is likely to hold true for the vast majority of teachers. Assumptions two to four could potentially lead to our analysis slightly overestimating the repayments made and therefore the costs of a TSLR scheme.

A further point to note is that student loan reimbursements are considered a taxable income. Under the TSLR scheme the DfE pays the basic rate tax due on reimbursements (Department for Education, 2024b). We do not include these costs in the modelling as we have focussed on the net cost to central Government, but this income tax may represent an additional cost to the DfE.

2.2. Value for money analysis

2.2.1. Modelling impact and costs of TSLR scheme

2.2.1.1. Short-term impact on teacher supply

To estimate the short-term impact of introducing a TSLR scheme in 2025/26 we used the number of teachers teaching in 2022/23 split by number of years since qualifying to estimate the structure of the workforce. The average leaving rates split by number of years after qualifying were estimated using all available years of the SWC. By combining the number of teachers in each year since qualifying with the average leaving rate by year since qualifying we estimate a baseline number of teachers (i.e. when there is no TSLR scheme).

Using the estimates of impact on the leaving rate from the DfE's evaluation we estimate retention rates for teachers eligible for a TSLR scheme if introduced for the 2025/26 academic year (CFE Research, 2023). The DfE analysis estimated that the pilot TSLR scheme led to a reduction in the log odds of the rate of leaving the profession of between 0.05 and 0.20. We used the smallest estimate of impact, the mean estimate and the largest estimate to model the range of possible changes to the leaving rate predicted due to the TSLR policy. We applied these impact estimates to all teachers on the assumption that the impact is applicable more generally. However, it was estimated only for those in eligible subjects and in eligible areas. We believe this assumption is reasonable to make, but we acknowledge that the impact may not be generalisable to all teachers.

We measured the impact of the proposed TSLR scheme after one year in terms of total number of additional teachers retained above the baseline across all ten eligible cohorts.

2.2.1.2. Long-term impact on teacher supply

To model the longer-term impact of a TSLR scheme we used a hypothetical cohort of 100 teachers. We estimate the impact of a TSLR scheme on teacher supply over the period of an entire teaching career. We measure impact through estimating the additional number of teachers per year (or teacher-years) over the career of one cohort compared to the baseline cohort. The baseline is determined using average entry and leaving rates from the SWC. As described above, our analysis uses the range of estimates of the TSLR impact from the DfE evaluation in the model.

In this cohort analysis (unlike in the short-term impact analysis) the additional teachers staying due to improved retention rates will feed into teacher numbers and costs in subsequent years. We calculated the cumulative number of additional teacher-years and the cumulative additional cost of a TSLR scheme for the cohort of 100 teachers.

One assumption made here is that any impact of the pilot TSLR scheme is negligible across the overall cohort. As we are looking at leaving rates from the most recent SWC data available and some teachers in some cohorts have already been, and continue to be, exposed to the pilot TSLR scheme. Due to the small numbers of teachers involved, we believe this assumption is reasonable.

2.2.2. Modelling impact and costs of bursaries and ECRPs

To evaluate the relative value for money of introducing a TSLR scheme, we compared the impact of the TSLR scheme to that of other financial incentive policies using the same cost envelope. We found the total cost of introducing a TSLR scheme for a cohort of 100 teachers and then found what level of bursary or ECRP would total the same additional cost for a cohort of 100 teachers entering the profession.

To estimate the additional teacher-years associated with increasing bursaries and ECRPs the parameters from previous research for the

elasticity of recruitment and wastage for bursaries (McLean, Tang and Worth, 2023) and the elasticity of wastage for ECRPs (Sims and Benhenda, 2022; CFE Research and FFT Education Datalab, 2023) were used.

We measured additional teacher-years for each year in the cohort's journey and calculate the aggregate cost per additional teacher-year throughout the cohort's time in teaching.

We compared the impact (in terms of cumulative additional teacher-years) of spending an equivalent sum (above baseline) on ECRPs and on bursaries. The additional costs of bursaries include estimates of teacher training costs¹¹, where increased bursaries means more teachers enter teacher training and also any additional pre-existing bursaries paid to this group.

¹¹ Sims and Benhenda (2022) use a figure of the average teacher training costs to central Government being around £29,000 in 2022 prices. However, we require an estimate that does not include the bursary component of the average cost, which the original estimate does (Allen *et al.*, 2016). We

therefore estimate the cost by removing the bursary component from the original estimate from Allen *et al.* and inflate it to reflect 2024/25 prices. The estimate is a weighted average to reflect the difference in cost between primary and secondary training.

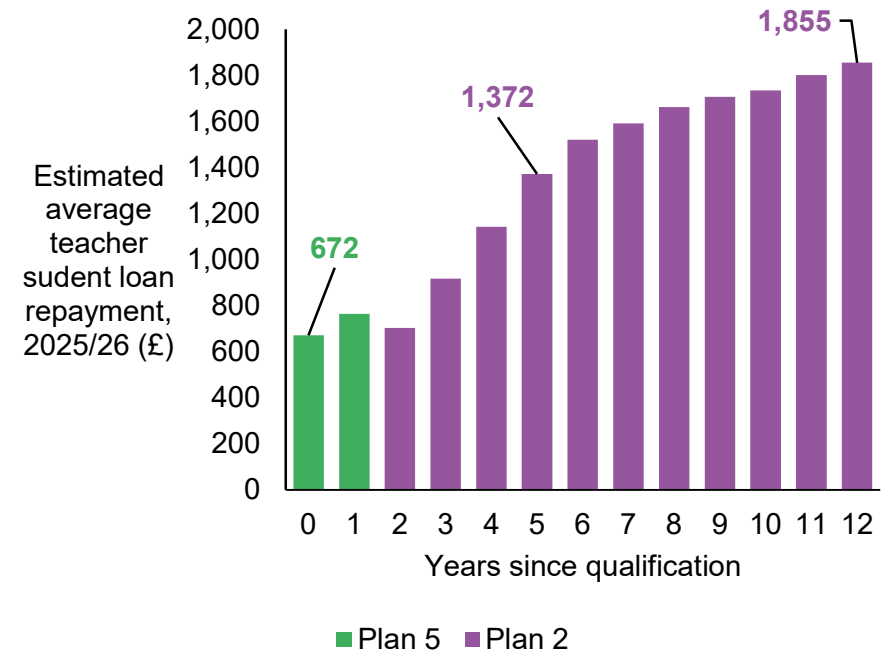
3. The cost of a TSLR scheme

3.1. Average student loan repayments

The main cost to a TSLR scheme is the value of the repayments themselves. Using estimates of teacher pay and the student loan repayment thresholds in 2025/26, we estimate the average annual repayment made, split by number of years since qualifying.

Repayments are nine per cent of annual earnings, over the threshold amount. Therefore, average repayments increase as the number of years since qualification increases, due to salary progression and promotion. Teachers who qualified in 2024 and later are on the new student loan repayment plan (Plan 5) and therefore pay larger repayments compared to the previous plan (Plan 2). This is reflected in the green bars in Figure 1. In subsequent years more cohorts will be repaying their loan under Plan 5.

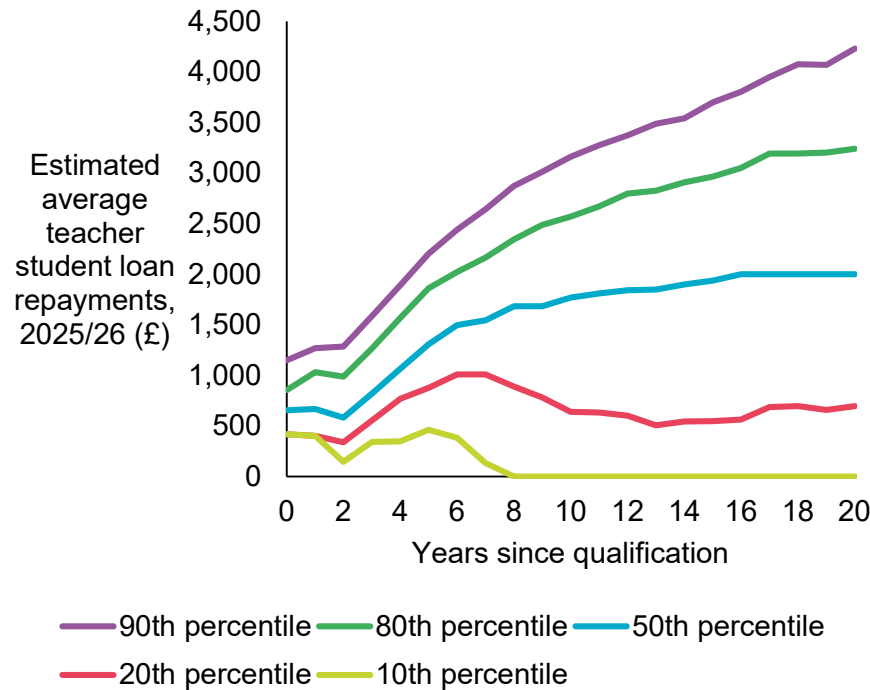
Figure 1: Loan repayments increase with years of experience



Source: NFER analysis of SWC data for 2011/12 to 2022/23

The average hides a range of repayment amounts, which diverge as the number of years since qualification increases. This divergence reflects the widening range of salaries due to both salary progression and promotion, and movement into part-time working as shown by Figure 2.

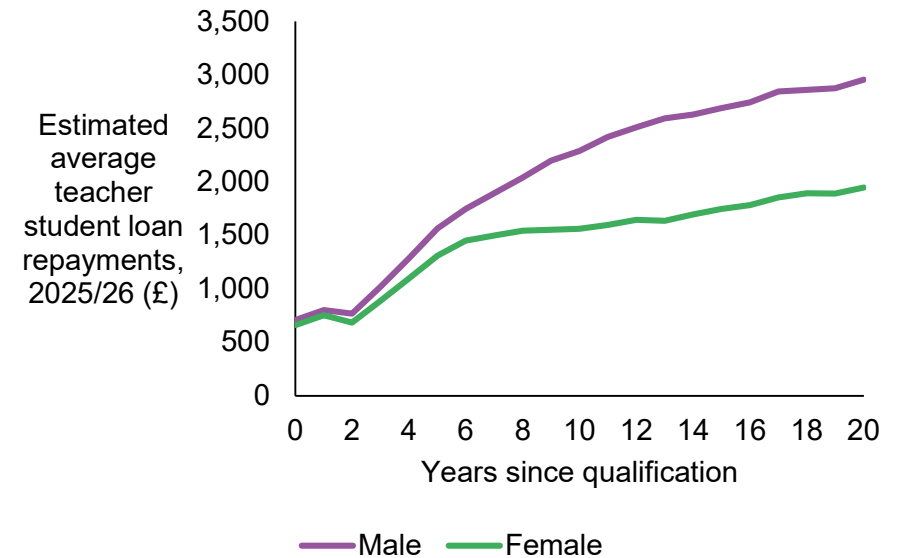
Figure 2: Repayments increasingly vary by experience as the range of earnings increases



Source: NFER analysis of SWC data for 2011/12 to 2022/23

As shown in Figure 3, there are disparities in average repayment amounts by gender, which increase after around five years of qualifying. Male teachers repay around 50 per cent more per year than female teachers after ten years. This difference reflects the higher average earnings for men, which is associated with the higher proportion of men in leadership positions and that men are more likely to work full time (Harland, Bradley and Worth, 2023; Department for Education, 2024a).

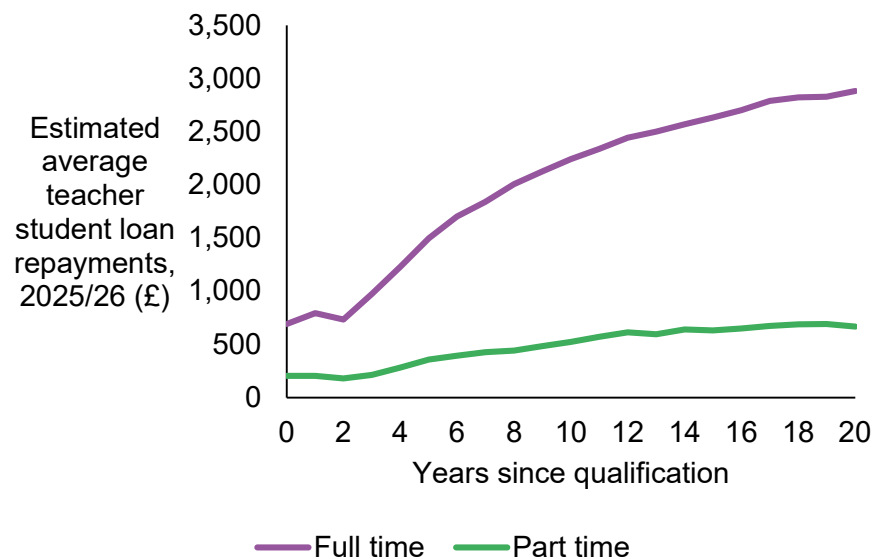
Figure 3: Higher repayments made by males



Source: NFER analysis of SWC data for 2011/12 to 2022/23

Part-time teachers earn less on average than their full-time colleagues by the very nature of working fewer hours (see Figure 4). This translates into part-time teachers paying lower student loan repayments and receiving lower reimbursement payments under a TSLR scheme. However, this is in contrast to ECRP schemes (such as the levelling up premium), for which teachers receive the same payment regardless of working pattern.

Figure 4: Higher repayments made by full-time teachers



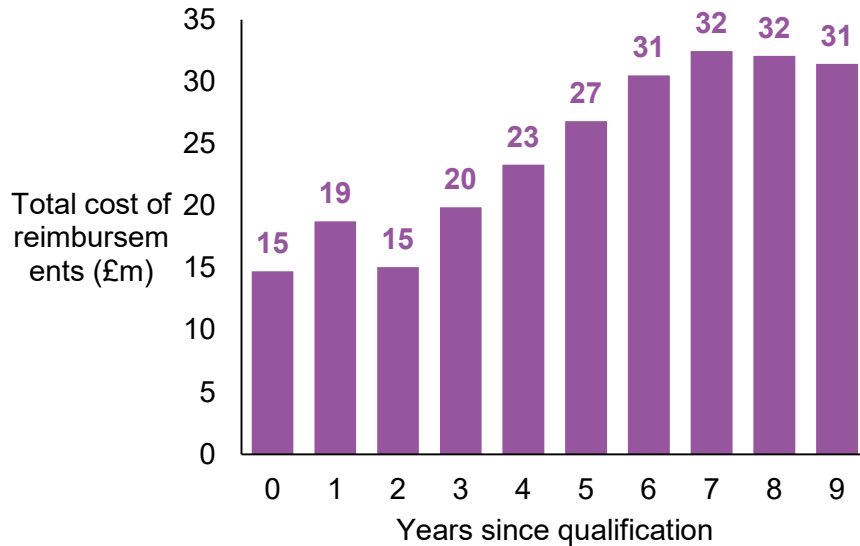
Source: NFER analysis of SWC data for 2011/12 to 2022/23

3.2. Costs of implementing TSLR scheme

By scaling up the average repayment amounts to reflect the number of teachers at each number of years since qualification, we estimate the cost of introducing the scheme for one year (in terms of repayments).

As shown in Figure 5, the total cost of reimbursement payments increases with years of experience as earnings and repayment amounts grow (as shown in Figure 1). This is despite the steady fall in the number of teachers at each number of years since qualification, which falls due to teacher attrition outweighing entry. As earnings growth slows after year 7 of teaching, the attrition effect on the total cost starts lowering the cost very slightly. The fall in cost between year 1 since qualification and year 2 is driven by teachers being on repayment Plan 5, which has a lower threshold than Plan 2.

Figure 5: Implementing a new TSLR scheme would cost around £245m in repayments in 2025/26

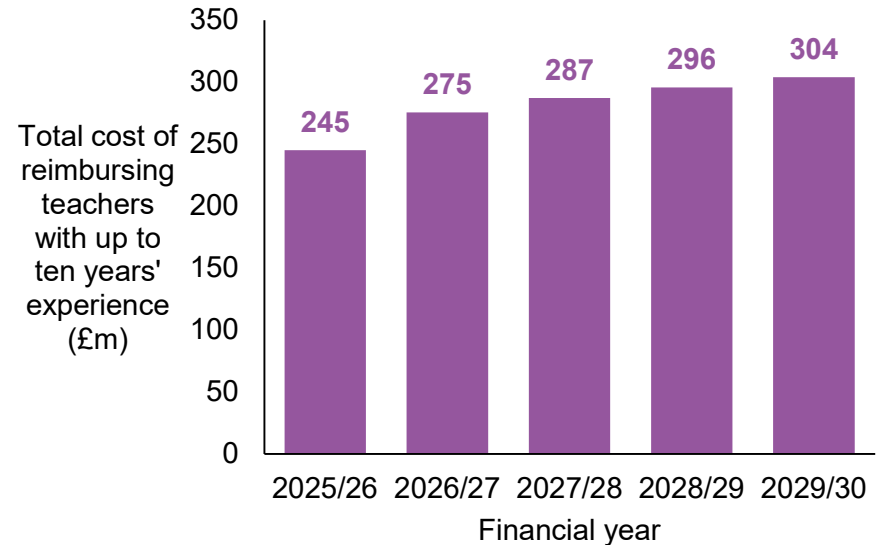


Source: NFER analysis of SWC data for 2011/12 to 2022/23

Figure 6 shows that the total cost of introducing a universal TSLR scheme in 2025/26 would be around £245m. The costs would likely rise over time due in part to more teachers being on Plan 5, which has a lower threshold than Plan 2. The costs in year 2026/27 may be even higher than estimated here, as the TSLR scheme in 2025/26 may increase the number of teachers within ten years since qualifying in the workforce in 2026/27 (see next section), whereas our analysis assumes for simplicity that the size of the workforce remains static. We

see from analysis in the following section that this effect (additional teachers feeding through into the system) is small.

Figure 6: Total repayment costs increase slightly over time



Source: NFER analysis of SWC data for 2011/12 to 2022/23

4. Short-term impact of TSLR scheme

The impact of the TSLR scheme on teacher supply is through its effect on reducing the leaving rate and thus improving the retention of teachers. The size of the effect on the leaving rate in the model is based on analysis undertaken by the DfE on its pilot TSLR scheme introduced in 2018. We modelled the new TSLR scheme using the mean average of the estimates, as well as the smallest estimate and the largest estimate. The numbers of additional teachers retained across all ten eligible cohorts are shown in Table 2.

Based on the average estimate of effect on changes to leaving rates from the DfE analysis, just over 2,100 additional teachers would remain in teaching compared to the baseline with no TSLR scheme. This is at an estimated cost of around £245 million. Given the range of estimates in DfE’s analysis, this could be as low as 880 teachers and as high as almost 3,000 teachers.

We have included a row in the table where the TSLR scheme has no impact on leaving rates. The DfE analysis implies that statistically this cannot be ruled out, as all of the confidence intervals around the DfE estimates include zero. This would result in no additional teachers. However, despite the lack of statistical significance, due to under-powered analysis, we regard the point estimates as suggesting the impact on retention is most likely to be positive.

In the second year (and beyond) of the scheme the additional teachers who have been retained in year one will increase teacher numbers in year 2, and thereby compound the extent of the impact to be even

higher. Although this effect is very small with around 20 additional teachers (on top of the 2,129) at the end of the ten-year period of the scheme.

Table 2: 2,100 additional teachers retained after one year of a TSLR scheme

Impact assumed	Number of additional teachers retained (2025/26)
Zero impact	0
Smallest impact	882
Mean impact	2,129
Largest impact	2,969

Source: NFER analysis

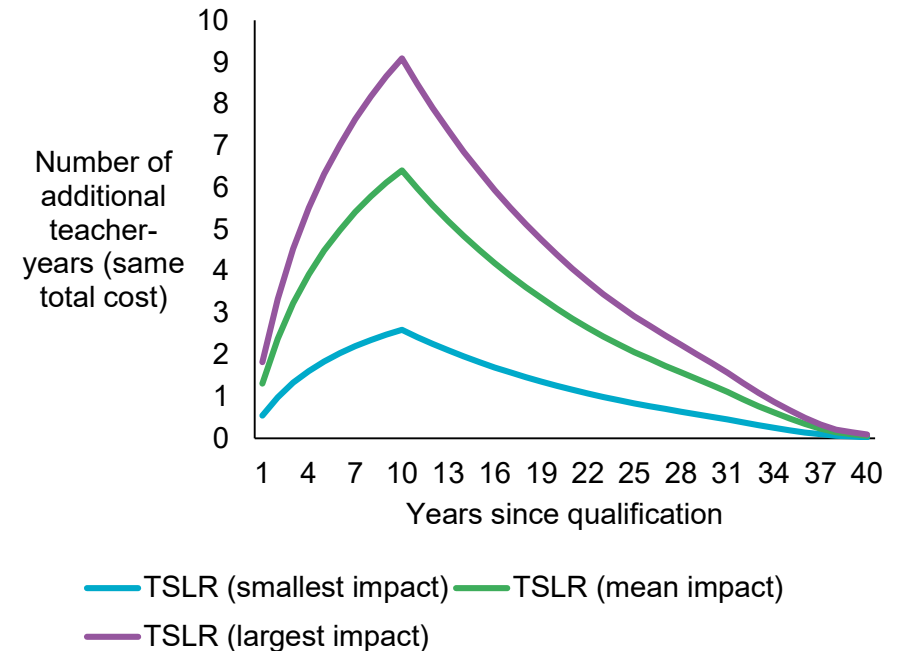
5. Long-term impact of TSLR scheme

To model the long-term impact that a new TSLR scheme may have on teacher supply, we considered a single hypothetical cohort of 100 teachers over their full career. This is a different approach to that taken for the short-term impact analysis in Section 4, which looked at the impact across all eligible cohorts in a single academic year.

Figure 7 shows the number of additional teachers each year (teacher-years) above the baseline scenario (no TSLR scheme) for the range of estimates of impact. The number of additional teacher-years increases with each year teachers are eligible for the scheme (up to the tenth year of teaching). The number of additional teacher-years falls after the tenth year but remains positive relative to the baseline. This is because the same leaving rate is applied, but to a larger cohort of teachers since more have been retained by the TSLR during the first ten years.

There is a large range in terms of the impact on cumulative retention depending on the impact estimate used. The largest estimate leads to an additional nine teacher-years in the tenth year of the scheme compared to only three additional teacher-years for the smallest estimate.

Figure 7: Additional teacher-years increases over the duration of the scheme

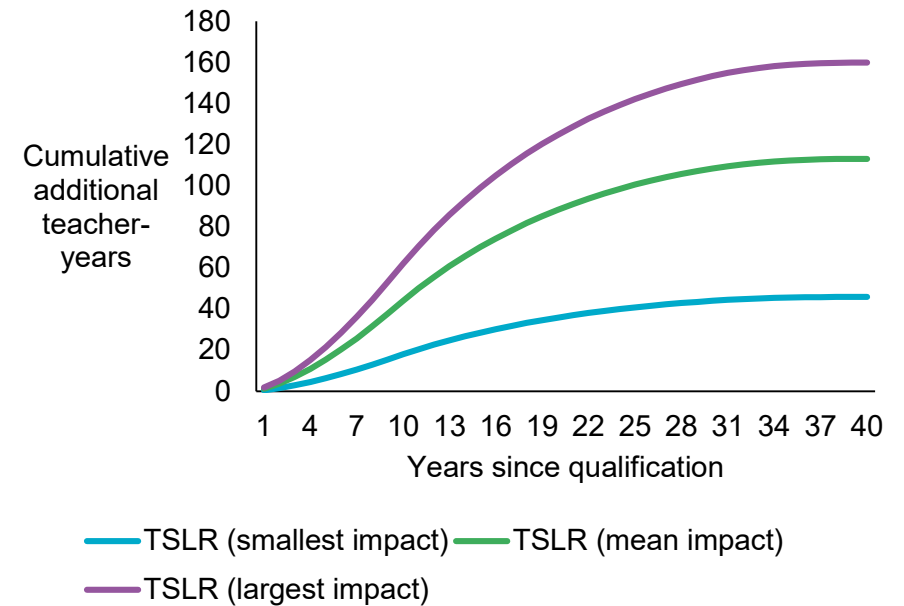


Source: NFER analysis

The cumulative effect of the TSLR scheme using the range of estimates of impact is shown in Figure 8. Over the career of a hypothetical cohort of 100 teachers, the largest estimate leads to an additional 160 teacher-years, compared to 46 with the smallest estimate.

The total additional cost of the scheme on the cohort of 100 teachers varied slightly between £1.37 million and £1.45 million, depending on which impact estimate was used.

Figure 8: The cumulative impact on additional teacher-years depends on which estimate is used



Source: NFER analysis

6. Value for money of TSLR scheme

We modelled four further scenarios to forecast the impact of spending an equivalent sum on different financial incentives that are designed to improve teacher supply. We focus on bursaries for teacher training, which support recruitment and have been shown to not affect subsequent retention rates, and ECRPs, which support retention.

The total cost of implementing a new TSLR scheme for a cohort of 100 teachers based on the mean estimate of impact (£1.42 million) was used to design four further policy scenarios aimed at increasing teacher supply, which would have the same additional cost. Three of these were bursaries and one was an ECRP scheme.

Bursaries increase teacher supply early in the pipeline by boosting recruitment to ITT. The change in the bursary level has a proportional impact on those recruited to ITT: the larger the bursary increase, the larger the increase in recruitment.

However, the level of prevailing bursary determines the level of bursary increase which can be made as part of the policy. Higher prevailing bursaries mean less budget is available to increase bursaries from within the fixed cost envelope. This is because newly-recruited trainees who are induced to enter by the bursary uplift are paid both the uplift and the prevailing bursary amount.

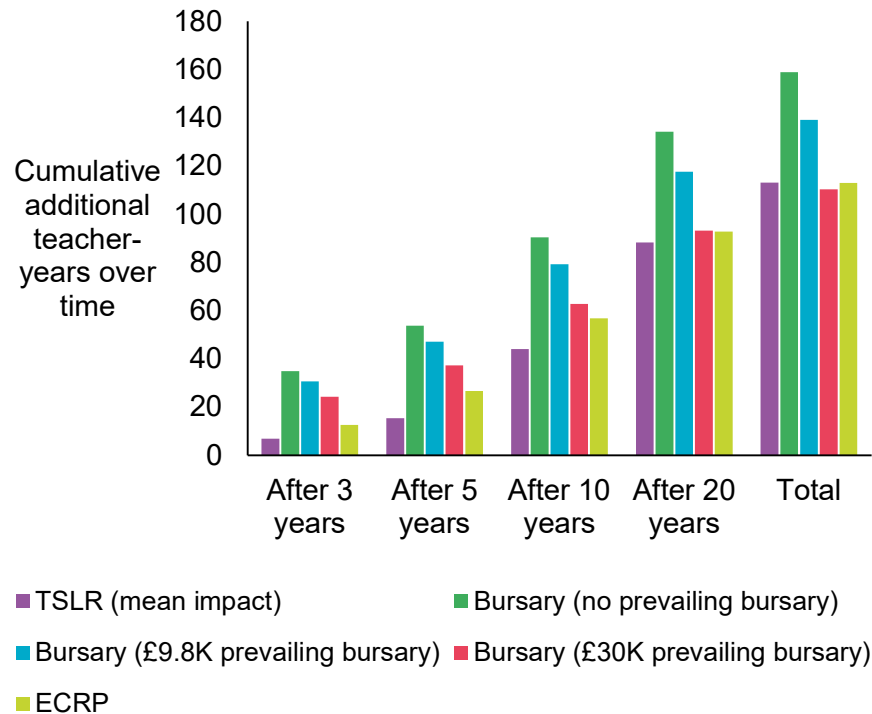
We therefore modelled three different bursary scenarios: one with a £30,000 prevailing bursary (as is approximately the case for shortage subjects), one with no prevailing bursary and one with a £9,800

prevailing bursary. The value of £9,800 was used as it is an estimate for the weighted average bursary paid in 2023/24. It is therefore a proxy for simulating the effect of increasing the bursary for all subjects (even those with no existing bursary) by the same amount.

The costs of training the additional teachers recruited through the increased bursary are also included as part of the additional costs of the policy. Under the three bursary scenarios the values of the bursary increases offered to all teachers are £4,950 for no prevailing bursary, £4,350 for a £9,800 prevailing bursary, and £3,450 for a £30,000 prevailing bursary.

ECRPs were also modelled using the same cost envelope. Similarly to the TSLR scheme this policy works through improving retention early on in a teacher's career when leaving rates are particularly high. We model the impact of a payment of £2,800, which is made each year over the first five years since qualification, regardless of subject taught or school taught in.

Figure 9: Bursaries increase numbers of teachers at entry but relative impact of TSLR improves over time



Source: NFER analysis

Figure 9 shows that after three years bursary increases have led to between 24 and 35 additional teacher-years over the three-year period depending on the level of prevailing bursary. This compares to only seven additional teacher-years due to a TSLR scheme and thirteen under a ECRP policy. The impact of bursary policies is considerably

larger than both ECRPs and the TSLR scheme in the shorter term. This is because bursaries work through increasing numbers of teachers at recruitment stage, thus providing an initial boost to teacher numbers entering the profession. The TSLR scheme or ECRPs do not have any impact in our modelling until the second year of teaching when the retention effect has kicked in.

A related observation is that the additional teachers in cohort due to bursary increases are all new teachers whereas policies improving retention increase numbers of more experienced teachers. We do not attempt to model any difference in quality of teaching that might result from an incentive that focuses on more experienced teachers as opposed to new teachers, but this is important to consider given the evidence that teachers with more experience tend to be more effective at raising pupil attainment (Podolsky, Kini and Darling-Hammond, 2019).

In the short to medium term, ECRPs have a larger impact than TSLRs in terms of additional teacher-years for one cohort, as the ECRP equates to a higher increase in average annual earnings than the TSLR scheme. With the same total cost, a TSLR scheme provides a lower payment per year spread over more years than the ECRP. Over the ten years of the policy (for one cohort) the TSLR scheme continues to improve retention rates and by 20 years since qualification the impact of ECRPs and the TSLR scheme in terms of additional teacher-years are very similar.

Over the whole teaching career of the cohort, the TSLR scheme has the third highest impact, delivering 113 additional teacher-years

compared to bursaries with no prevailing bursary (159 teacher-years) and bursaries with £9,800 prevailing bursary (139 teacher-years). Where the cumulative additional teacher-years are comparable, the average level of experience will be higher for those retained due to the TSLR scheme than ECRPs or bursaries as the impact is felt longer into a teacher career.

Figure 10 shows the cost per additional teacher-year under each policy. Costs are higher earlier on for bursaries as all the additional cost is paid during teacher training. Total additional costs per additional teacher-year are higher where the prevailing level of bursary is higher, as the prevailing bursary has to be paid to the additional teachers recruited.

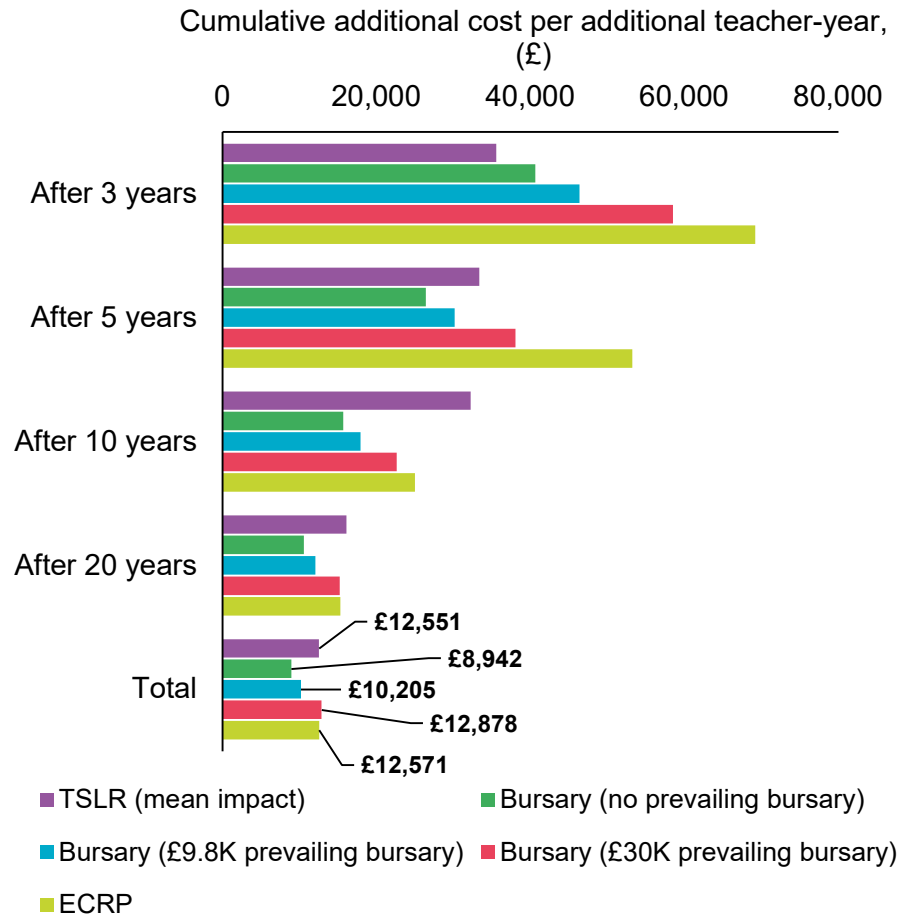
ECRPs have a higher upfront cost than the TSLR scheme as the value paid is higher than that paid through reimbursements but over five years rather than ten. After ten years the cost per additional teacher year reduces for ECRPs, falling below that of the TSLR scheme as payments are still being made under the TSLR scheme.

When considering the whole lifetime of a teaching cohort, the additional costs per additional teacher-year across all five policies are more comparable. Additional costs per additional teacher-year range from £8,900 for a large bursary increase (no prevailing bursary) to £12,900 for a low bursary increase (£30,000 prevailing bursary), with the TSLR scheme coming in near the middle at £12,500 per additional teacher-year.

This suggests that bursaries appear to offer the highest value for money where the existing bursary level is low. However, where the

prevailing bursary level is higher – especially approaching £30,000, as for current shortage subjects – bursaries, ECRPs and TSLRs appear to offer similar levels of value for money.

Figure 10: Lower costs for TSLR early on due to front loaded costs of bursaries and ECRPs



Source: NFER analysis

7. Discussion

7.1. Limitations of our analysis

One limitation of our analysis is that there is only one statistical study on the impact of a TSLR scheme, namely the internal DfE analysis on which we base our model (CFE Research, 2023). While all the estimates in the report suggest that the pilot TSLR scheme tends to reduce leaving rates, none of them are statistically significant which means we can't rule out the possibility that the TSLR had no impact.

As a teacher's years of experience (and therefore pay) increase, the proportion of a teacher's income paid in student loan repayments increases (provided their salary is above the threshold)¹². Therefore, reimbursements are lower in both absolute and proportional terms for those earlier on in their careers, when leaving rates for teachers are at their highest. This is not reflected in our modelling as the available evidence to date relates to the average effect of being eligible for the TSLR scheme in the first five years after qualifying. This implies that the impact of TSLRs could be larger than assumed here when applied to teachers in the first ten years after qualifying. Equally, teachers earlier in their careers could be more sensitive to an additional pound than those later in their career. In our analysis we have assumed the

impact to be constant across teachers at different stages of their career.

Furthermore, student loan reforms could mean that the future impact of a TSLR scheme is different to that estimated in the DfE analysis. The cohorts analysed in the DfE analysis all made repayments under Plan 2, while repayments on Plan 5 are higher, especially for middle earners due to the lower threshold (Bolton, 2022; Ogden and Waltmann, 2023). Lowering the threshold means higher repayments are made earlier on in graduate's careers, with the highest increases in repayments likely to be made between five and ten years after graduation (Bolton, 2021). Higher repayments mean higher reimbursements, so the future scheme could conceivably have a larger impact (and higher cost) than assumed here.

The costs considered in this analysis are solely those related to the reimbursed payments made to eligible teachers. There are additional costs associated with rolling out a TSLR scheme including start costs concerned with set up and marketing of the scheme. Some costs are ongoing such as those associated with running and administering the scheme. There is also an additional income tax paid by DfE on the reimbursements¹³. While this represents an inter-Governmental transfer rather than a cost for central Government, it is still a cost burden on the DfE's budget.

¹² Although the percentage you pay remains that same (9%), it is a higher proportion of your total income as salaries increase because you are paying the nine per cent on proportionally more of your earnings.

¹³ Reimbursements are paid through PAYE and are therefore taxable. The DfE pays the tax up to the basic rate and National Insurance due on reimbursements (DfE, 2019b).

7.2. Implications of a TSLR scheme

Our analysis suggests that in the long term a TSLR scheme could be a useful tool for policymakers in terms of improving teacher supply because it demonstrates a similar level of value for money to alternatives such as bursaries and ECRPs. It may be appealing for policymakers as it may have a strong emotive resonance with feelings associated with debt aversion, and therefore be very marketable. In this section we discuss some of the other potential benefits and drawbacks of a TSLR scheme and what these could mean for a future implementation of a TSLR scheme.

For an individual cohort, the impact and value for money of a TSLR scheme builds steadily over a longer time frame than bursaries and ECRPs, as retention rates are improved across the first ten years the policy applies. However, the policy could also have a significant short-term effect, as introducing a TSLR scheme would mean several cohorts being affected concurrently. Our modelling in Section 4 estimated an additional 2,100 teachers after one year if all teachers in their first ten years since qualification were eligible.

As a policy, a TSLR scheme remains a long-term commitment. For example, the scheme introduced in 2017 is scheduled to continue making payments to eligible cohorts until 2031/32. We have not modelled any impact of an ECRP policy or TSLR scheme on recruitment into ITT, as there is no evidence to provide insight as to whether such an effect may exist and, if so, how large. However, making a long-term commitment to either ECRPs or a TSLR scheme that future cohorts will be eligible for is likely to generate an additional

recruitment effect, providing an additional boost to teacher supply alongside the retention impacts described in this report.

Because there is no current way for the Government to pay the Student Loans Company directly instead of the teacher, the TSLR is a reimbursement for a student loan payment that has already been paid. This means that it is functionally equivalent to an ECRP. However, because it is linked to the student loan repayment, it is an ECRP without the same flexibility of ECRPs to vary the scope, coverage and level of payments in response to circumstances. This greater flexibility may mean that ECRPs are a preferred policy tool for policymakers.

The lack of TSLR flexibility extends to which teachers receive different levels of reimbursement. We have shown that under a TSLR scheme the reimbursement payments received by teachers vary by years of experience, gender and working patterns. New teachers are likely to be more responsive to financial inducements than more experienced teachers, yet TSLR payments are structured to pay lower amounts to new teachers and higher amounts to more experienced teachers. This is in contrast to ECRPs, where eligible teachers receive the same payment regardless of earnings and could conceivably be targeted differently at different levels of experience.

The lack of TSLR flexibility also introduces equality concerns, since average payments are higher for male teachers and lower for female teachers, especially after five years of experience. ECRPs are (and can be) structured to be the same payment to all eligible teachers regardless of gender, working pattern or seniority.

Similar to ECRPs, TSLR payments are made to eligible teachers who are working in state-sector schools. The conditionality provides an incentive for teachers to stay in state-sector schools, hence the positive retention impact found in the various impact analyses of these schemes. However, the Government does not currently seek to reclaim payments from teachers who subsequently leave the state sector. This further approach to hardening the incentives to stay has been suggested by NASBTT (NASBTT, 2024), arguing that ‘training should be paid for as long as teachers remain in state education’ and that ‘if they choose to leave to go into the private sector or somewhere else, the cost of training should be repayable’.

This potential approach could strengthen the incentives for teachers to stay in the state sector, particularly for experienced teachers who have received several reimbursement payments. However, reclaiming previous reimbursements could put the DfE in an awkward position of collecting debt from teachers, and with additional administration costs. Treatment of the teachers who subsequently return after leaving would also require careful thought. Many teachers who move out of the state sector move into education roles, and reclaiming reimbursement payments from them could seem a punishment despite continuing to contribute to the wider education sector. On balance, such a move would require very careful consideration given the implementation challenges.

8. Conclusions and recommendations

8.1. Conclusions

We estimate that introducing a TSLR scheme for all teachers within ten years of qualifying could lead to around 2,000 additional teachers after one year, at a cost of £245m. However, there is considerable uncertainty around this estimate. The impact estimates that this estimate is based on were not statistically significant, meaning the policy having no effect could not be ruled out. The impact study also estimated a range of impacts from different models, resulting in the possibility that the impact in the first year of implementation could vary between 800 and almost 3,000 additional teachers.

From the perspective of one single cohort, spending marginal government resource on TSLRs could have a similar impact to spending it on ECRPs and bursaries (especially where the latter is already high). The impact of bursaries on teacher supply is felt rapidly in the cohort's journey, as higher numbers of people decide to train to teach which is sustained in terms of increased supply. ECRPs and TSLRs have an impact later in a cohort's journey as they both affect retention rather than recruitment. However, all three do have considerable short-term impacts on teacher numbers as, unlike bursaries, ECRPs and a TSLR scheme have impacts across multiple cohorts simultaneously.

A related difference between the outcomes of the three incentives is that the additional teachers retained through a TSLR scheme will be more experienced on average than those retained through both

ECRPs and bursaries in the short term. Bursary increases attract additional trainees so additional teachers through this route will have the lowest level of experience. In the longer term, bursaries do increase the numbers of experienced teachers as the additional teachers attracted through the bursary increase more through their career.

In terms of value for money, our modelling shows that a TSLR scheme is comparable to the other financial incentives – namely bursaries and ECRPs – over the long term. The estimates of numbers of additional teacher-years due to implementing a TSLR scheme are sensitive to which estimate of impact from the previous evaluation is used.

The evidence presented here therefore suggests that a TSLR scheme could prove a cost-effective option for policymakers as part of range of policies to improve teacher supply. However, compared to ECRPs, a TSLR scheme lacks the flexibility to respond quickly to particular challenges.

Although a TSLR scheme is functionally very similar to an ECRP, one key difference is that under a TSLR scheme the size of the payment varies with earnings. The effect of this is that TSLR payments vary between different groups, such as women receiving considerably lower payments than men, particularly after the first few years after qualification.

8.2. Recommendations

Based on the analysis presented in this report, we recommend that:

- Government should carefully consider the merits of introducing a TSLR scheme as part of its teacher recruitment and retention strategy. Where bursaries are zero or low for subjects this is likely to be the most effective policy to implement. A TSLR scheme could be considered alongside ECRPs for those subjects or phases where bursaries are already high.
- Further analysis should be conducted of the 2017 pilot TSLR scheme's on-going impact on retention, to gain more information about the impact over the length of the policy, on teachers with more than ten years' experience and more precise estimates of impact now that data from more cohorts is available. Data from the pilot TSLR scheme could also be used to assess whether there is a differential impact of the scheme for teachers at different stages of their career.

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