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How to recruit 6,500 teachers?

Modelling the potential routes to delivering Labour's teacher supply pledge

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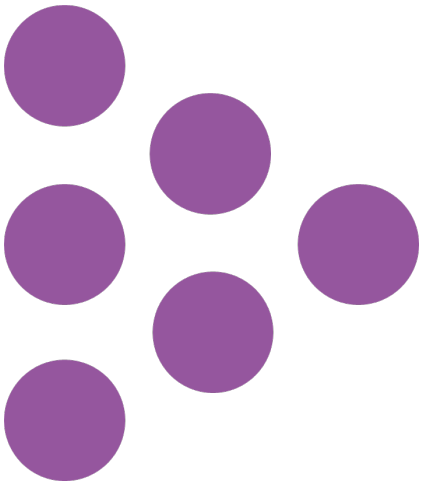

How to recruit 6,500 teachers? Modelling the potential routes to delivering Labour's teacher supply pledge

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Executive Summary

England is facing an increasing challenge of ensuring sufficient teacher supply in state-funded schools. The number of teachers recruited to postgraduate initial teacher training (ITT) has been lower than before the Covid-19 pandemic despite increased demand for teachers due to rising secondary pupil numbers. Recruitment has been substantially below the target numbers required. Teacher leaving rates have remained at a similarly high level to what they were before the pandemic. The challenge has been particularly intense in secondary subjects, and under-supply has been especially marked for physics, computing, maths and chemistry teachers.

The 2024 Labour party manifesto recognised the challenge of 'shortages of qualified teachers across the country' and pledged to 'recruit 6,500 new expert teachers in key subjects' (Labour Party, 2024). The manifesto stated that the party would 'get more teachers into shortage subjects, support areas that face recruitment challenges, and tackle retention issues', but does not set out a detailed definition of how this supply target would be measured or delivered.

The Government therefore faces a considerable challenge of meeting its teacher supply target and many choices about how to deliver. The analysis in this report explores some of these potential policy choices using NFER's teacher supply forecast and simulation model. We use the existing research evidence on the effectiveness of different policy levers to set out the feasibility and implications for meeting the 6,500-teacher target using a range of different delivery routes and estimate how much these might cost. We focus mostly on financial levers – such as pay, bursaries and ECRPs – given the high quality of the evidence about their costs and effectiveness. However, we also consider non-financial levers where some quantitative evidence is available. This research, funded by the Gatsby Foundation, aims to inform policymakers' thinking about the available options, by providing detailed analysis of the potential impacts from a range of policy levers and highlighting their costs.

Key findings

- How challenging the Government's target to 'recruit 6,500 teachers' is to achieve depends crucially on how it is defined. We adopt a working definition of the supply target for the analysis in this report: an increase in the number of secondary teachers, excluding PE and history, of 6,500 by 2027/28, plus meeting the primary recruitment target in 2027/28. **Under our working definition of the 6,500-teacher supply target, achieving it is ambitious and not trivial**.
- Our baseline scenario analysis, which assumes a business-as-usual set of financial policy measures and teachers' pay increasing at the same rate as average earnings, suggests that the target is highly unlikely to be met if there is no new policy action. **Achieving the supply target will require new policy measures that are additional to business-as-usual and add to what is already enacted**.
- **Many of the policy measures we explore would not be sufficient to meet the supply target in isolation, unless they were taken to unrealistic extremes**. Bursary increases alone would not be able to attract enough trainees to provide 6,500 additional teachers unless levels were raised above starting salaries. Early-career retention payments (ECRPs) and

broader retention payments could be used. However, to meet the target on their own would require significant expansion to most subjects and higher rates than currently, which could introduce distorted paths of teacher remuneration if not carefully designed. While the underlying evidence on impact is much weaker and more uncertain, our analysis suggests that reducing teachers' working hours by five hours per week would not be sufficient on its own to improve retention to meet the target. Similarly, while robust impact evidence is lacking, reintroducing funded national continuing professional development (CPD) programmes would not alone be enough to meet the target.

- **Achieving the supply target through pay increases alone is feasible but would require pay increases of nearly ten per cent per year. This scenario comes with the highest cost: £7.7bn per year from 2027/28 onwards**. This action would restore the relative position of teacher pay in the wider economy to where it was in 2010, a 'pay correction' that teacher unions have called for (ASCL *et al.*, 2024). Other scenarios that assume policy combinations to meet the target with significant contributions coming from pay increases are also associated with relatively high cost. The current tight fiscal environment may preclude such measures forming a significant part of an overall strategy.
- **Scenarios with lower costs are those that either rely on cost-effective spending on targeted measures aimed at shortage subjects, particularly bursaries and ECRPs, or on non-financial measures such as reducing workload or improving CPD**. However, pursuing these options that are lower in financial cost are not without risks for policymakers. Increasing the value of targeted bursaries and ECRPs would increase disparities in remuneration between subjects and could introduce material distortions in teachers' path of overall remuneration. Further, while we have assumed them to be financially costless, some non-financial measures such as workload reduction could either be associated with significant financial or non-financial costs (such as negative impacts on pupil outcomes).

Recommendations

1. **The Government should publish a comprehensive strategy for how it defines and plans to meet the 6,500-teacher supply target, with sufficient funding to deliver it**. The strategy should be based on a combination of funded policy measures, including non-financial measures such as reducing workload and investing in CPD, and further financial measures that are targeted at improving teacher supply in shortage subjects such as physics, chemistry, computing and maths. This could include a broader range of retention payments that cover all schools, apply to all teachers of particular subjects regardless of years of experience and with higher rates for teachers working in schools serving disadvantaged communities.
2. **The Government should invest in deepening the evidence base of interventions that can improve recruitment and retention**. While the quality of research evidence around bursaries and ECRPs is high and growing, there is less high-quality and quantifiable evidence about the impacts of, for example, workload and professional development. Evidence on the impacts and costs of a wide range of policy measures would enable better comparative assessments of the relative costs and impacts within a single analytical framework. Further, refining the impact estimates for different policies (for example, considering how teachers with different levels of experience or teaching in different types of schools respond to financial

incentives) would enable the development of more nuanced policy development and sophisticated scenario modelling. For example, the modelling in this report, and policymaking, could be expanded to treat each individual shortage subject separately to address the most acute shortages that exist in subjects like physics in a more tailored way compared to other shortage subjects.

1. Introduction

1.1. Background

1.1.1. Teacher recruitment and retention context

England is facing an increasing challenge of ensuring sufficient teacher supply in state-funded schools. The number of teachers recruited to postgraduate initial teacher training (ITT) has been lower than before the Covid-19 pandemic despite increased demand for teachers due to rising secondary pupil numbers. Recruitment has been substantially below the target numbers required. Teacher leaving rates have remained at a similarly high level to what they were before the pandemic.

The challenge has been particularly intense in secondary subjects, and under-supply has been especially marked for physics, computing, maths and chemistry teachers. Further under-supply of the specialist teachers required for a high-quality science, technology, engineering and maths (STEM) education in schools in England is a significant risk to education quality. There has been chronic under-recruitment and higher-than-average leaving rates for maths and science for many years, primarily due to STEM graduates having relatively attractive career options outside of teaching, compared to teachers of other subjects (Migration Advisory Committee, 2017; Worth and Van den Brande, 2019).

The deteriorating competitiveness of teacher pay in England is likely to be one significant factor affecting supply. Teacher pay has grown more slowly than average earnings in the wider economy, which the research evidence suggests is likely to have had a negative impact on recruitment and retention (Dolton and van der Klaauw, 1999; Hansen *et al.*, 2004; DfE, 2020; Worth, Tang and Galvis, 2022).

Subject-specific bursaries, with the highest values for maths and science subjects, have provided some level of remedy to the supply challenges. However, in recent years this has not been enough to ensure sufficient teacher supply. The evidence suggests that bursaries are effective at improving long-term supply, because they lead to higher recruitment to ITT and the additional teachers who enter the profession due to bursary increases are just as likely to then stay as those that entered for other reasons (McLean, Tang and Worth, 2023). Increasing supply of new teachers via bursaries does make the overall workforce less experienced, however, as compared to retaining existing teachers. Piloting of early career retention payments (ECRPs) for maths and physics teachers has shown promising evidence of being effective at increasing teacher retention in targeted STEM subjects (Sims and Benhenda, 2022).

However, non-financial factors are also important for determining the relative attractiveness of teaching and therefore influencing prospective teachers' decisions about whether to enter and existing teachers' decisions about whether to stay or leave. For example, high workload is an often-cited reason for why teachers leave the profession (DfE, 2017; Adams *et al.*, 2023). Reducing workload has been a policy objective for the Government since the 2014 Workload Challenge (DfE, 2015).

1.1.2. Policy context

The Government has had a focus on improving teacher recruitment and retention for many years, most notably following its 2019 teacher recruitment and retention strategy (DfE, 2019). Prior to the 2024 general election, the Government was in the process of refreshing its teacher recruitment and retention strategy. It had targeted a reduction in teacher working hours of five hours per week and established a workload reduction taskforce to support delivery of that ambition (DfE, 2024d).

The July 2024 general election returned a new Labour Government, which campaigned on addressing teacher supply and pledged in its manifesto to 'recruit 6,500 new expert teachers in key subjects'. The Labour party election manifesto committed to spending an additional £450m on delivering this, alongside £210m on increased teacher and headteacher training to support a new teacher training entitlement and ensure teachers stay up to date on best practice with CPD.

The Government's Budget on 30 October 2024 set out additional spending for the DfE to deliver the pledge to recruit 6,500 teachers, increasing the schools budget in 2025/26 by £2.3bn, from £61.6bn to £63.9bn (HM Treasury, 2024). Phase 2 of the Government's Spending Review will set departmental budgets for 2026/27 onwards in late spring 2025. Despite the increased spending on public services set out in the October Budget, the Government faces considerable public spending constraints, given competing demands and limited scope for increased tax revenues.

The Government is currently developing its plans for delivering the 6,500-teacher pledge, including by 'resetting the government's relationship with the sector and transforming the image of teaching' (DfE and Phillipson, 2024). It has a range of potential policy levers and actions at its disposal, including actions that could influence the financial and non-financial attractiveness of the teaching profession; either to enter, to stay in, or to return to. The Government has also set a remit for the School Teachers' Review Body to make recommendations on teachers' pay for 2025/26, with one of the areas of consideration being teacher recruitment and retention (Phillipson, 2024b).

1.2. Research aims

In this context, the Government faces a considerable challenge of meeting its teacher supply target and many choices about how to deliver. The analysis in this report explores some of these potential policy choices. We use the existing research evidence on the effectiveness of different policy levers to set out the feasibility and implications for meeting the 6,500-teacher target using a range of different delivery routes and estimate how much these might cost. We focus mostly on financial levers – such as pay, bursaries and ECRPs – given the high quality of the evidence about their costs and effectiveness. However, we also consider non-financial levers where some quantitative evidence is available.

This research, funded by the Gatsby Foundation, aims to inform policymakers' thinking about the available options, by providing detailed analysis of the potential impacts from a range of policy levers and highlighting their costs.

1.3. Structure of this report

Section 2 describes the forecast and simulation modelling methodology we use to estimate the impacts and costs, with a more detailed description provided in Appendix B. The section includes our rationale for a working definition of how to measure the 'recruit 6,500 teachers' target. Section 3 summarises the key findings from a range of policy scenarios and assesses their feasibility for delivering the 6,500-teacher target and implied costs. Section 4 concludes and makes some recommendations for policymakers.

2. Methodology

2.1. Defining the 6,500 new teachers target

2.1.1. Considerations

The 2024 Labour party manifesto recognised the challenge of 'shortages of qualified teachers across the country' and pledged to 'recruit 6,500 new expert teachers in key subjects' (Labour Party, 2024). The manifesto stated that the party would 'get more teachers into shortage subjects, support areas that face recruitment challenges, and tackle retention issues'.

The manifesto does not set out a detailed definition of how this delivery target would be measured. The Department for Education may publicly set out a definition in due course. In the absence of a defined target, we set out a definition that we believe is in the spirit of the pledge made by the Labour party, appropriately focussed on the key priorities set out in the manifesto and consistent with other statements made by Labour education frontbench politicians. We use this for the purposes of our analysis, but it is not intended to be a blueprint or recommendation for the Government's own target.

The wording of the pledge suggests that the target might only be conceived in terms of teacher recruitment. A narrow version of this interpretation could be recruitment to initial teacher training: for example, increasing the number of trainees per year by 6,500. In 2024/25, 27,000 trainees entered training, meaning this would require a 24 per cent increase. An alternative version would be increasing the number of teacher entrants to schools by 6,500. In 2023/24 there were 44,000 new entrants, meaning this would require a 15 per cent increase.

Both targets would be very ambitious, particularly if they were limited to 'key shortage subjects'[1]. Further, these definitions would limit the levers available to influence the measure to those that increase recruitment. Measures that improve retention would have no impact on these measures if they were the target. Bridget Phillipson has spoken of her belief that 'the best recruitment strategy is a strong retention strategy' (Bridget Phillipson, 2024). We do not therefore believe that the target should, nor is likely to be, based on a narrow definition focussed only on recruitment.

A measure defined on an increase in the number of teachers over a given time period (e.g. the length of the parliament) would provide scope for a wider range of policy levers to be considered in delivering it, making it more feasible to achieve. Further, the scale of such a target may be more realistic, since increasing the overall number of teachers by 6,500 from the current 470,000 would represent just a 1.4 per cent increase.

The manifesto recognises that the teacher recruitment and retention challenges are not equal across phases and subjects, adding the qualifier 'in key subjects'. This suggests that the target may not be focussed on the whole teaching workforce. For example, while an increase in the number of PE teachers would help meet such a target, it would do little to ease teacher shortages faced by schools since PE tends to systematically over-recruit to ITT. A narrower subject definition

[1] The illustrations in the previous paragraph are based on teacher recruitment to all phases and subjects. Narrowing the focus to certain subjects would mean the percentages that 6,500 teachers represent would be even higher.

would therefore make the target better fit the nature of the teacher supply challenge and more ambitious.

Relatedly, schools in disadvantaged areas are those that face the most acute recruitment and retention challenges, so arguably a target could include a focus on improving supply in the most disadvantaged schools (Allen, Mian and Sims, 2016; Sibieta, 2020). However, this would introduce considerable complexity. Also, there is some evidence that teacher supply improvements at the aggregate level disproportionately support supply in the most disadvantaged schools anyway, so an aggregate-level target could implicitly support this goal (McLean, Tang and Worth, 2023).

In November 2024, the Secretary of State announced that the additional 6,500 teachers will include 'teachers across our schools, both mainstream and specialist, and our colleges over the course of this parliament' (Phillipson, 2024a). Research has shown that there are significant supply challenges in some further education (FE) subjects (Flemons, McLean and Straw, 2024) and the Government has launched policy measures aimed at improving FE teacher retention (DfE, 2024b). However, FE, special schools and alternative provision are outside the scope of our simulation model, so we have not included it in the working definition for our analysis in this report.

On the timing of the target, as a manifesto commitment there is a clear political need to demonstrate the target having been met by the time of the next general election. The latest date for the next general election is July 2029, suggesting that any measure would realistically need to be met according to data from the 2027 School Workforce Census (expected publication in summer 2028). A target also requires a baseline year from which to define any subsequent change. An ideal baseline measure is one that has not been affected by any actions that the new Government brings in. Therefore, the 2024/25 academic year seems reasonable to use as a baseline, but the data has not yet been published (expected publication in summer 2025).

Finally, while setting a target focussed on teacher supply is appropriate given the nature of the challenges, consideration of the evolution of overall teacher demand (the total number of teachers the system requires, irrespective of subject shortages) is also important. Setting a target for more teachers even though, all else equal, fewer might be required given the evolution in the number of pupils could be inappropriate (although it could still reflect a desire to fill in for previous under-recruitment and emerging subject-specific shortages). For example, primary pupil numbers are expected to fall by 135,000 between 2024/25 and 2027/28, a fall of 3.6 per cent. DfE's assumption about how teacher demand changes in response to pupil numbers implies that around 3,500 fewer primary teachers would be required in 2027/28, compared to 2024/25. This introduces complexities to a teacher supply target's definition, such as whether the target should be adjusted to take account of this expected demand change. However, in contrast, secondary pupil numbers are forecast to be very close to flat over the period, implying there are no such demand complications for secondary teacher numbers. Despite demand not growing due to pupil numbers, there remains a considerable need for new teachers to replace teachers who leave and a commensurate need to reduce the numbers leaving.

2.1.2. Working definition for this research

Given the above considerations, we define our working definition of the target as the requirement to meet both of the following two objectives:

- The number of secondary teachers of all subjects except for PE and history[2] in 2027/28 is 6,500 higher than the number in 2024/25.
- Recruitment of postgraduate trainees to primary ITT courses in 2027/28 meets the target.

This target definition ensures that our measure:

- can be influenced by policy actions focussed on both recruitment and retention
- is based primarily on secondary teacher supply, so eliminating the need to account for the complexity of primary pupil number changes,
- recognises the need to not lose sight of ensuring primary supply is sufficient
- does not reward further oversupply of non-shortage subjects PE and history.

2.2. NFER teacher supply simulation and forecasting model

2.2.1. About the model

The analysis in this report is derived from a forecast and simulation model developed by NFER to assess the overall costs and teacher supply impacts of different pay and financial incentive options. The model is based on the most recent data on the recruitment of teachers to postgraduate ITT and associated targets, the salary structure of the teaching workforce and the numbers of teachers at each pay point and their respective rates of leaving the state-funded sector. The model also uses currently available policy information on bursaries and teacher retention payments. To account for the expected evolution of the wider economic environment, the model uses the most recent economic forecasts produced by the Office for Budget Responsibility (OBR), which for this report is the October 2024 forecast (Office for Budget Responsibility, 2024). It is worth noting that should these forecasts change this would have an impact on the teacher supply forecasts presented in this report.

The model incorporates the above input information as well as policy scenarios defined by the model user. These inputs are combined with parameters – estimates of how responsive teacher recruitment and retention behaviour is to changes in various key factors, derived from the research literature – to calculate forecasts. The model makes four sets of calculations, as follows:

Recruitment: ITT recruitment is baselined on the number of trainees expected to start ITT courses in 2023/24, predicted using the latest data on ITT applications up to September 2024 and a combination of historic ITT enrolment and applications data. The model makes a forecast, based on the evidence-based assumption that recruitment rises with increases in the unemployment rate, rises with increases in the subject's bursary, and rises with increases in average pay on the main teacher pay scale relative to the change in average earnings (Worth, Tang and Galvis, 2022).

Retention: Teacher leaving rates are baselined on rates of leaving the state-sector in 2018/19, the most recent available data unaffected by the pandemic, so that the model does not use the atypical

[2] We exclude PE and history because historically these subjects have not experienced shortages, due to regularly meeting or exceeding the respective recruitment targets.

retention rates seen during the Covid-19 pandemic in 2019/20 and 2020/21 as a baseline. Using a similar approach to that outlined in modelling carried out by DfE (2020) the model assumes that the leaving rate falls in proportion to increases in teacher pay relative to the change in average earnings. Based on Sims and Benhenda (2022) and DfE (2022), the model assumes that teachers on the first five points of the main pay scale are more responsive to pay changes than more experienced teachers. ECRPs are assumed to affect retention in the same way as pay and are included additively along with pay.

Costs: The model uses teacher salary data from the School Workforce Census in 2021/22 to calculate the total salary cost. Salaries at each pay point are uprated with the increases assumed by the policy scenario under consideration in the model. The model calculates the aggregate costs using the number of teachers at those pay points in the 2021/22 academic year. The model also includes estimates of employer national insurance and pension contributions to provide a realistic assessment of the total cost of policy changes to the Exchequer. Separately, the model also calculates the aggregate cost of bursaries and ECRPs.

Recruitment targets: the model uses the method set out in the DfE's 'Calculation of 2024 to 2025 PGITT targets' spreadsheet, taken from the DfE's Teacher Workforce Model, to calculate targets. The targets for the 2024/25 academic year are taken as published by DfE. The model uses the DfE method to make further forecasts of targets in future years, accounting for changes in pupil numbers (which affect teacher demand), future retention rates (derived from the Retention calculations mentioned above, which affect teacher demand) and future ITT recruitment (derived from the recruitment calculations mentioned above, which affect teacher supply). Minor adjustments have been made to the method, which is designed to calculate short-term targets, to be more appropriate for forecasting long-term targets.

The key teacher output from the model is forecasts of teacher supply (i.e. the number of teachers for each phase and subject employed in schools, as calculated in the target-setting method). We also use forecasts of ITT recruitment for each subject relative to its respective forecasted target. The forecast model also calculates outputs on salaries, costs, retention rates and the gender pay gap.

2.2.2. Model limitations

There are some limitations to the forecasting model that are worth noting here. The model is designed to enable comparisons between different policy options. The model does this by providing estimates of likely costs and impacts of different policy options on teacher supply through changes to recruitment levels and/or leaving rates. It is a simplified representation of how the mechanisms used in teacher supply operate in the real world and should therefore be used to make comparisons rather than as a tool to make precise predictions of future teacher numbers.

Relatedly, there is also uncertainty inherent in the forecasts. While the parameters we use to assess the likely impact of different policies on teacher recruitment and retention are supported by the evidence, they do not give a precise and mechanistic guide to what will happen. In this vein, it is important to appreciate that there is a range of potential outcomes associated with each forecast.

The model is based on national-level estimates of supply and demand, so does not account for regional supply or any disproportionate impacts of under-supply on types of school. Schools with high proportions of pupils eligible for free school meals tend to find recruitment and retention more challenging, but this is not featured in the modelling.

A final limitation to note here is the exclusion of further education and special schools in the model and analysis as specific categories of teacher (although we do include the salary costs of teachers in special schools). The model is based on the DfE's Teacher Workforce Model, which is based on estimating the supply of primary plus 18 secondary subjects. The important question around whether special schools and further education have adequate numbers of teachers is therefore beyond the scope of this analysis.

2.3. Analysis approach

Our scenario analysis aims to explore the potential role of a range of different policy levers for meeting the 6,500-teacher target. We frame our analysis around an initial 'baseline' scenario, which approximates a business-as-usual strategy with no regard to the policy target. We begin our simulation analysis by considering each lever in turn, exploring whether using a particular lever could feasibly meet the target, and if so, what magnitude of policy change would be needed to deliver it and how much would that cost. We consider levers such as pay increases, bursary increases, ECRP policy changes, workload reduction and increases to funded professional development provision.

3. Findings

3.1. Baseline scenario

We frame our simulation analysis of the impacts of different levers by first setting out a baseline scenario. The baseline is a forecast of how progress towards meeting the 6,500-teacher supply target may evolve over the next three years according to a business-as-usual policy scenario. The baseline scenario assumes that policy measures remain unchanged from what they are in 2024/25, including the bursaries for those enrolling in ITT in 2024/25. As is the case under existing policy, the proportion of total spend on measures that are targeted at shortages subjects (i.e., bursaries and ECRPs) remains low as a proportion of the total spend, at 1.2 per cent[3].

We assume that teacher pay rises at the same rate as the forecasted growth in average earnings in the wider economy, thereby maintaining the current level of competitiveness over time. The OBR forecasts that average earnings will rise by three per cent in 2025/26, 2.1 per cent in 2026/27 and two per cent in 2027/28. As shown in Table 1, this implies that additional school funding of £1.4bn in 2025/26, £2.1bn in 2026/27 and £2.7bn in 2027/28 would be required in the Spending Review just for maintaining competitiveness under the baseline scenario. This does not include any additional funding for meeting the 6,500-teacher target.

The model forecasts that under the baseline scenario secondary teacher supply would remain a challenge. As shown in Table 1, the number of teachers remains close to flat, in line with the change in pupil numbers overall, with 50 fewer secondary teachers (excluding PE and history) in 2027/28. However, underneath that flat picture is considerable variation by subject. Only 7 out of 17 subjects are forecasted to meet their recruitment target in 2027/28, with continued under-supply leading to the overall number of physics teachers falling steadily, along with the number of chemistry, modern foreign languages, computing and design & technology teachers. This is somewhat offset by increases in the number of English, biology, geography, religious education and maths teachers.

Overall, the policy target is a long way from being met under the baseline scenario. The number of secondary teachers is close to unchanged, well short of the 6,500 target, while recruitment to postgraduate primary is below target. This scenario underlines the importance of the Government formulating a strategy of additional policy action for achieving the policy target, as relying solely on the existing policy mix is unlikely to deliver it.

[3] This equates to estimated bursary spending of around £220m and ECRP spending of around £70m, out of a total spend (on teacher pay (not including on-costs), teacher training, bursaries and retention payments).of around £33-35bn.

Table 1 Teacher supply falls under the baseline scenario

	2025/26	2026/27	2027/28
Details of modelled scenario	Baseline scenario: Assumes bursaries are as set in the 2024/25 academic year, teacher pay rises each year at the same rate as average earnings and other policy remains unchanged.		
Change in number of secondary teachers (excl. PE and history), compared to 2024/25	-127	-63	-50
Primary target met?	No	No	No
Total cost (£bn)	33.3	33.9	34.5
Additional annual cost (£bn)	+1.4	+2.1	+2.7
Proportion of total spend on targeted measures	1.2%	1.2%	1.2%

3.2. Pay scenario

The first policy lever we explore is teacher pay. In this scenario we ask how much would pay need to increase each year to meet the 6,500 additional teachers target. In this scenario, bursaries are updated to the levels announced in October 2024 for 2025/26 (DfE, 2024a).

As shown in Table 2, our analysis suggests that a pay increase of 9.55 per cent in each of the three years from 2025/26 to 2027/28 would be sufficient to achieve an increase in our target measure of 6,500 by 2027/28. The model also suggests that the primary recruitment target would be met.

Relying solely on pay increases is expensive. The cost is £2.1bn more than the baseline scenario in 2025/26, rising to £7.7bn in 2027/28 and beyond. A small amount of this total value (£131m) is due to knock-on effects to more spending on bursaries. By 2027/28, this pay increase would close the gap that has opened up between the lower growth rate of teacher pay since 2010/11 compared to average earnings. In other words, it would restore the relative position of teacher pay in the wider economy to where it was in 2010. Teacher unions have called for such a ‘pay correction’ (ASCL *et al.*, 2024).

Improving retention is the main mechanism through which increasing pay works to improve teacher supply in our model. Increasing pay relative to pay in the broader economy also increases recruitment to ITT, but this has a smaller impact due to only one cohort per year feeling the impact of the change. Although using only pay increases to reach the target is costly, it does reduce the number of subjects below target significantly, with only three subjects below target in 2027/28 (physics, business studies and the group of ‘other’ subjects). It also results in a more experienced workforce than increasing bursaries, for example.

Table 2 A large increase in teacher pay would be required to meet the target and would come with a very high cost

	2025/26	2026/27	2027/28
Details of modelled scenario	Pay scenario: Increase teacher pay by 9.55% for all teachers each year from 2025/26 to 2027/28. Bursaries held constant at 2025/26 amounts for each year from 2025/26 – 2027/28.		
Change in number of secondary teachers (excl. PE and history), compared to 2024/25	-127	1,933	6,513
Primary target met?	Yes	Yes	Yes
Additional cost compared to baseline scenario (£bn)	+2.1	+4.9	+7.7
Proportion of total spend on targeted measures	1.2%	1.2%	1.2%

3.3. Bursaries and ECRPs scenarios

3.3.1. Bursaries

As described in Section 2, increasing bursaries is a highly cost-effective lever for improving teacher supply (McLean, Tang and Worth, 2023; Tang and Worth, 2024). In this first scenario, we explore the costs and impact of increasing bursaries for all subjects except for history and PE for 2026/27 and 2027/28 until the bursary levels are just below the teacher starting salary[4]. While there is no particular limit on bursary values, this limit was chosen to avoid teachers effectively taking a pay cut as they move from training to employment. It is also consistent with recent Government policy of raising the highest bursary and scholarship values in line with increases to the starting salary. Bursary values for 2025/26 were set by the new government in October 2024, with some small changes from the previous year. The most significant change was the reduction of the English bursary from £10,000 to £5,000 (DfE, 2024a). Pay and other policies are as defined in the baseline scenario.

Table 3 shows that using bursary increases alone is not sufficient to achieve the target number of teachers within the required timeframe, as teacher supply only increases by around 2,500 by 2027/28. In part this is due to the changes in bursaries made in this scenario only having one year to have an impact before 2027/28. This underlines the importance of a time horizon that lasts several years for achieving the target, as all policy measures have a time lag to their effects.

As suggested by the evidence of the policy's high cost effectiveness, the cost of achieving this increase in teachers is relatively low, at just £600m per year. Therefore, bursary increases could play an effective role as a component in a wider strategy aimed at delivering the target. However, since the bursaries for key shortage subjects such as physics, chemistry, computing and maths are already just below the starting salary, there is limited scope for bursary increases to improve supply in these subjects. This is reflected in the scenario, where the 2,500-teacher increase comes

[4] For the 'rest of England' pay area.

primarily from increases in the supply of other subjects such as English, art and design, religious education, biology and modern foreign languages.

Setting a maximum limit for bursary values at the starting salary for the highest value is somewhat arbitrary, particularly given that when combined with ECRPs, *de facto* salaries for teachers in eligible schools are higher in shortage subjects. Removing this limit would allow higher bursary levels for key shortage subjects, enabling bursaries to boost teacher supply in a more targeted way. It is possible to design and model a policy that responds to subject-specific shortages in an even more tailored way (e.g. setting different payment levels in each subject), but we follow the DfE's current policy approach of having a common rate and subjects either being eligible for particular financial incentives or not.

Table 3 Bursary increases alone are not sufficient to achieve the target

	2025/26	2026/27	2027/28
Details of modelled scenario	Bursaries-only scenario: Increase bursaries from 2026/27 to just under the starting salary for all subjects other than history and PE and increase primary bursary until primary target met in 2027/28.		
Change in number of secondary teachers (excl. PE and history), compared to 2024/25	-127	-146	2,535
Primary target met?	No	No	Yes
Additional cost compared to baseline scenario (£bn)	0.0	+0.6	+0.6
Proportion of total spend on targeted measures	1.2%	2.8%	2.9%

3.3.2. Early career retention payments (ECRPs)

As described in Section 2, ECRPs also have strong evidence of positive impact on retention (Sims and Benhenda, 2022; CFE Research and FFT Education Datalab, 2023) and high cost-effectiveness as a lever for improving teacher supply (McLean, Tang and Worth, 2023; Tang and Worth, 2024). In this section, we explore the costs and impact of scenarios that increase the spend on ECRPs in various ways, including increasing the payment value for currently-eligible subjects, expanding the eligible subjects and combinations of both. The impact of ECRPs on teacher supply is modelled through their effect on retention. There may also be a small recruitment effect if the ECRP values are high and guaranteed for a coming years, but there is little existing evidence for this so we have not included one in our model.

We first modelled an ECRP scheme where payments are available for ECTs teaching currently-eligible subjects in all schools[5]. In this scenario we increase the payment value to £15,000 per year for all teachers teaching chemistry, computing, mathematics and physics (the subjects currently eligible) in their first five years since qualification. This value is around half the starting salary for

[5] In the current TRIP scheme, teachers working in schools located in Education Investment Areas are entitled to a larger payment (DfE, 2024c).

teachers, so it may be unlikely to be implemented in practice. However, it provides a useful insight as to the scale of impact ECRPs could have on the overall target within the list of currently-eligible subjects.

As shown in Table 4, even when ECRPs are increased to this very high level, the 6,500 target is still a long way off with only around 2,600 additional teachers achieved by 2027/28. However, the additional teachers who have been retained are in the key shortage subjects with three of the four subjects reaching their targets in 2027/28 (compared to the baseline where none of these subjects achieved their target). Physics achieves 30 per cent of its target by 2027/28 which is a marked improvement compared the baseline scenario (17 per cent). The primary recruitment target is also not met in this scenario, so additional measures would be needed to address this, such as an increase in the primary bursary. As suggested by ECRPs' high level of cost effectiveness and despite the high value of the payments, the overall cost of doing this is relatively modest compared to the pay increases explored above, costing around £300m per year.

Table 4 Increasing the value of ECRPs to £15,000 per teacher for currently-eligible subjects would not be enough to meet the target

	2025/26	2026/27	2027/28
Details of modelled scenario	ECRPs scenario 1: • Increase ECRP amounts to £15k for all teachers in their first five years, for subjects that are currently eligible.		
Change in number of secondary teachers (excl. PE and history), compared to 2024/25	-127	1,342	2,625
Primary target met?	No	No	No
Additional cost compared to baseline scenario (£bn)	+0.3	+0.3	+0.3
Proportion of total spend on targeted measures	2.7%	2.6%	2.6%

Given the list of subjects that are eligible for ECRPs is currently narrow, expanding the list could provide the broader base that is required to meet the target. We explore the impact of expanding the range of subjects that teachers are eligible for ECRPs to all those subjects that currently attract bursaries[6], but keeping the value of the payment at current levels (£6,000 for those teaching in the most deprived schools, reducing to no additional payment for those in the least deprived schools)[7]. To further increase the coverage and impact of the ECRP, we also increase the payment values for schools that are not in Education Investment Areas (EIA) to the applicable rate for schools that are in EIAs. Bursaries remain as they are for 2025/26 other than for primary trainees where the bursary is increased for 2026/27 until the primary target is met.

[6] This is all subjects other than history, drama, business studies, PE and other.
[7] We apply the higher amounts currently for those teaching in schools in Education Investment Areas to teachers in all schools.

Table 5 shows that expanding the eligibility to a wider range of subjects and increasing payment rates in non-EIA schools also has a relatively modest combined impact on teacher numbers. The overall teacher supply target of 6,500 additional teachers is also not met. This further demonstrates that while increases in ECRPs through increases in payment generosity or expanded subject eligibility could deliver cost effective increases to teacher supply, these would not be sufficient on their own to meet the 6,500 teacher target.

Table 5 Expanding the subjects that are eligible for ECRPs at current values would not be enough to meet the target

	2025/26	2026/27	2027/28
Details of modelled scenario	ECRPs scenario 2: • Expand the number of eligible subjects to all subjects that are eligible for bursaries in 2025/26. • Retain ECRP values of £6k, £5k, £4k or £0k, depending on area and level of deprivation in school • Increase primary bursary to reach target (£13.5K for 2026/27 and 2027/28)		
Change in number of secondary teachers (excl. PE and history), compared to 2024/25	-127	849	1,668
Primary target met?	No	No	Yes
Additional cost compared to baseline scenario (£bn)	+0.1	+0.4	+0.4
Proportion of total spend on targeted measures	1.8%	2.3%	2.3%

Finally for this section, we explore the impact of a combined approach of both increasing the ECRP value of the payment and expanding the list of eligible subjects. Using the expanded list of subjects, we explore what changes in payment generosity would be required to meet the target. The primary bursary is increased in 2025/26 until the primary target is met.

Table 6 shows that a combined ECRP scenario of payments varying between £11,000 (for teachers in the least deprived schools) and £13,000 (for teachers in the most deprived schools) for teachers of all subjects that receive a bursary that are in their first five years since qualification is sufficient to reach the supply target. This is achieved through reducing the leaving rate of secondary teachers to eight per cent (from nearly ten per cent under the baseline scenario). The cost of this policy is around £800m, which is modest relative to the pay scenario.

However, the high value of the retention payments would mean it could have a distorting impact on the total remuneration teachers receive through their careers, including creating a sharp drop in remuneration after year five. Using ECRPs as a policy on its own may be inferior to using it in complementary ways to other policy levers, such as pay.

Table 6 It is possible to reach target by expanding the number of eligible subjects and vastly increasing the value of ECRPs

	2025/26	2026/27	2027/28
Details of modelled scenario	ECRPs scenario 3: • Expand ECRP eligibility to all subjects that are eligible for bursaries in 2025/26 • Increase ECRP amounts to meet the supply target (£13k for highest FSM, £11K for lowest) • Increase primary bursary to reach target (£13.5K for 2026/27 and 2027/28)		
Change in number of secondary teachers (excl. PE and history), compared to 2024/25	-127	3,471	6,537
Primary target met?	No	No	Yes
Additional cost compared to baseline scenario (£bn)	+0.6	+0.8	+0.8
Proportion of total spend on targeted measures	3.7%	4.1%	4.1%

3.4. Broader retention payments and subject-differentiated pay

3.4.1. Retention payments

One of the limiting factors explored in the previous section is that the number of teachers in their first five years since qualification is a relatively small proportion of all teachers, at around 30 per cent. Therefore, using ECRP increases as a policy lever means the payment values and/or eligibility criteria have to be pushed hard to achieve the overall 6,500-teacher target. Indeed, it could create some sharp changes in total remuneration for teachers through their careers, particularly at the five-year point.

Another approach would be to introduce retention payments that have a broader base, being also paid to experienced teachers of eligible subjects and improving their retention rates too. We explore one such scenario in Table 7, which combines an expansion of ECRP eligibility to all subjects that currently have a bursary, an increase in payments to teachers in their first five years to between £6,000 and £12,000 and introducing a new retention payment for experienced teachers in those subjects of between £3,000 and £8,000.

The teacher supply target is met in this scenario, supported by an uplift in the primary training bursary. This scenario has a total cost of £1.3bn per year compared to the baseline scenario, which is higher than the scenario that focussed only on payments to early-career teachers, but far less than the pay scenario. All of the additional spend in this is scenario is on subject-targeted policy measures, meaning that the proportion of total spend on targeted measures rises to 5.9 per cent, compared to 1.2 per cent in the baseline scenario.

Table 7 Introducing retention payments for all teachers of shortage subjects is more expensive than targeting at early-career teachers, but less expensive than using pay as a lever

	2025/26	2026/27	2027/28
Details of modelled scenario	Subject-specific retention payments scenario: ECRPs for all teachers in all subjects eligible for bursaries in 2025/26, with higher payments for teachers in their first five years. • Teachers in their first five years: £12k for highest FSM, £6k for lowest FSM • Experienced teachers: £8k for highest FSM, £3k for lowest FSM • Increase primary bursary to meet target		
Change in number of secondary teachers (excl. PE and history), compared to 2024/25	-127	3,458	6,510
Primary target met?	No	No	Yes
Additional cost compared to baseline scenario (£bn)	+1.1	+1.3	+1.3
Proportion of total spend on targeted measures	5.5%	5.9%	5.9%

3.4.2. Subject-differentiated pay

The scenario described above in Table 7 can be framed as an expansion of ECRPs to a broader retention payment. However, it can also be framed as a form of subject-differentiated pay, since it provides a salary supplement to all teachers of some subjects compared to others. Economic theory suggests that where there are subjects with persistently too few teachers, pay (or other renumeration) that is targeted at those teaching these subjects should be increased. In England there is an identical main pay structure for all teachers regardless of phase of teaching or subject taught. However as described in Section 2, there are large differences in teacher shortages between different subjects with some subjects, namely PE and history, consistently meeting their recruitment targets (signalling adequate supply) and others, such as physics and computing, consistently missing their targets (signalling teacher shortages). Currently, bursaries and the subject eligibility criteria for ECRPs are the only financial incentives that are subject specific.

The 2024 School Teachers' Review Body (STRB) report set out a framework for considering the possible approaches for introducing more targeted subject-specific remuneration. The guiding principles were for new interventions to ideally be easy to implement, transparent, fair and reasonable, coherent with the existing pay framework, efficient and long term. Some of the possible subject-specific remuneration interventions explored included salary changes, ECRPs, retention payments or student loan reimbursement schemes.

Permanent salary increases for shortage subjects might appear the most direct option and one which fulfils several of the principles such as longevity and transparency. However, the key challenges of making payments through schools are introducing complexity to schools' pay

frameworks and the perceived unfairness of schools paying teachers who have similar levels of experience different amounts. It also may not be the most efficient as it lacks flexibility to respond to changes in teacher shortages and therefore could lead to an inefficient distribution of resources.

Another potential policy to improve teacher supply is a teacher student loan reimbursement scheme whereby an eligible teacher has their student loan payments from the previous year reimbursed provided they are still teaching in the state system. Recent NFER analysis modelled the likely impact of introducing such as scheme and found that although it appears as effective as early career retention payments it lacks flexibility (Tang and Worth, 2024).

Retention payments, as explored in the section above, may be the most suitable lever fulfilling the STRB's principles. This is because they would be easy to implement using the existing ECRP mechanism, transparent and evidence-based. Crucially, it does not rely on payments being made through changes to schools' pay frameworks. This ensures the existing framework's simplicity and coherence is retained. It also avoids introducing the perceived unfairness of *schools* paying teachers of different experience levels different amounts, although total remuneration would be different due to the Government making direct supplementary payments. The existing ECRP mechanism also allows flexibility for policy makers to adjust amounts responding to teacher shortage changes in specific subjects, to increase efficiency. However, this feature could also make it less stable over the long term if there are regular changes.

Given the greater cost-effectiveness of ECRPs and retention payments relative to blanket pay increases, the Government should explore how expansions to retention payment schemes could play a significant part in delivering the 6,500-teacher target, while complementing rather than distorting the existing pay framework.

3.5. Non-financial measures

Government and schools also have a range of ways to potentially improve teacher retention through non-financial policy levers and actions. These could include reducing teacher workload, increasing teachers' sense of autonomy and agency, improving the availability of flexible working and increasing access to high-quality professional development.

The evidence is clear that these factors matter for retention, but many lack quantitative evidence of the likely impact of measurable changes on retention and their cost. We focus our scenario modelling on two factors where there is some available evidence on cost and impact on leaving rates, namely reducing workload and improving CPD.

3.5.1. Reducing workload

Teachers report working a high number of hours per week on average (52.4 for full-time teachers) and 73 per cent of teachers reported having an unacceptable workload (IFF Research, IOE, and UCL's Faculty of Education and Society, 2024). Workload is a key reason teachers leave the profession (Perryman and Calvert, 2019), so reducing workload should have some impact on leaving rates.

In these scenarios we model the potential impact of policies aimed at reducing workload for teachers. Tentative correlational evidence suggests that if teachers' working hours were reduced by five hours per week, this could lead to a reduction in the leaving rate of 1.25pp (see Appendix A

for details). In September, the previous Government set out a target for reducing workload by five hours per week within three years (DfE and Nick Gibb, 2023).

We model the potential impact in two different ways. First, we model the impact of an immediate step change adjustment of a five-hour reduction in 2025/26. Second, we model a more gradual reduction over three years. The second scenario is more realistic and in line with the previous Government's target. However, as shown in the two panels in Table 8, even the first scenario that sees a dramatic reduction in leaving rates does not deliver the 6,500-teacher target on its own, only reaching around 4,000 additional teachers by 2027/28. The second scenario of a gradual reduction in working hours delivers an increase of around 2,500 teachers by 2027/28.

Both scenarios are assumed to incur no additional cost compared to the baseline scenario. This is in part because there is no defined mechanism for reducing workload and therefore uncertainty over how much it might cost. Workload reduction could incur cost, depending on how it is implemented, and the costs could be financial and/or non-financial. For example, schools reforming their marking or planning policies to reduce the time teachers spend marking or planning could be financially costless but have knock-on implications for pupil outcomes (depending on how they are implemented). In contrast, reducing teachers' teaching load would require additional staff to backfill (very challenging when recruitment and retention is so challenging) and incur additional costs.

There is also uncertainty about whether a large reduction in workload is even feasible. Data from the Labour Force Survey suggests that, following Government reports aimed to encouraging schools to reduce workload in planning, marking and data management, teachers' working hours fell by 1.6 hours between 2016 and 2019 (see Appendix A). The actions required to reduce workload by five hours per week may need to be much greater. For example, significantly reducing the demands on schools and teachers from the accountability system could have positive impacts on teachers' working hours, but this might also influence pupil outcomes negatively. Policymakers will have to carefully weigh the workload impact of any changes with the wider implications and costs they might lead to.

Table 8 Reducing teacher workload could lead to a significant increase in teacher supply, but may not lead to the supply target being met on its own

	2025/26	2026/27	2027/28
Details of modelled scenario	Workload scenario 1: leaving rates fall by 1.25pp in 2025/26 and are sustained at lower levels		
Change in number of secondary teachers (excl. PE and history), compared to 2024/25	-127	2,032	3,947
Primary target met?	Yes	Yes	Yes
Additional cost compared to baseline scenario (£bn)	0	0	0

	2025/26	2026/27	2027/28
Details of modelled scenario	Workload scenario 2: leaving rates fall by 0.5 pp in 2025/26 and 2026/27 and 0.25pp in 2027/28.		
Change in number of secondary teachers (excl. PE and history), compared to 2024/25	-127	725	2,323
Primary target met?	No	Yes	Yes
Additional cost compared to baseline scenario (£bn)	0	0	0

3.5.2. Improving professional development

In theory, there should be a link from participating in CPD to increased confidence and, in turn, to improved retention. Coldwell (2017) makes the case that professional development could increase teachers' confidence and self-efficacy, and therefore the likelihood they remain in their school and/or the profession. However, the empirical evidence on the relationship between CPD and retention from evaluations of CPD programmes is limited (Fletcher-Wood and Zuccollo, 2020).

What little empirical evidence there is suggests that high-quality external courses may substantially improve retention (Allen and Sims, 2017). However, teacher surveys suggest that teachers do not place a high value on the CPD that they currently experience, perhaps due to its lack of relevance to teachers' current practice and personal development goals (Lynch *et al.*, 2016; Worth and Van den Brande, 2020; Burge, Lu and Phillips, 2021). Therefore, expanding the time teachers spend on CPD without improving its quality and/ or relevance to teachers' practice may be unlikely to lead to increases in retention.

We explore the potential cost and impact of expanding Government investment in CPD through directly funding and commissioning courses from external providers. Allen and Sims (2017) – using department-level analysis rather than individual-level, which is likely to be more robust to the threat of selection bias – found that the teacher leaving rate was considerably lower in science departments that had at least one of its teachers attending a CPD course. The analysis suggests that CPD attendance was associated with a four percentage point reduction in the annual leaving

rate, which would equate to reducing the overall leaving rate from around ten per cent to around six per cent. Another study by NFER and Sheffield Institute of Education found that participating in professional development was associated with a higher retention rate compared to otherwise similar non-participants, equating to the overall leaving rate reducing from around ten per cent to around seven per cent (Straw *et al.*, 2022). However, the latter estimated effects on direct participants are likely to overstate the true effect, because there is likely to have been selection bias that the analysis was not able to account for.

Not all teachers would be affected by a funded CPD programme. The rollout of National Professional Qualifications from 2021 saw an average of 6.3 per cent of teachers per year participating. These estimates suggest that the impact of a similar programme could be around a 0.25 percentage point per year reduction in leaving rates[8]. The cost of NPQs was estimated by DfE at the policy outset to be around £1,200 per course (DfE and Walker, 2021)[9]. After adjusting for subsequent inflation and multiplying by the number of teachers that might participate, the cost is approximately £40m per year.

As shown in Table 9, the impact on teacher numbers of this impact is modest as the retention improvement is relatively small. This policy measure does not, on its own in our scenario, meet the 6,500-teacher target. However, the cost is very modest relative to the scale of the benefit, suggesting that measures to improve professional development could bring cost effective benefits to teacher supply. Further, it suggests that improving high-quality, funded professional development opportunities could form an effective part of an overall strategy in combination with other measures.

However, these estimates of impact and cost are highly uncertain due to the low quality of the underlying evidence base. If the amount of time dedicated to teachers' CPD is expanded, but the additional provision is low quality and/or not perceived as relevant to teachers' own practice, then there is a risk that the CPD has no positive impact on retention at all. Therefore, a plausible 'lower estimate' for the impact of CPD is for no impact on retention or supply at all.

Table 9 Improvements in teacher professional development could lead to increases in supply at low cost

	2025/26	2026/27	2027/28
Details of modelled scenario	Improved CPD scenario: reduce leaving rates by 0.25pp each year from 2025/26		
Change in number of secondary teachers (excl. PE and history), compared to 2024/25	-127	290	1,056
Primary target met?	No	No	No
Additional cost compared to baseline scenario (£bn)	+0.04	+0.04	+0.04

[8] Four percentage point reduction in leaving rates for the 6.3 per cent of teachers attending a course, equating to a 0.25pp overall reduction in leaving rates.
[9] £184m for delivery of 150,000 courses.

3.6. Combinations of measures

The scenarios introduced in the previous sections have shown a range of different impacts, costs and implications for meeting the target. Although the pay scenario shows that substantially increasing pay for all teachers does deliver the required number of teachers, it comes at a high cost of an additional £7.7bn per year by 2027/28. Bursaries alone would not be able to attract enough trainees to provide 6,500 additional teachers unless levels were raised above starting salaries. ECRPs and broader retention payments could be used, but on their own would require significant expansion to most subjects and higher rates than currently, which could introduce distorted paths of teacher remuneration if not carefully designed.

Realistic reductions in workload or improvements in CPD are also not able to lead to improvements in retention rates that are sufficient to increase the number of teachers by 6,500 by 2027/28.

Therefore, a combination of the policy measures discussed above are likely to provide the most effective option for reaching the 6,500-teacher target. We explore four such combinations to explore the implications and trade-offs inherent in each, which policymakers will need to grapple with in designing a new recruitment and retention strategy.

The first combination scenario is heavily geared towards a combination of financial levers. In the scenario we explore the impact of:

- increasing teacher pay by four percentage points more than increases in average earnings growth each year (2025/26 – 2027/28), which begins to close the gap that has opened between teacher and average earnings growth since 2010.
- expanding ECRPs to all subjects that are eligible for bursaries in 2025/26, at similar rates to currently, but uprating payments in non-EIA schools to the rates of those in EIA schools
- increasing bursaries for some subjects to £29K, and £10K for all subjects other than history, PE and primary.

The evidence for the impact and costs of these interventions is high quality. Combining pay increases with increases in targeted measures creates some balance between broad-based impacts and cost efficiency.

As shown in Table 10, this scenario delivers the teacher supply target in full. However, as with the pay only scenario, this combination is expensive, costing around £4.6bn compared to the baseline. A relatively low proportion of spending in this scenario is targeted at shortage subjects: 2 per cent compared to 1.2 per cent in the baseline scenario.

Table 10 Combination 1

	2025/26	2026/27	2027/28
Details of modelled scenario	Combination 1 scenario: • increase pay by 4pp more than average pay for each year 2025/26 – 2027/28 • expand ECRPs to subjects that are eligible for a bursary (£6k for highest FSM, falling to £0k for lowest FSM) • increase bursaries to £29k for some and £10k for other subjects (only history, PE and primary have no bursary/TRIP)		
Change in number of secondary teachers (excl. PE and history), compared to 2024/25	-127	2,046	6,501
Primary target met?	Yes	Yes	Yes
Additional cost compared to baseline scenario (£bn)	+1.4	+3.0	+4.6
Proportion of total spend on targeted measures	1.7%	2.0%	2.0%

Our second combination scenario is also heavily geared towards a combination of financial levers but relies less on pay increases and leans more heavily towards targeted measures such as bursaries and retention payments. In the scenario we explore the impact of:

- increasing teacher pay by one percentage point more than increases in average earnings growth each year (2025/26 – 2027/28)
- increasing bursaries for primary and all subjects up to the lowest of: the level required to meet the ITT recruitment target or the starting salary.
- expand ECRPs to all subjects where recruitment targets are still not met by 2027/28, and increase value (£10k for highest FSM, £8.2k for lowest FSM)
- introduce retention payments for experienced teachers in the same subjects as for ECTs (£8k for highest FSM, £3.5k for lowest FSM)

The evidence for the impact and costs of these interventions is high quality. Combining large increases in targeted measures alongside small increases in pay has the potential to create imbalance and distortions in the path of remuneration, but the introduction of retention payments for experienced teachers balances this out.

As shown in Table 11, this combination also delivers the teacher supply target in full. This combination is significantly less expensive than combination 1, as more of the additional spend is focused on subjects where there are shortages rather than increasing pay for all teachers, leading to a more efficient use of resource.

Table 11 Combination 2

	2025/26	2026/27	2027/28
Details of modelled scenario	Combination 2 scenario: • increase pay by 1pp more than average pay for each year 2025/26 – 2027/28 • set subject bursaries to meet recruitment target (up to maximum of the starting salary, and including primary) • expand ECRPs to all subjects where recruitment targets are still not met by 2027/28, and increase value (£10k for highest FSM, £8.2k for lowest FSM) • introduce retention payments for experienced teachers in the same subjects as for ECTs (£8k for highest FSM, £3.5k for lowest FSM)		
Change in number of secondary teachers (excl. PE and history), compared to 2024/25	-127	2,644	6,510
Primary target met?	No	Yes	Yes
Additional cost compared to baseline scenario (£bn)	+1.1	+1.8	+1.9
Proportion of total spend on targeted measures	4.3%	5.1%	4.4%

The third and fourth combination scenarios we explore are more varied, combining non-financial measures such as reducing workload or improving CPD with financial levers. Both scenarios increase pay by two percentage points more than average earning growth and increase bursaries for primary and all subjects up to the lowest of the level required to meet the ITT recruitment target or the starting salary.

Scenario 3 explores the impact of a modest reduction in leaving rates of 0.2pp per year from non-financial levers, alongside substantial increases in spending on retention payments through expanded subjects, uplifts to ECRPs to between £6,000 and £8,000 and introducing retention payments for experienced teachers of between £3,000 and £4,000. Scenario 4 explores the impact of a more substantial reduction in leaving rates of 0.4pp per year from non-financial levers, alongside smaller increases in spending on retention payments to make up the difference.

The evidence for the impact and costs of these interventions is more mixed, given the relatively low quality of the quantitative evidence underpinning the assumed impact of non-financial levers on retention. Notwithstanding this limitation, Table 12 and Table 13 show that both combination scenarios deliver the teacher supply target in full. The associated costs of these scenarios – £2.6bn more in 2027/28 than the baseline for scenario 3, and £2.5bn more than the baseline for scenario 4 – are considerably lower than combination 1 because they have less reliance on pay increases and other financial levers. However, it is important to note that while there have been no costs modelled in this analysis for non-financial levers (such as workload reduction), these policies are not necessarily cost free.

Table 12 Combination 3

	2025/26	2026/27	2027/28
Details of modelled scenario	Combination 3 scenario: • increase pay by 2pp more than average pay for each year 2025/26 – 2027/28 • Set subject bursaries to meet recruitment target (up to maximum of the starting salary and including primary) • reduce leaving rates by 0.2pp per year from 2025/26 – 2027/28 due to non-financial measures such as workload reduction • expand ECRPs to all subjects where target is not met by 2027/28 and increase value (£8k for highest FSM, £6.4k for lowest FSM) • introduce retention payments for experienced teachers in the same subjects as for ECTs (£4k for highest FSM, £3k for lowest FSM)		
Change in number of secondary teachers (excl. PE and history), compared to 2024/25	-127	2,499	6,506
Primary target met?	No	Yes	Yes
Additional cost compared to baseline scenario (£bn)	+1.1	+2.0	+2.6
Proportion of total spend on targeted measures	3.0%	3.4%	3.0%

Table 13 Combination 4

	2025/26	2026/27	2027/28
Details of modelled scenario	Combination 4 scenario: • increase pay by 2pp more than average pay for each year 2025/26 – 2027/28 • Set subject bursaries to meet recruitment target (up to maximum of the starting salary and including primary) • reduce leaving rates by 0.4pp per year from 2025/26 – 2027/28 due to non-financial measures such as workload reduction • expand ECRPs to all subjects where target is not met by 2027/28 and increase value (£8k for highest FSM, £2.35k for lowest FSM) • introduce retention payments for experienced teachers in the same subjects as for ECTs (£4k for highest FSM, £1k for lowest FSM)		
Change in number of secondary teachers (excl. PE and history), compared to 2024/25	-127	2,312	6,505
Primary target met?	Yes	Yes	Yes
Additional cost compared to baseline scenario (£bn)	+1.0	+1.8	+2.5
Proportion of total spend on targeted measures	2.5%	2.9%	2.5%

3.7. Tailoring to individual subject needs

The above analysis is based on routes to achieving the overall teacher number target, but takes a relatively high-level approach that does not take into account the individual needs of each individual subject. There is an argument that each subject should be treated individually in policymaking according to the challenges, to focus resources as much as possible on the level of challenge. However, while this is currently done for setting bursary amounts, ECRPs amounts are set for all eligible subjects and pay is not differentiated by subject. This is a principle we have followed in our modelling, but could of course be adjusted to reflect different levels of shortage between subjects.

Further, it is important to recognise that even in scenarios where the overall 6,500-teacher target is met, the supply challenges for each subject are not necessarily fully addressed. A good example is physics, which has been a perennial shortage subject for many years, due to the relatively small number of graduates and their lucrative alternative career opportunities outside of teaching. Table 14 shows that under all the scenarios explored in our modelling, the physics recruitment target is not met and there is a considerable shortfall between the future supply of physics teachers and the demand for them. While all scenarios represent an improvement on the baseline, this implies that even if the overall target was met, schools would need to fill physics supply gaps, for example by deploying non-specialists such as biology teachers or using supply teachers.

Table 14 Physics teacher supply remains below what is required under all scenarios in which the 6,500-teacher target is met

Scenario	Physics recruitment vs target, 2027/28 (%)	Shortfall between physics teacher supply and demand (%)
Baseline	17	12.7
Pay	42	8.9
ECRPs scenario 3	26	8.6
Subject-specific retention payments scenario	26	8.6
Combination scenario 1	29	10.2
Combination scenario 2	34	7.9
Combination scenario 3	37	8.0
Combination scenario 4	35	8.5

3.8. Sensitivity analysis

One of the key assumptions we use in our model is the retention elasticity of pay and retention payments, i.e. how responsive teachers are to changes in remuneration. The Department for Education's evidence uses an elasticity for all teachers of -1.5, which means that for every 1 per cent increase in pay (over and above changes in average earnings), the teacher attrition rate falls by 1.5 per cent. Based on the latest research evidence, we instead assume that teachers in their first five years have an elasticity of -2.5 (Sims and Benhenda, 2022; CFE Research and FFT Education Datalab, 2023). To average out at a similar overall elasticity value to DfE, we assume an elasticity of -1 for experienced teachers.

We test the sensitivity of our findings to this difference in assumption. Table 15 below summarises the change in supply of secondary teachers (excl. PE and history) in 2027/28, compared to 2024/25 for each of the named scenarios. We only show the scenarios that achieve the 6,500-teacher supply target under the NFER elasticity assumption. While the numbers of additional teachers are lower under the DfE elasticity scenario, all except one of the scenarios achieve at least 5,000 more teachers by 2027/28. This implies that, under the DfE elasticity assumption, the policy measures considered as sufficient in these scenarios would actually need to go even further than we assume to achieve the target.

The exception is the ECRPs scenario, in which there is only a 3,700 increase in the number of teachers by 2027/28. Changing the elasticity has the largest impact under this scenario as the scenario relies heavily on retaining a high proportion of ECTs and reducing the elasticity for this group of teachers means that fewer teachers are retained. However, we believe that the existing evidence is strongly supportive of ECRPs specifically having a high elasticity, and what is more questionable is whether the elasticity would be equally high for ECTs in relation to increases in their pay.

Table 15 The model findings are somewhat robust to plausible but different assumptions about teacher elasticities

Scenario	Change in supply of secondary teachers (excl. PE and history) in 2027/28, compared to 2024/25	
	NFER assumption (-2.5 for ECTs, otherwise -1)	DfE assumption (-1.5 for all)
Pay	6,513	6,082
ECRPs scenario 3	6,537	3,696
Subject-specific retention payments scenario	6,510	5,063
Combination scenario 1	6,501	5,567
Combination scenario 2	6,510	5,422
Combination scenario 3	6,506	5,537
Combination scenario 4	6,505	5,837

4. Conclusions and recommendations

4.1. Conclusions

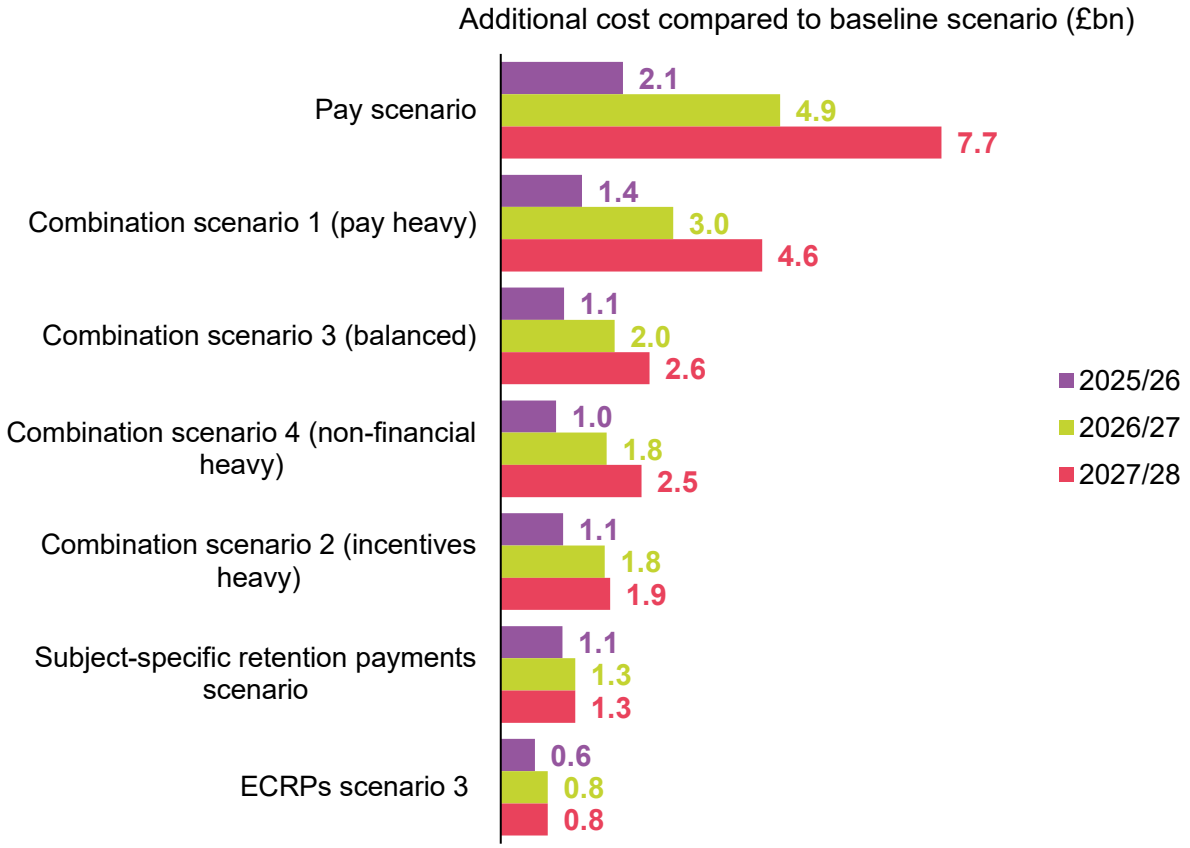
How challenging the Government's target to 'recruit 6,500 teachers' is to achieve depends crucially on how it is defined. In the interpretation we have adopted for the analysis in this report, achieving it is ambitious and not trivial and requires new policy measures that add to what is already enacted. Policymakers have many potential levers at their disposal, some of which have strong evidence about their impacts and costs, while others have strong evidence of impact direction but less certainty on how much of a difference they could make. Our definition for the target used in the analysis does not include FE teachers or those teaching in special schools. There may be higher numbers of additional teachers through improved teacher supply in special schools and colleges due to the policy levers under these scenarios.

Our analysis has set out several potential strategies that achieve the 6,500-teacher supply target, including single-lever policies and combinations of different actions. Policymakers therefore have choices to make, but also costs and trade-offs to consider.

Figure 1 summarises the costs of these different routes that our analysis suggest could achieve the supply target. Achieving the supply target through pay increases alone comes with the highest cost, at £7.7bn per year from 2027/28 onwards[10]. Other scenarios that assume significant contributions from pay increases, such as combination 1 are also associated with relatively high cost. The current tight fiscal environment may preclude such measures from forming a significant part of an overall strategy.

[10] This is in addition to the cost increase of maintaining pay competitiveness that is assumed in the baseline scenario, of £2.1bn from 2027/28 onwards.

Figure 1 Scenarios that rely most on pay increases to meet the target are associated with the highest costs



Scenarios with lower costs are those that either rely on cost effective spending on targeted measures aimed at shortage subjects, particularly bursaries and ECRPs, or on non-financial measures such as reducing workload or improving CPD. However, pursuing these options that are lower in financial cost are not without risks for policymakers.

First, increasing the targeted bursaries and ECRPs would increase disparities in remuneration between subjects. Further, they could potentially introduce material distortions in teachers' path of overall remuneration as they progress, particularly after year five if the ECRP value is high and there are no retention payments for teachers with more than five years of experience. Increasing targeted subject-specific interventions further where each subject attracts different values of bursaries of ECRPs depending on levels of supply in that subject would boost efficiency in spending further. However, it would also likely amplify the risks highlighted above and potentially lead to large disparities across teachers who share similar characteristics other than the subjects they teach.

Second, the evidence of the quantifiable impact and cost of non-financial policy measures is currently less well developed. The impacts we have assumed in our analysis are based on less robust evidence, so are far more uncertain. The available evidence on the impacts on teacher

supply is strongest for targeted financial incentives such as bursaries and ECRPs and somewhat strong for pay. Further, some non-financial measures, such as workload reduction either could be associated with significant financial costs, or could be associated with significant non-financial costs (such as negative impacts on pupil outcomes). This depends crucially on how the measure is implemented and, again, the evidence on these costs is not well developed and is uncertain.

4.2. Recommendations

1. **The Government should publish a comprehensive strategy for how it defines and plans to meet the 6,500-teacher supply target, with sufficient funding to deliver it**. The strategy should be based on a combination of funded policy measures, including non-financial measures such as reducing workload and investing in CPD, and further financial measures that are targeted at improving teacher supply in shortage subjects such as physics, chemistry, computing and maths. This could include a broader range of retention payments that cover all schools, apply to all teachers of particular subjects regardless of years of experience and with higher rates for teachers working in schools serving disadvantaged communities.
2. **The Government should invest in deepening the evidence base of interventions that can improve recruitment and retention.** While the quality of research evidence around bursaries and ECRPs is high and growing, there is less high-quality and quantifiable evidence about the impacts of, for example, workload and professional development. Evidence on the impacts and costs of a wide range of policy measures would enable better comparative assessments of the relative costs and impacts within a single analytical framework. Further, refining the impact estimates for different policies (for example, considering how teachers with different levels of experience or teaching in different types of schools respond to financial incentives) would enable the development of more nuanced policy development and sophisticated scenario modelling. For example, the modelling in this report, and policymaking, could be expanded to treat each individual shortage subject separately to address the most acute shortages that exist in subjects like physics in a more tailored way compared to other shortage subjects.

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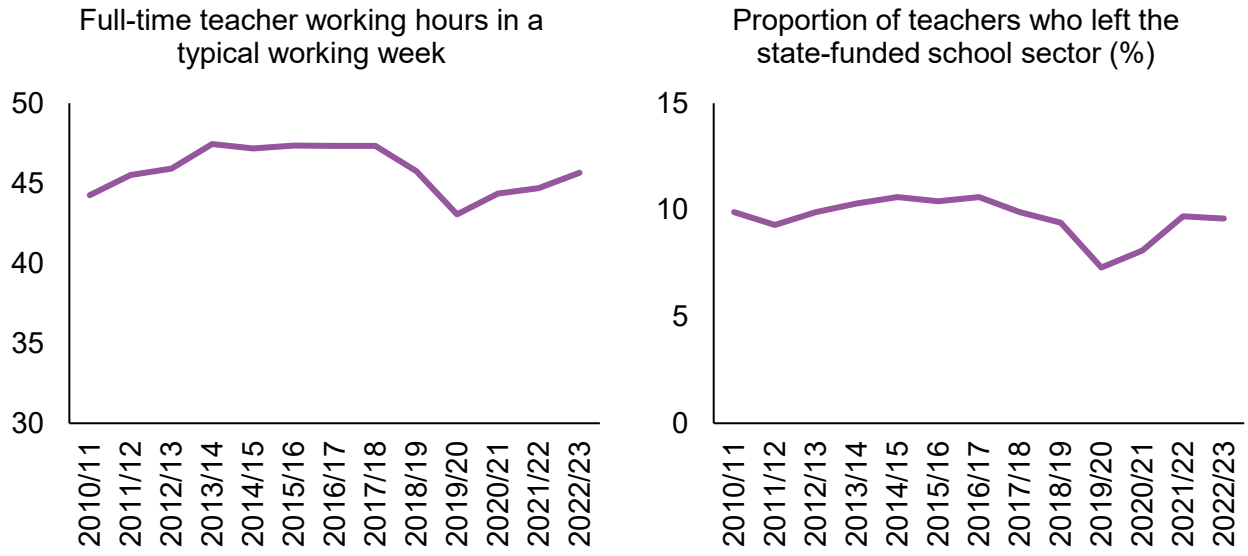
Appendix A: The relationship between teacher workload and retention

Workload is the most cited reason for why teachers leave the profession. Workload is often measured in terms of working hours, but is a more complex concept, relating also to what tasks and activities teachers are doing, how much influence they have over their work and the expectations placed on them by senior leaders and the wider system.

Working hours, workload perceptions and teacher attrition rates have followed somewhat similar trends over the last decade. As shown in Figure 2 below, working hours and leaving rates both rose during the early part of the 2000s and peaked around 2016. The first half of the 2010s saw a large amount of education policy change in England, such as the revised national curriculum, new assessments and school accountability measures and a revised Ofsted inspection framework. Both measures fell during the period 2016-19, which is likely related to the slowdown in the pace of changes in education policy and a focus on workload reduction. Both hours worked and attrition rates fell during the pandemic, but this is likely due to different reasons: attrition fell because of a lack of job opportunities outside of teaching while working hours fell due to adjustments to remote teaching during the pandemic.

Figure 2 Teacher working hours and leaving rates have followed similar trends of over the last decade

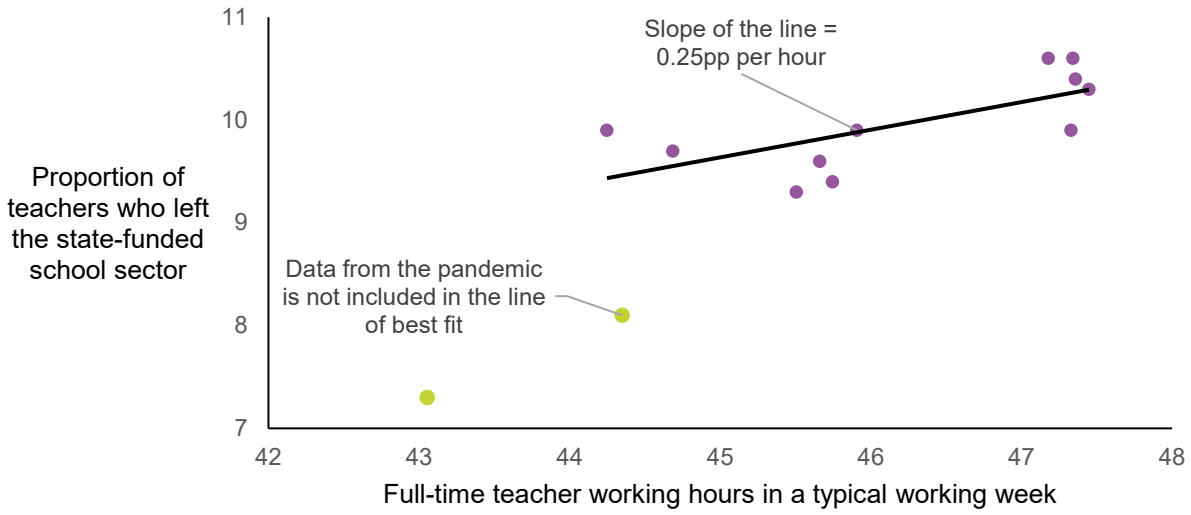


The similar trends in workload-related factors and teacher leaving rates suggests that workload reduction can lead to improvements in retention. There are no established estimates of the extent to which there is a relationship between reductions in working hours and retention. Some analyses suggest that there is little relationship between hours and retention (Sims and Jerrim, 2020). However, this analysis may be confounded as it compares across individuals, who may differ in

their motivations and enthusiasm towards teaching, influencing both the number of hours they work and their likelihood of staying.

We use the system-level correlation over time to estimate the relationship. This is also likely to be confounded, as it does not take account of other factors changing at the same time, such as the competitiveness of teacher pay relative to earnings in the wider economy. Figure 3 shows the correlation between average full-time teacher working hours in a typical full working week (as measured by the Labour Force Survey) and the teacher attrition rate from the state sector (as measured by the School Workforce Census). There is a positive relationship and the slope of the line of best fit suggests that a reduction in working hours of one hour per week is associated with a 0.25 percentage point reduction in the attrition rate. This implies that a five hour per week reduction in working hours may lead to a 1.25 percentage point reduction in the attrition rate.

Figure 3 The correlation between working hours and leaving rates suggests that workload reduction is associated with improvements in retention



Appendix B: Simulation and forecast model

The analysis in this report is derived from a forecast and simulation model developed by NFER to assess the overall costs and teacher supply impacts of different pay and financial incentive options. This methodology appendix provides more details about the method and assumptions that underpin the analysis.

The model is based on the most recent data on the recruitment of teachers to postgraduate ITT and associated targets, the salary structure of the teaching workforce and the numbers of teachers at each pay point and their respective rates of leaving the state-funded sector. The model also uses currently available policy information on bursaries and teacher retention payments. To account for the expected evolution of the wider economic environment, the model uses the most recent economic forecasts produced by the Office for Budget Responsibility (OBR), which for this report is the October 2024 forecast (Office for Budget Responsibility, 2024).

The model incorporates the above input information as well as policy scenarios defined by the model user. These inputs are combined with parameters – estimates of how responsive teacher recruitment and retention behaviour is to changes in various key factors, derived from the research literature – to calculate forecasts. The model makes four sets of calculations, as follows:

Recruitment

Following the DfE's reporting of ITT statistics, ITT recruitment is modelled for primary and each of 18 secondary subjects, including an 'other' category that includes media and communication studies, social studies, and psychology. Recruitment numbers are baselined on the number of trainees expected to start ITT courses in 2024/25, predicted using the latest data on ITT applications up to September 2024 and a combination of historic ITT enrolment and applications data.

The model makes a forecast, based on the evidence-based assumptions that:

- Recruitment rises with increases in the unemployment rate (Worth, Tang and Galvis, 2022). We assume that recruitment to all subjects rises by six per cent for every one percentage point rise in the unemployment rate (and vice versa for falls). We use the OBR forecast to project the future path of the unemployment rate.
- Recruitment rises with increases in the subject's bursary (Worth, Tang and Galvis, 2022). We assume that recruitment to a subject rises by 2.9 per cent for every £1,000 rise in the bursary (and vice versa for falls).
- Recruitment rises with increases in average pay on the main teacher pay scale relative to the change in average earnings. We assume that recruitment to all subjects rises by two per cent for every one percentage point rise in average salary on the main pay scale that is over and above changes in average earnings (and vice versa for falls). We use the OBR forecast of average earnings growth by fiscal year to project the future path of outside earnings. We also assume that ITT recruitment responds partly to teacher pay relative to outside pay in the current year and partly to teacher pay relative to outside pay in the previous year.

Retention

Teacher leaving rates are baselined on rates of leaving the state-sector in 2018/19, the most recent available data unaffected by the pandemic, so that the model does not use the atypical retention rates seen during the Covid-19 pandemic in 2019/20 and 2020/21 as a baseline. Using a similar approach to that outlined in modelling carried out by DfE (2020), the model assumes that the leaving rate falls in proportion to increases in teacher pay relative to the change in average earnings. Based on Sims and Benhenda (2022) and DfE (2022), the model also assumes that teachers on the first five points of the main pay scale are more responsive to pay changes than more experienced teachers. Specifically, we assume that the leaving rates of teachers on pay scales M1 to M5 decrease by 2.5 per cent for every one percentage point rise in pay that is over and above changes in average earnings (and vice versa for falls). We assume that the leaving rates of teachers on pay scales M6 and above decrease by one per cent for every one percentage point rise in pay that is over and above changes in average earnings. We use the OBR forecast of average earnings growth by fiscal year to project the future path of outside earnings.

Pay is modelled separately by phase (primary and secondary, but not special schools as there is no ITT target for specialist routes), by pay point (M1-M6, U1-U3 and leadership) and by pay region (Inner London, Outer London, London Fringe and Rest of England). Early career retention payments are assumed to affect retention in the same way as pay and are included additively along with pay. We do not separately model the impact of early career retention payments for eligible and non-eligible teachers, but take a weighted average of eligibility multiplied by the payment amount within each pay region and subject. Due to the early carer retention payments, we model each subject separately and then aggregate the overall leaving rate estimates across subjects using the number of teachers.

Using additional data from the 2021/22 SWC on gender composition at each pay point and average salaries of male and female senior leaders, we calculate the gender pay gap for each year by measuring the average male and female salary. We also use additional SWC data on staff composition by levels of disadvantage (quintiles of schools based on the proportion of pupils eligible for free school meals) to calculate the average year-on-year change in salary by level of school disadvantage. Both these analyses assume that the respective staff compositions do not change over time.

Costs

The model uses teacher salary data from the School Teachers Pay and Conditions Documents and teacher numbers and supplementary teacher average salary data from the School Workforce Census in 2021/22 to calculate the total salary costs.

Pay is modelled separately by phase (primary, secondary and special), by pay point (unqualified, M1-M6, U1-U3 and leadership) and by pay region (Inner London, Outer London, London Fringe and Rest of England). Salaries at each pay point for 2024/25 and beyond are uprated with the increases assumed by the policy scenario under consideration in the model. The model calculates the aggregate costs using the number of teachers at each pay point in the 2021/22 academic year.

The model also includes estimates of employer national insurance and pension contributions to provide a realistic assessment of the total cost of policy changes to the Exchequer.

Separately, the model also calculates the aggregate cost of bursaries and early career retention payments. We multiply the bursary amount by the number of trainees entering ITT in a particular year. This approximates, although likely overstates slightly, the cost of bursaries given that some trainees get scholarships rather than bursaries (although the cost to the Exchequer is similar) while others are ineligible for bursaries. Early career retention payments are aggregated using the weighted average of eligibility and non-eligibility explained above for each subject. These are then further aggregated using the proportion of total hours taught in that subject and the overall number of secondary teachers.

Targets

The forecasts for ITT targets in the model are based on the methodology set out in the DfE's 'Calculation of 2024 to 2025 PGITT targets' spreadsheet, taken from the DfE's Teacher Workforce Model. The targets for the 2024/25 academic year are taken as published by DfE. The model uses the DfE methodology to make further forecasts of targets in future years, accounting for changes in pupil numbers (which affect teacher demand), future retention rates (derived from the Retention calculations mentioned above, which affect teacher demand) and future ITT recruitment (derived from the Recruitment calculations mentioned above, which affect teacher supply).

Minor adjustments have been made to the methodology, which is designed to calculate short-term targets, to be more appropriate for forecasting long-term targets. Specifically, where there is an increase in supply from ITT, the DfE's calculations assume that schools hire those additional teachers, even if the demand for teachers is likely to fall over time. This is a reasonable assumption to make for a model that only calculates targets for the 2024/25 academic year, as the DfE model does. However, it seems unreasonable to assume that schools will continue doing this indefinitely, and therefore as a basis for forecasting targets beyond 2024/25. This was particularly the case for primary, where demand is expected to fall over time due to falling pupil numbers, but supply was expected to rise under some modelled scenarios. We therefore cap the number of teachers that schools employ in the 'supply met' scenario to be no more than ten per cent of the number of teachers from the 'demand met' scenario wherever the former exceeds the latter. Intuitively, it means that schools employ the teachers that they need for the pupils they are teaching (based on pupil-teacher ratios that are similar to the current ones), with a ten per cent buffer, rather than continuing to expand staffing indefinitely.

Outputs

The key teacher supply outputs from the model are forecasted ITT recruitment for each subject relative to its respective forecasted target and 'teacher supply' i.e. the number of teachers employed in the school sector by subject. Other outputs include the total salary costs per annum for primary, secondary and special sector – including and excluding employer NI and pensions contributions – bursaries and early career retention payments. The average gender pay gap is calculated for each year and the year-on-year change in pay costs for schools by quintile of pupil disadvantage.

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