

# The net Exchequer impact of increasing pay for Agenda for Change staff

A Report for the NHS Trade Unions



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## Executive Summary

### Pay rises are much needed, and long overdue

Corresponding to approximately **4%** of employees in England<sup>1</sup>, there are currently just over **1 million** nurses, midwives, allied health professionals, and NHS support staff covered by the Agenda for Change (AfC) Pay framework in England. **Since 2010-11, pay levels at every single AfC spine point have lagged behind inflation, resulting in a significant decline in total pay in real terms.** Most spine points have exhibited a decline in excess of 10%, and total pay on the AfC spine point with the highest incidence of staff (at the top of Band 5) has declined by **15%** since 2010-11<sup>2</sup>. This is **three times** the decline in median earnings experienced by full-time private sector employees across the UK over the same timeframe<sup>3</sup>.

### Pay rises are affordable

In the first instance, our intention was to undertake this analysis for AfC staff across the entire United Kingdom. However, as a result of limited data availability, to assess the affordability to the Government of potential pay increases for AfC staff, we estimated the **net Exchequer impact associated with an illustrative 10% increase<sup>4</sup> in the total pay bill for AfC staff in England (only) in 2021-22.** Despite the focus of this analysis being AfC staff in England, the economic benefits accrued by the Exchequer reflect the enhanced spending benefitting all industries throughout the entire UK economy.

The headline **Exchequer cost** associated with this 10% pay bill increase was estimated to be **£3.40bn**. However, **offsetting this cost**, the aggregate **Exchequer benefit** resulting from this 10% increase in total AfC pay was estimated to be **£2.74bn** (or **81%** of the initial Exchequer cost<sup>5</sup>), consisting of:

- **£1.60bn** in additional tax receipts from AfC staff and their employers – with PAYE taxation, employee National Insurance and employer National Insurance offsetting **22%**, **11%** and **14%** of the initial Exchequer cost<sup>6</sup>, respectively;
- **£0.89bn** in wider direct, indirect, and induced tax receipts generated by AfC staff's increased consumption throughout the entire economy – offsetting a further **26%** of the initial Exchequer cost;
- **£0.13bn** in cost savings from the improved recruitment and retention of NHS nurses and midwives (equating to **21,790** service years over the period of analysis) – offsetting a further **4%** of the initial Exchequer cost; and

<sup>1</sup> The analysis presented here is based on a total of approximately 1,014,000 staff paid through the Agenda for Change framework in England in 2019-20. This compares to approximately 27.2 million employees in England in 2019 (see Office for National Statistics (2020c)).

<sup>2</sup> There were approximately 72,000 staff on Band 5 (Point 23) of the Agenda for Change framework in England in 2019-20.

<sup>3</sup> Using information from the Annual Survey of Hours and Earnings (see Office for National Statistics (2020d)), we estimated that full-time private sector employees had experienced a **4.5%** decline in real wages since 2010-11 (based on changes in the Retail Price Index (RPI) since 2010-11).

<sup>4</sup> We also modelled the net Exchequer impact associated with a 5% total pay increase. Both the 5% and the 10% increases were chosen as hypothetical *examples* of potential increases in the total pay bill, rather than to inform any recommendations on the size of any pay increase to be provided.

<sup>5</sup> In other words, once Exchequer benefits are taken into account, this illustrative 10% increase in the pay bill for AfC staff would only result in an *effective* **2%** increase in the Exchequer cost of AfC pay.

<sup>6</sup> Corresponding to **£0.76bn** in PAYE taxation, **£0.37bn** in National Insurance employee contributions, and **£0.47bn** in National Insurance employer contributions.



- **£0.13bn** in cost savings from lower student loan write-offs for nursing students – offsetting a further **4%** of the initial Exchequer cost.

The **net cost to the Exchequer** associated with this illustrative 10% increase in the total bill for AfC staff pay in England was therefore estimated to be **£0.66bn**. To place this in context, this net Exchequer cost represents approximately **0.075%** of total government expenditure in 2019-20<sup>7</sup> - equivalent to **7½ pence per £100 of government expenditure**.

## Pay rises support the wider economy

Pay increases for nurses, midwives, allied health professionals and NHS support staff are long overdue, and will result in increased disposable income circulating throughout the economy. **This will benefit the many businesses up and down the country relying on a return to normality at the end of the Covid-19 pandemic.** Pay increases to approximately 1.1 million public sector employees across the entire United Kingdom will not only address the real erosion of pay and living standards amongst these vital public sector employees, but also provide huge financial support to those businesses and private sector employees in every sector of the economy that the government is currently supporting and most wants to succeed.

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<sup>7</sup> Using information from the Office for Budget Responsibility's Public Finances Databank (see Office for Budget Responsibility (2020b)), in 2019-20, total UK government managed expenditure was estimated at **£885.2 billion**. The use of information from 2019-20 was to provide a conservative estimate, based on government expenditure in a 'typical' year rather than the increased level of expenditure that has taken place in 2020-21 to address the impacts of the Covid-19 pandemic.

# 1 Introduction and overview

Over the last decade, NHS staff paid through the Agenda for Change (AfC) framework - including nurses, midwives, allied health professionals, and a wide range of NHS support staff - have been facing significant declines in their real earnings. As presented in Figure 1, since 2010-11, the average total pay<sup>8</sup> for staff on each AfC pay spine point in England has been lagging far behind inflation<sup>9</sup>, which has resulted in a significant decline in real total pay across all spine points between 2010-11 and 2020-21 (with most spine points exhibiting a decline in real total pay in excess of 10%)<sup>10</sup>. At the same time, NHS staff's working conditions have come under significant strain, particularly given the unprecedented national and global health crisis caused by the Covid-19 pandemic.

As part of the November 2020 Spending Review<sup>11</sup>, the Treasury announced a general public sector pay freeze in 2021-22, with an exemption for NHS staff. Acknowledging that there has been a delay to the NHS pay review process for 2021-22, the Secretary of State for Health and Social Care has repeatedly emphasised that the pay recommendations to be made by the NHS Pay Review Body (NHSPRB) should 'take account of the extremely challenging fiscal and economic context and consider the **affordability** of pay awards'<sup>12</sup>. A core aspect of this assessment of affordability from the perspective of the public purse is to consider not only the **costs** associated with funding any AfC pay increase, but also the resulting **benefits** accrued (including any costs avoided) by the Exchequer. Therefore, London Economics were commissioned (by the NHS Trade Unions) to analyse the **net Exchequer impact of providing a pay increase for staff covered by the Agenda for Change framework in 2021-22**.

Specifically, we analysed the net impact on the Exchequer of providing a **5% or 10% increase in the total pay bill for all AfC staff in England in 2021-22**<sup>13</sup>, by comparing the costs of these increases (see Section 2) to the resulting benefits, including:

- The **additional payroll tax contributions from AfC staff and their employers in 2021-22** (in terms of income tax and National Insurance contributions) associated with the increased pay levels (see Section 3.1);
- The **additional wider tax receipts generated throughout the UK economy in 2021-22 from AfC staff spending additional disposable income on consumer goods and services** (incorporating the direct, indirect, and induced tax effects; see Section 3.2);
- The **cost savings resulting from the expected reduced reliance on Bank and Agency staff** (due to improved recruitment and retention rates among NHS nurses and midwives), for the 'cohort' of staff working in the NHS in 2021-22 (tracking their improved retention over a 10-year period; see Section 3.3); and
- The **reduction in the Exchequer cost of higher education loan write-offs for English-domiciled students undertaking undergraduate nursing degrees in England** (for the cohort of students who started nursing degrees in 2017-18); see Section 3.4<sup>14</sup>.

<sup>8</sup> In addition to basic salaries, the total pay bill includes a range of 'non-basic' pay components. (e.g. payments for additional activity, band supplements, medical awards, geographic allowances, local payments, on call, overtime, recruitment and retention premia, shift work payments, and other payments), but *excludes* any additional on-costs (e.g. in terms of pensions or employer National Insurance contributions associated with AfC pay, as these were not included in the underlying NHS Digital data).

<sup>9</sup> Based on Retail Price Index Inflation rates published by the Office for National Statistics (2020a).

<sup>10</sup> Note that Figure 1 presents changes in the pay rates for each AfC spine point over time, but does not provide information on the pay progression of individual staff (as it does not capture the extent to which staff progress to higher spine points over time).

<sup>11</sup> See HM Treasury (2020).

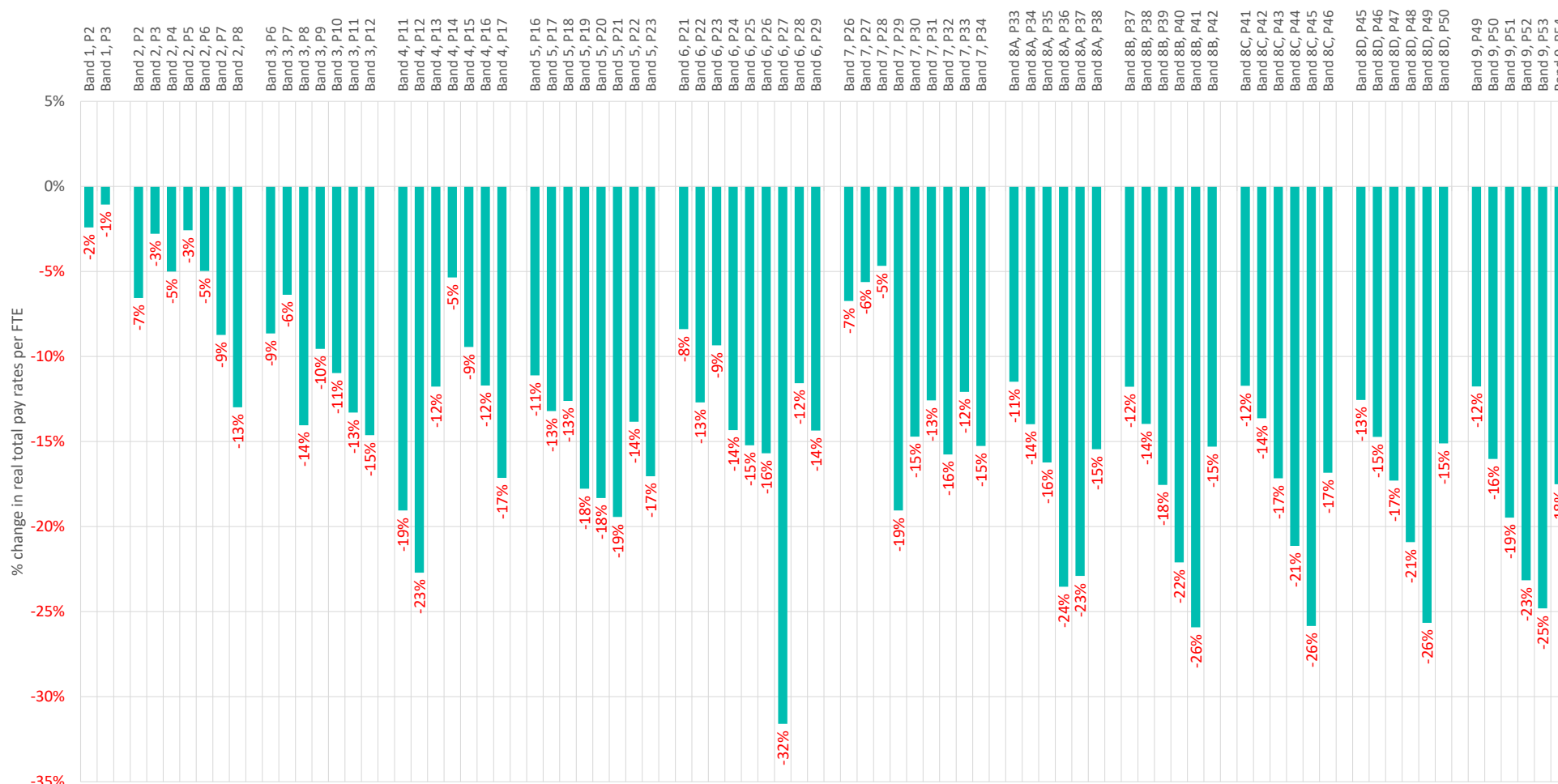
<sup>12</sup> Department of Health and Social Care (2020).

<sup>13</sup> The analysis covers *all* staff paid through the AfC framework, including staff employed in NHS Trusts and Clinical Commissioning Groups (CCGs), as well as NHS Supporting Organisations and Central Bodies.

<sup>14</sup> Note that, apart from the cost savings due to improved recruitment and retention, all other strands of Exchequer benefits included in the analysis *exclude* any potential changes in the size or composition of the AfC workforce that might arise from a pay increase.



**Figure 1** Change in real total pay per FTE staff on the AfC framework in England between 2010-11 and 2020-21 (compared to RPI), by AfC spine point



Note: The figure includes staff in NHS Trusts and CCGs only (since comparable information by spine point for staff in NHS Supporting Organisations and Central Bodies was not available). Real total pay per FTE staff was calculated by adjusting the corresponding nominal pay rates for changes in the Retail Price Index since 2010-11. Spine points are based on the previous spine point system (in use pre-2018-19). Gaps may arise where there are rates for a given spine point in 2020-21, but not in the respective base year of interest. The figure presents changes in the pay rates for each AfC spine point over time, but does not capture the extent to which staff progress to higher spine points over time.  
**Source: London Economics' analysis based on NHS Digital data and ONS Retail Price Index data<sup>15</sup>**

<sup>15</sup> See Office for National Statistics (2020a).



## 2 The Exchequer cost of increasing AfC pay

To assess the Exchequer cost associated with providing a pay increase to staff on the AfC framework, resulting in an illustrative 5% or 10% increase in the total pay bill, we made use of previous modelling that analysed the aggregate financial cost to the Exchequer of providing potential lump sum or percentage pay increases to staff on the Agenda for Change framework in England in 2021-22<sup>16</sup>. For the purposes of illustrating this analysis, we calculated a **5% or 10% increase in the total pay bill**<sup>17</sup> (i.e. an increase in Exchequer cost) by straightforwardly assuming a **5% or 10% increase in pay for all AfC staff in England**<sup>18</sup>, applied to all AfC spine points and pay elements. Clearly, there are a number of feasible alternatives to achieve the same initial Exchequer cost outcome through differentiated increases across the AfC pay bands.

In **2020-21**, the total pay bill associated with AfC staff in England was estimated to be **£34.00bn** (of which **£32.75bn** was associated with staff in NHS Trusts and CCGs, and **£1.25bn** was associated with staff employed in NHS Support Organisations and Central Bodies). In the **Baseline**, in the absence of information on the AfC pay rates to apply from 2021-22 onwards (as the pay review process is ongoing), **we assume that the total pay bill would remain the same in 2021-22 as in 2020-21** (i.e. that there would be no pay increase in 2021-22 as compared to 2020-21)<sup>19</sup>.

Adopting this illustrative approach, compared to the Baseline, this **5% increase** to the total pay bill would result in a **£1.70bn** increase in total pay in 2021-22, to **£35.70bn** (comprised of **£34.39bn** associated with staff in NHS Trusts and CCGs, and **£1.31bn** associated with staff in NHS Support Organisations and Central Bodies). This is presented in Figure 2.

**Figure 2 Exchequer costs of total AfC pay bill in England in 2021-22, Baseline vs. 5%/10% increase**



Note: All values are provided in £bn in 2021-22 prices.

Source: London Economics' analysis

<sup>16</sup> The model was based on detailed NHS Digital data for England, provided by the Royal College of Nursing. Given the lack of corresponding data for Wales, Scotland and Northern Ireland, the analysis was undertaken for England only.

<sup>17</sup> Again, in addition to basic salaries, the total pay bill includes a range of 'non-basic' pay components (e.g. payments for additional activity, band supplements, medical awards, geographic allowances, local payments, on call, overtime, recruitment and retention premia, shift work payments, and other payments), but *excludes* any additional on-costs (e.g. pensions or employer National Insurance).

<sup>18</sup> The analysis is based on a total of approximately 1,014,000 staff paid through the AfC framework in England (comprised of 985,000 staff employed in NHS Trusts and CCGs, and 29,000 staff employed in NHS Supporting Organisations and Central Bodies). These staff numbers were based on NHS Digital data for 2019-20 (specifically, for December 2019), and, in the absence of more recent information, we assume the same number of staff in 2021-22 as in 2019-20. More detailed information on the number of staff by AfC spine point is provided in Annex 2 (see Figure 6).

<sup>19</sup> It is important to note that while this assumption influences the *absolute size* of the Exchequer costs and benefits associated with a 5% or 10% AfC pay increase, the estimated *ratio* of Exchequer benefits to costs (presented in Section 4) would remain unchanged even if we assumed a different Baseline pay bill in 2021-22. A higher assumed Baseline pay bill in 2021-22 would result in a reduction in both the estimated costs *and* benefits associated with the 5%/10% pay increase, with no impact on the estimated benefit-to-cost ratios.



The illustrative **10% increase** would represent a **£3.40bn** increase in total pay in 2021-22, to **£37.40bn** (of which **£36.03bn** is associated with staff in NHS Trusts and CCGs, and **£1.37bn** is associated with staff in NHS Support Organisations and Central Bodies).

### 3 Exchequer benefits of increasing AfC pay

#### 3.1 Additional tax receipts from AfC staff and their employers

The first source of Exchequer benefit associated with an increase in pay for Agenda for Change staff relates to the **additional payroll deductions** contributed by AfC staff and their employers. Specifically, we assess the additional **income tax and National Insurance (NI) contributions from AfC staff**, as well as the additional **NI contributions from AfC staff's employers**, all captured in 2021-22. To analyse the size of these benefits, we combined information (from our previous modelling) on the average gross total pay per full-time equivalent (FTE) staff on each spine point<sup>20</sup> of the AfC framework in 2021-22 (under the Baseline, a 5% increase, and a 10% increase) with the relevant income tax and NI rates and thresholds<sup>21</sup>. The resulting tax and NI contributions per FTE staff were then combined with the underlying number of FTE staff on the AfC framework<sup>22</sup>, to arrive at aggregate estimates of the relevant tax take in 2021-22.

As presented in Table 1, in the Baseline (i.e. assuming no pay increase in 2021-22), total Exchequer income tax receipts, NI employee contributions and NI employer contributions associated with AfC staff were estimated at **£10.55bn**. This includes **£4.30bn** in income tax receipts, **£2.83bn** in NI employee contributions, and **£3.42bn** in NI employer contributions.

**Table 1** Income tax and National Insurance contributions associated with AfC staff in 2021-22, Baseline vs. 5%/10% increase in the total pay bill

Type of Exchequer revenue	£bn in 2021-22			Difference to Baseline		
	Baseline	5% increase	10% increase	Baseline	5% increase	10% increase
Income tax	£4.30bn	£4.67bn	£5.06bn	-	£0.37bn	£0.76bn
NI employee contributions	£2.83bn	£3.02bn	£3.20bn	-	£0.19bn	£0.37bn
NI employer contributions	£3.42bn	£3.66bn	£3.89bn	-	£0.23bn	£0.47bn
<b>Total</b>	<b>£10.55bn</b>	<b>£11.35bn</b>	<b>£12.15bn</b>	<b>-</b>	<b>£0.79bn</b>	<b>£1.60bn</b>

Note: All values are presented in £bn in 2021-22 prices. Totals may not add up precisely due to rounding.

Source: London Economics' analysis

Adopting this illustrative approach, compared to the Baseline:

- A **5% increase in the total pay bill** in 2021-22 would result in a **£0.79bn** increase in Exchequer tax receipts in 2021-22, to **£11.35bn**. Of this total, **£4.67bn** would be generated from income tax, and **£3.02bn** and **£3.66bn** would be generated from NI employee and employer contributions, respectively; and
- A **10% increase in the total pay bill** would instead result in a **£1.60bn** increase in Exchequer tax receipts in 2021-22, to **£12.15bn** (including **£5.06bn** in income tax revenues, and **£3.20bn** and **£3.89bn** in NI employee and employer contributions, respectively).

<sup>20</sup> Note that, while the analysis for staff employed in NHS Trusts and CCGs was disaggregated by AfC spine point, a similar breakdown by staff in NHS Support Organisations and Central Bodies was not possible, since the underlying NHS Digital data did not provide a disaggregation by spine point for this group of staff. Hence, for these staff, the analysis was instead based on the average total pay rate across all staff in NHS Support Organisations and Central Bodies.

<sup>21</sup> Specifically, to arrive at assumed income tax and NI earnings thresholds for 2021-22, we updated the current income tax and NI thresholds (applicable in the 2020-21 tax year) for one year of average nominal earnings growth (based on recent forecasts by the Office for Budget Responsibility (2020a)).

<sup>22</sup> Again, per spine point where possible. Note again that the number of staff on each spine point was based on data for 2019-20 (in the absence of more recent information).



In other words, compared to the cost of increasing the pay bill by 5% (£1.70bn) or 10% (£3.40bn) (see Section 2), the Exchequer would recoup **47%** of these costs (£0.79bn and £1.60bn, respectively) through the income tax and NI insurance contributions of AfC staff and their employers alone (with approximately **22%** recouped through income tax, **11%** through NI employee contributions, and **14%** through NI employer contributions).

### 3.2 Wider tax receipts from AfC staff's higher consumption

In addition to AfC staff's payroll deductions, an increase in pay for AfC staff is also expected to result in additional tax revenues generated throughout the wider UK economy. Specifically, the uplift in pay is expected to **increase the consumption expenditures of AfC staff on consumer goods and services, resulting in additional economic activity – and Exchequer tax revenues – throughout the UK economy**<sup>23</sup>. This is captured by the **direct, indirect, and induced tax impacts** generated by AfC staff's consumption spending, defined as follows:

- **Direct effect:** AfC staff's additional consumption expenditure constitutes a direct injection of income for industries producing consumer goods and services. Part of this additional income will revert to the Exchequer through increased tax contributions from these industries (e.g. in terms of additional VAT payments or payroll tax contributions (reflecting any potential workforce changes/additions) necessary to meet the increased demand).
- **Indirect effect:** The industries producing the consumer goods and services purchased by AfC staff in turn spend the additional income on their own input purchases from suppliers to meet the increased demand. This results in a chain reaction of subsequent rounds of spending (and associated increased Exchequer tax revenues) across industries throughout the supply chain, often referred to as the 'ripple effect'.
- **Induced effect:** The additional income for industries producing the goods and services purchased by AfC staff (and for the organisations in these industries' supply chains) is also expected to result in additional wage income paid to these industries' employees, who in turn spend their own wages on consumer goods and services throughout the UK economy. This in turn generates additional wage income (and associated Exchequer tax revenues) for employees in other industries. Again, this leads to subsequent rounds of wage income spending, i.e. a 'ripple effect'.

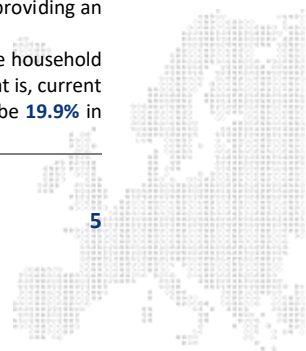
While this section focuses on these tax impacts for the Exchequer, Box 1 presents the direct, indirect, and induced effects on the UK economy as a whole, in terms of the aggregate economic output generated (and in which industries).

To assess the **direct tax revenues** associated with the consumption expenditures of AfC staff, we:

- Estimated the total **net pay (after tax) of AfC staff** in 2021-22 (under the Baseline and a potential 5% or 10% increase in pay), by deducting the total income tax and NI employee contributions from AfC staff's gross earnings (based on the analysis described in Section 3.1);
- Deducted the expected proportion of AfC staff's net pay to be saved (rather than spent on goods and services<sup>24</sup>), to **estimate the consumption expenditures of AfC staff** under the Baseline and the potential pay increases; and

<sup>23</sup> Note that similar indirect and induced impacts might arise from the additional income tax and NI contributions from AfC staff and their employers (discussed in Section 3.1), if it were assumed that these tax revenues would in turn generate additional spending by the Exchequer. However, here, we assume that these tax revenues would instead be used to recoup some of the initial cost of providing an AfC pay increase, so that the analysis excludes any indirect and induced effects arising from these tax revenues.

<sup>24</sup> This was based on estimates of the household saving ratio published by the Office for Budget Responsibility (2020a). The household saving ratio captures the income that households have available to save as a proportion of their total available resources (that is, current and deferred incomes). Despite savings rates being higher than usual as a result of the Covid-19 pandemic (estimated to be **19.9%** in



- Estimated the **direct tax revenues** associated with these consumption expenditures (by multiplying the consumption spending by the average ratio of tax revenues to output generated across all industries in the UK<sup>25</sup>).

To assess the **indirect and induced tax revenues associated with AfC staff's consumption expenditures**, we then made use of **UK Input-Output tables** (for 2016<sup>1</sup>) published by the Office for National Statistics (2020b). These tables measure the total production output of each industry in the UK economy, the inter-industry (and intra-industry) flows of goods and services consumed and produced by each sector, as well as households' consumption of these products.

Using these Input-Output tables, we calculated **economic multipliers** for each UK industry, capturing the aggregate impact across all sectors within the UK economy following an initial increase in the demand for/output of that industry – all in **tax terms**<sup>26</sup>. To arrive at the specific multiplier effect associated with AfC staff's consumption expenditures, we then calculated a **weighted average multiplier across all industries** (weighted by the level of total UK household consumption expenditure on each sector<sup>27</sup>). This was estimated at **2.03**, implying that **every £1m of direct tax revenues generated from AfC staff's consumption expenditures is expected to generate an additional £1.03m in indirect and induced tax revenues throughout the UK economy**. We then applied these multipliers to the direct tax revenues associated with AfC staff's consumption expenditures, to arrive at the total direct, indirect, and induced tax impacts generated by this spending.

Table 2 presents the resulting estimates of these wider tax impacts, again for the Baseline and under a hypothetical 5% or 10% AfC pay increase in 2021-22. In the **Baseline**, the wider direct, indirect, and induced tax revenues to the Exchequer associated with AfC staff's consumption expenditures in 2021-22 were estimated at **£10.48bn** (comprised of **£5.16bn** in direct tax revenues, and **£5.33bn** in indirect and induced tax revenues). Compared to this Baseline, a **5% increase** in pay would result in a **£0.44bn** increase in these wider tax revenues in 2021-22, to **£10.93bn** (including **£5.38bn** in direct tax and **£5.55bn** in indirect and induced tax). Finally, a **10% increase** in pay would result in a **£0.89bn** increase in these wider tax revenues in 2021-22, to **£11.37bn** (**£5.59bn** in direct tax and **£5.78bn** in indirect and induced tax).

**Table 2 Wider direct, indirect, and induced tax receipts associated with AfC staff in 2021-22, Baseline vs. 5%/10% increase in the total pay bill**

Type of impact	£bn in 2021-22			Difference to Baseline		
	Baseline	5% increase	10% increase	Baseline	5% increase	10% increase
Direct impact	£5.16bn	£5.38bn	£5.59bn	-	£0.22bn	£0.44bn
Indirect & induced impact	£5.33bn	£5.55bn	£5.78bn	-	£0.23bn	£0.45bn
<b>Total</b>	<b>£10.48bn</b>	<b>£10.93bn</b>	<b>£11.37bn</b>	<b>-</b>	<b>£0.44bn</b>	<b>£0.89bn</b>

Note: All values are presented in £bn in 2021-22 prices. Totals may not add up precisely due to rounding.

Source: *London Economics' analysis*

Hence, compared to the Exchequer cost of increasing the pay bill by 5% (**£1.70bn**) or 10% (**£3.40bn**) (see Section 2), the Exchequer would recoup a further **26%** of these costs (**£0.44bn** and **£0.89bn**,

2020), we assume an average household saving ratio of approximately **8.1%** of income over the period, which is closer to the long run average (**13.7%** in 2021, **7.0%** in 2022, **7.3%** in 2023, **7.6%** in 2024 and **7.4%** in 2025 and beyond (see Table 2.6 page 70 in Office for Budget Responsibility (2020a)).

<sup>25</sup> Specifically, we made use of 2016 UK Input-Output Tables to estimate the gross domestic product (GDP) generated by each UK industry (in 2016). Each industry's GDP was then multiplied by the total Exchequer tax revenues in 2016 as a proportion of total UK GDP (**34%**, based on Public Sector Finances data published by the Office for Budget Responsibility (2020b)); in other words, we assume the same ratio of tax to GDP across all industries). This allowed us to estimate the direct tax revenues generated by each industry. We then divided these tax revenues by each industry's output and calculated the weighted average ratio of tax revenues to output across all industries (weighted by the level of total UK household consumption expenditure on each industry).

<sup>26</sup> In mathematical terms, these are defined as:  $[\text{Direct tax revenue} + \text{Indirect tax revenue} + \text{Induced tax revenue}] / \text{Direct tax revenue}$ .

<sup>27</sup> i.e. we assume that AfC staff have similar expenditure patterns as UK households more generally.



respectively) through direct, indirect, and induced taxation receipts generated by AfC staff's additional consumption.

### Box 1 Wider economic benefits

The above-described analysis focused on the increased tax receipts that would be accrued by the Exchequer following the illustrative increases to the total pay bill. Although there have been suggestions that there should be some degree of pay restraint for public sector workers, either because of current government borrowing levels or for 'equity' reasons (i.e. because of the impact of the pandemic on employees in the private sector), these arguments are potentially misleading on a number of levels.

#### Debt and debt burden

First, there has been a suggestion that the level of government borrowing to fund current pandemic relief packages (i.e. the Coronavirus Job Retention Scheme) limits further government expenditure and necessitates an immediate response in the form of a public sector pay freeze. However, with interest rates at all-time lows, the **burden of debt interest payments** is significantly lower than at any point since the financial crisis, despite levels of debt being higher. It is key that the government focuses on the **affordability** of current debt (i.e. the debt burden), rather than the level of debt, in the knowledge that debt reduction can only occur through enhanced long-run tax receipts resulting from a thriving inclusive economy. The consequences of withdrawing much needed financial stimulus through public sector pay freezes would limit the economic recovery, limit tax receipts, and be self-defeating.

#### Boosting demand

Second, on the surface, imposing a pay freeze on public sector workers appears like a sensible policy from the government in response to its current financial challenges. However, in reality it is poor economics. Essentially, limiting salary increases will result in less disposable income circulating throughout the economy, and the businesses relying on a return to normality at the end of the pandemic will see consumers unable to make the purchases required to support firms in the longer term. Public sector pay freezes will simply destabilise the businesses that the government is attempting to support and prosper.

#### Which sectors of the economy would be impacted by the proposed pay increases?

Figure 3 presents the direct, indirect, and induced effect (in output terms) resulting from the proposed pay increases to Agenda for Change staff in England on the UK economy as a whole, broken down by sector. Although the analysis considers AfC staff in England only, given the supply chain links between England and the rest of the UK economy, the economic effects accrue throughout the entire UK. With the 1 million AfC staff in England making up approximately **4%** of the total English workforce<sup>28</sup>, the analysis illustrates the extent to which these AfC staff's consumption spending benefits different sectors throughout the UK economy.

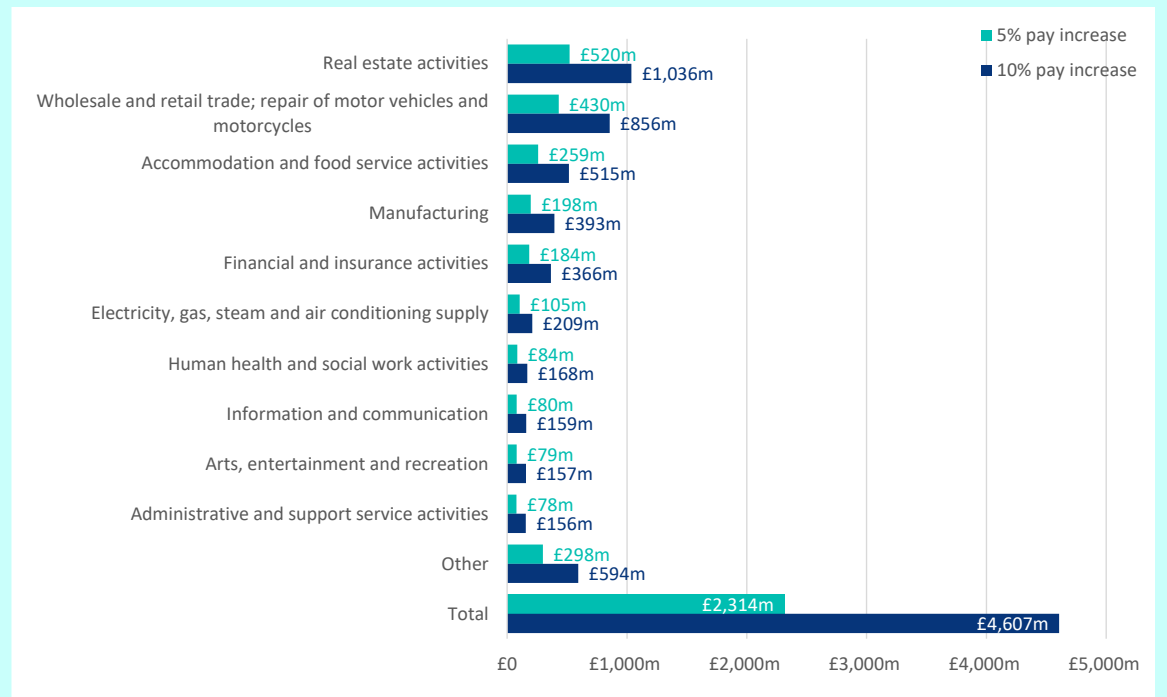
Focusing on the proposed 10% pay increase, the analysis suggests that the UK **real estate sector** would be boosted by **£1.036 billion**, while the **wholesale and retail trade industry**<sup>29</sup> and **hospitality industry** ('accommodation and food services') would be boosted by **£0.856 billion** and **£0.515 billion**, respectively. The analysis also identifies significant economic impacts on the **manufacturing sector (£0.393 billion)**, the **financial services sector (£0.366 billion)**, **utilities sector (£0.209 billion)**, **health and social work sector (£0.168 billion)**, **information and communication sector (£0.159 billion)**, the **arts, entertainment and recreation sector (£0.157 billion)**, and **administrative and support service activities (£0.156 billion)**.

<sup>28</sup> The Office for National Statistics (2020c) indicates that in 2019, there were approximately 27.2 million employees in England.

<sup>29</sup> This includes the repair of motor vehicles and motorcycles.

The total direct, indirect, and induced impact on economic output across the UK economy resulting from the illustrative 10% increase to the pay bill was estimated to be **£4.607 billion**. Most importantly, addressing the government’s ‘levelling up’ agenda, the impact of the increase in demand would be **experienced in every region and local economy across the entire United Kingdom**, and would provide long term support to all businesses currently experiencing fragile demand during the Covid-19 pandemic.

**Figure 3 Additional direct, indirect, and induced economic output associated with AfC staff in 2021-22 under a 5%/10% increase in total pay bill (compared to the Baseline) – by sector**



Note: All values are presented in £m in 2021-22 prices. Totals may not add up precisely due to rounding.  
 Source: London Economics' analysis

### 3.3 Cost savings from reduced reliance on Bank and Agency staff

To assess the Exchequer cost savings from the expected reduced reliance on Bank and Agency staff, we modelled the potential impact of the 5% or 10% increase in the total pay bill in 2021-22 on workforce recruitment and retention using data from Health Education England<sup>30</sup> covering **NHS nurses and midwives in England in 2021-22**<sup>31</sup>. This represents approximately **342,000** nurses and midwives in 2021-22, or roughly **one-third** of the workforce covered by the AfC in England.

In terms of the generation of cost savings, raising the pay for NHS nurses and midwives would be expected to **improve uptake and recruitment into the profession**, but also **bolster retention** in both the short and medium term (i.e. between 2021-22 and 2030-31). This would **reduce the ‘shortfall between supply (i.e. the ‘substantive’ NHS workforce) and demand (i.e. ‘Establishment’)**.

As Bank and Agency staff are more costly (by up to **56%** compared to the relevant AfC salaries), **the reduced reliance on Bank and Agency staff to cover the shortfall results in cost savings to the Exchequer over the 10-year period.**

To model these effects, we identified the impact of the pay increases in 2021-22 on the pool of nurses and midwives in 2021-22. As a result of reduced attrition, for (just) those nurses and

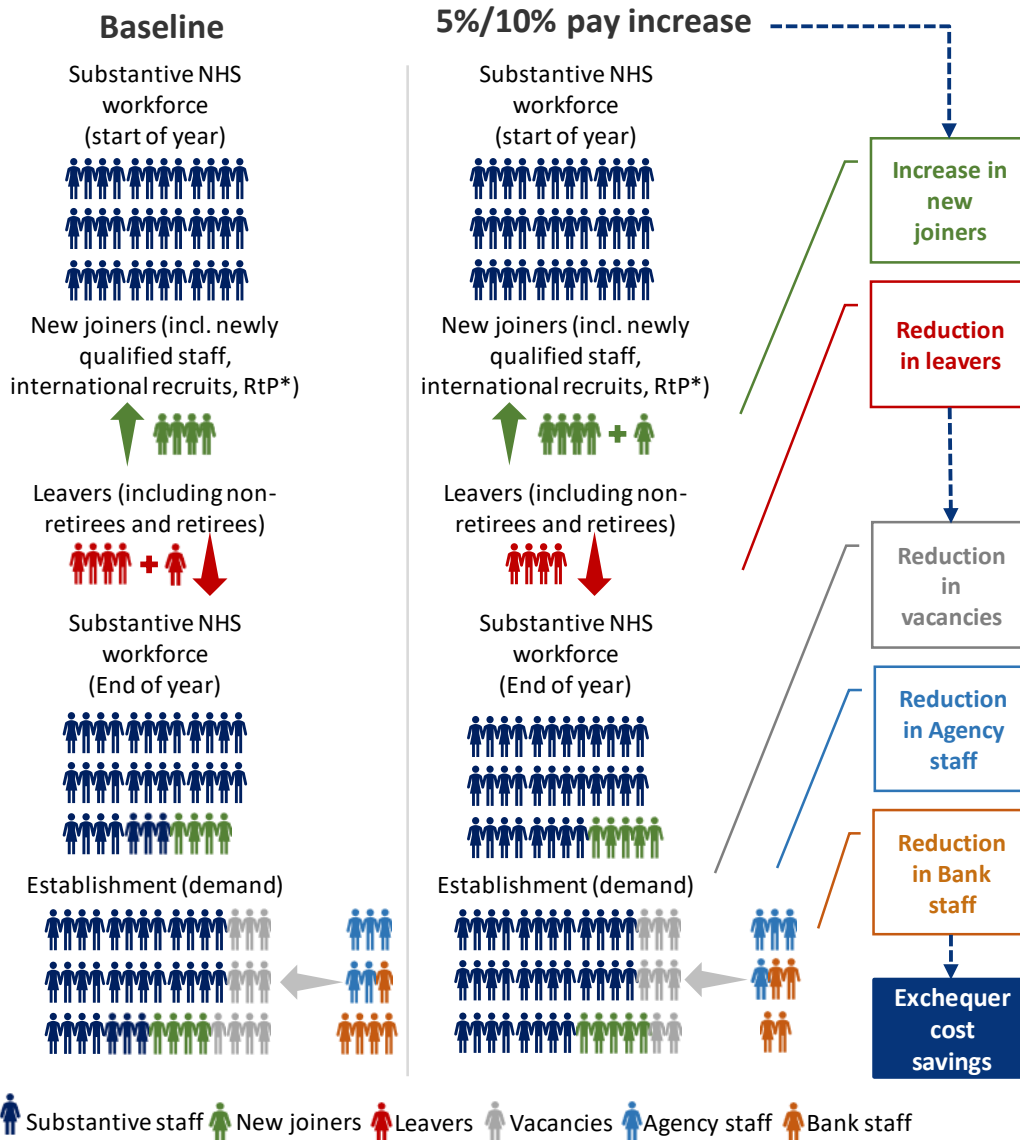
<sup>30</sup> Via the Health Education England ‘Electronic Staff Resource’ and ‘Parallel Tool’.

<sup>31</sup> Excluding community nursing. For more information on the definitions and assumptions used throughout the analysis, see Annex 2.



midwives expected to remain in the NHS following the pay increase, we track these ‘newly retained’ staff until 2030-31. We then estimate the total number of additional ‘person years’ supplied over the 10-year period (and the cost savings associated with reduced reliance on Bank and Agency staff).

**Figure 4 Illustration of the impact of a hypothetical pay increase on recruitment and retention within the NHS workforce**



Source: London Economics

### 3.3.1 What is the link between pay increases and improved recruitment and retention?

An increase in pay should lead to an **increase in the recruitment and retention of nurses and midwives in the NHS** (depending on the individual preferences of nurses and midwives and the wider labour market). There are **two standard measures of elasticity of supply**<sup>32</sup> – one relating to **recruitment** into the nursing profession, and one relating to **retention** (also known as ‘wastage’). As the decision to supply *extra* labour effort (i.e. retention) is more responsive to changes in pay than

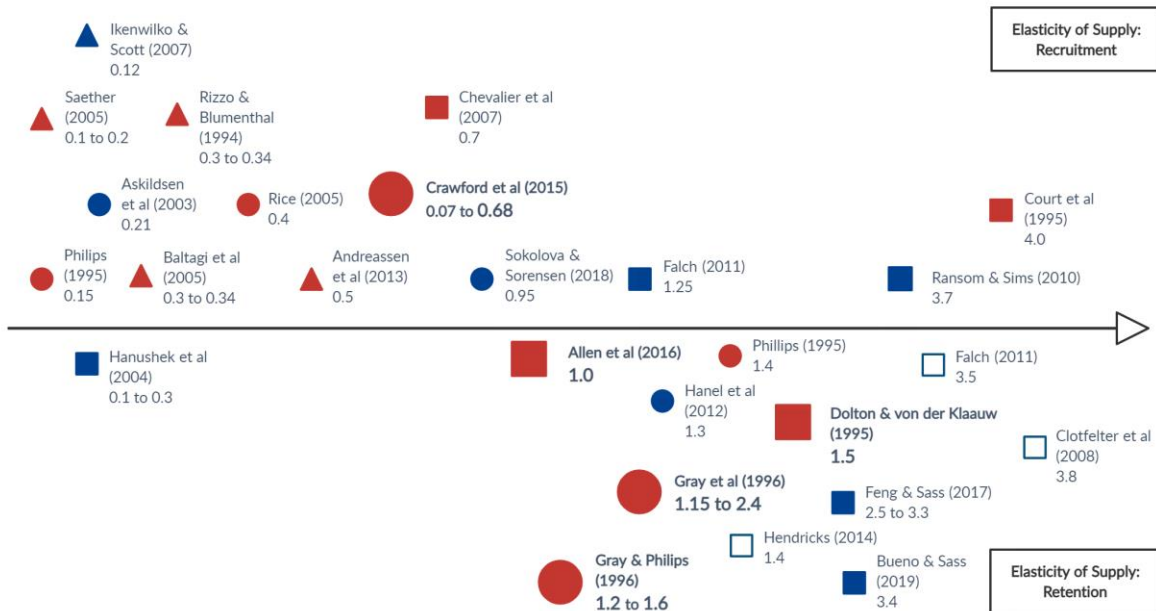
<sup>32</sup> The elasticity of labour supply (with respect to wages) is defined as the % change in hours worked (for instance) following a given change in wages.



the decision to enter the profession (i.e. recruitment), the elasticity of supply with respect to recruitment is normally lower than the elasticity of supply with respect to retention.

Presented in Figure 5 (upper left quadrant), the empirical literature suggests an **elasticity of supply of nurse recruitment** of between **0.1** and **1.0**. For instance, work by Crawford et al. (2015) found an elasticity of **0.68** in UK regions with more competitive labour markets (e.g. London).

**Figure 5 Estimates of elasticity of supply in public sector professions**



Source: London Economics' analysis

In comparison, the estimates of the **elasticity of supply of nurse retention** are greater, ranging from **1.0** to **2.4** (bottom right quadrant). Given that these estimates are also in line with other public sector professions, most notably teachers, an elasticity of supply of nurse retention of **1.2** was adopted in our analysis. In other words, this suggests that following a **10%** wage settlement, labour supply (i.e. labour retention) will increase by **12%**. Given that current attrition rates stand at **8.9%** per annum (for adult nursing), this suggests that the proposed **10%** wage settlement results in a reduction in the attrition rate by **1.1 percentage points**, to **7.8%** per annum (i.e.  $8.9\% \times [1 - 0.12]$ ).

### 3.3.2 Findings

Applying these estimates, as presented in Table 3, a **5% increase in the pay bill** for AfC staff would increase the number of NHS substantive staff (i.e. FTE person years, including nurses and midwives) by **10,896** over the 10-year period. This increase is primarily driven by the improved retention of existing staff in the 2021-22 cohort (**10,813**), but also the increase in the retention of newly qualified staff into this cohort (**83**). As a result, the shortfall between Establishment (i.e. required posts) and the substantive workforce would be expected to decline by **10,896** over the period, reducing the reliance on Bank staff (**5,454**) and Agency staff (**5,442**). In financial terms, despite the increase in the costs of newly retained substantive staff (**£0.35bn**), the lower costs associated with reduced reliance on Bank and Agency staff (**£0.18bn** and **£0.23bn**, respectively) would result in an overall cost saving to the Exchequer of **£0.06bn** over the 10-year period.

A **10% increase in the pay bill** would increase the number of NHS substantive staff-years by **21,790** over the period of analysis (again driven by the improved retention of existing staff (**21,622**) as well as the increase in the retention of newly qualified staff (**168**)). As a result, the shortfall between Establishment and the substantive workforce would be expected to decline by **21,790** over the



period, reducing the reliance on Bank (**10,907**) and Agency staff (**10,883**). In financial terms, again the increase in costs of newly retained substantive staff (**£0.70bn**) would be outweighed by the cost savings from the reduced reliance on Bank and Agency staff (**£0.37bn** and **£0.46bn**, respectively). The overall cost savings to the Exchequer would thus stand at **£0.13bn** over the 10-year period.

**Table 3 Impact on reliance on Bank and Agency staff (in terms of # of staff and associated workforce costs), Baseline vs. 5%/10% increase in the total pay bill**

# of staff/workforce costs	£bn in 2021-22			Difference to Baseline		
	Baseline	5% increase	10% increase	Baseline	5% increase	10% increase
<b># of staff (FTE person years), 2021-22 – 2030-31</b>						
<b>Establishment</b>	<b>3,538,936</b>	<b>3,538,936</b>	<b>3,538,936</b>	-	-	-
<b>NHS substantive staff</b>	<b>2,954,053</b>	<b>2,964,949</b>	<b>2,975,843</b>	-	<b>10,896</b>	<b>21,790</b>
Retained	2,642,651	2,653,464	2,664,273	-	10,813	21,622
Newly qualified	137,309	137,392	137,477	-	83	168
International	12,251	12,251	12,251	-	-	-
Return to Practice	580	580	580	-	-	-
Other joiners	161,262	161,262	161,262	-	-	-
<b>Shortfall</b>	<b>584,883</b>	<b>573,987</b>	<b>563,093</b>	-	<b>(10,896)</b>	<b>(21,790)</b>
Bank staff	292,773	287,319	281,866	-	<b>(5,454)</b>	<b>(10,907)</b>
Agency staff	292,110	286,668	281,227	-	<b>(5,442)</b>	<b>(10,883)</b>
<b>Workforce costs (£bn), 2021-22 – 2030-31</b>						
Newly retained staff	-	£0.35bn	£0.70bn	-	£0.35bn	£0.70bn
Bank staff	£9.60bn	£9.41bn	£9.23bn	-	<b>(£0.18bn)</b>	<b>(£0.37bn)</b>
Agency staff	£12.01bn	£11.78bn	£11.55bn	-	<b>(£0.23bn)</b>	<b>(£0.46bn)</b>
<b>Total</b>	<b>£21.60bn</b>	<b>£21.54bn</b>	<b>£21.48bn</b>	-	<b>(£0.06bn)</b>	<b>(£0.13bn)</b>

Note: All monetary values are presented in £bn in 2021-22 prices and discounted to net present values. Totals may not add up precisely due to rounding. *Source: London Economics' analysis*

In other words, in addition to contributing to the government's commitment to increase the number of NHS nurses by 50,000 (by **10,896** or **21,790** employment years, respectively), under a 5% or 10% pay increase, the increase in recruitment and retention within the substantive workforce would result in an overall *decline* in the pay bill associated with the newly retained substantive nursing and midwifery workforce, Bank staff, and Agency staff.

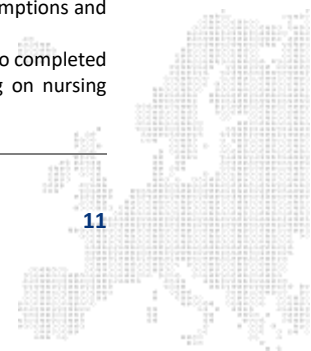
### 3.4 Cost savings from reduced student loan write-offs for nursing students

Finally, an increase in pay for AfC staff is expected to result in an increase in the student loan repayments made by students undertaking nursing degrees, therefore **reducing the Exchequer cost of providing student loans** (by reducing the value of loans expected to be written off).

To assess these benefits, we used our previous modelling<sup>33</sup> estimating the Exchequer cost associated with student support funding provided to nursing students<sup>34</sup>. Specifically, the analysis focuses on the 2017-18 cohort of first-year English domiciled students who started full-time first-degree nursing courses at Higher Education Institutions in England. We assess the Exchequer cost of providing **tuition fee and maintenance loans** to these students during their studies, captured by the amount of these loans expected to be written off at the end of the repayment period (captured by the **Resource Accounting and Budgeting (RAB) charge**). This is estimated separately for the

<sup>33</sup> Note that the previous analysis was updated to reflect more recent estimates/forecasts for average earnings growth and RPI inflation (as published by the Office for Budget responsibility, as available). In addition, whereas the previous model presented all results in 2017-18 prices, the estimates here have been updated with inflation to reflect 2021-22 prices. For more information on the assumptions and methodology underlying the analysis, see Annex 2.

<sup>34</sup> Clearly, similar cost savings to the Exchequer will arise from reduced student loan write-offs for other types of AfC staff who completed higher education qualifications supported by public student loans; however, given the focus of our previous modelling on nursing students, these additional impacts are excluded from the analysis.





**Baseline**, as well as **assuming an across-the-board increase in the cohort's post-graduation earnings of 5% or 10%** (from 2021-22 onwards<sup>35</sup>).

As presented in Table 4, in the **Baseline**, the total Exchequer cost of the loan write-off for the 2017-18 cohort of nursing students in England was estimated at **£0.35bn**, consisting of **£0.15bn** in maintenance loans and **£0.21bn** in tuition fee loans that are never repaid (based on a RAB charge of **51%**).

Compared to this Baseline, a **5% increase** in pay in 2021-22 would reduce the RAB charge to **42%**, with a resulting **£0.07bn** reduction in the loan write-off associated with the cohort, to **£0.29bn**. This includes a **£0.03bn** reduction in maintenance loans and a **£0.04bn** reduction in tuition fee loans that are never repaid. A **10% increase** in pay in 2021-22 would reduce the RAB charge even further, to **32%**. This would result in a **£0.13bn** reduction in the Exchequer cost of loan write-offs for the cohort, to **£0.22bn** (comprised of a **£0.06bn** reduction in maintenance loan write-offs, and a **£0.08bn** reduction in tuition fee loan write-offs).

**Table 4 Exchequer cost of student loan write-offs for the 2017-18 cohort of English domiciled full-time undergraduate nursing degree students studying in England, Baseline vs. 5%/10% increase in the total pay bill**

Type of student loans	£bn in 2021-22			Difference to Baseline		
	Baseline	5% increase	10% increase	Baseline	5% increase	10% increase
Maintenance loans	£0.15bn	£0.12bn	£0.09bn	-	(£0.03bn)	(£0.06bn)
Tuition fee loans	£0.21bn	£0.17bn	£0.13bn	-	(£0.04bn)	(£0.08bn)
<b>Total</b>	<b>£0.35bn</b>	<b>£0.29bn</b>	<b>£0.22bn</b>	<b>-</b>	<b>(£0.07bn)</b>	<b>(£0.13bn)</b>

Note: All values are presented in £bn in 2021-22 prices. Totals may not add up precisely due to rounding.

Source: *London Economics' analysis*

<sup>35</sup> We assume that any earnings uplift is permanent from 2021-22 onwards. Note that the model includes *all* nursing students, irrespective of whether they enter the NHS workforce post-graduation. We assume that the 5%/10% pay increase would apply to *all* students in the 2017-18 cohort expected to complete their degrees, irrespective of whether they subsequently work for the NHS or elsewhere.



## 4 Net Exchequer impact

The headline cost associated with a 5% or 10% increase in the total pay bill for staff covered by Agenda for Change (in England only) in 2021-22 was estimated to be **£1.70bn** or **£3.40bn**, respectively.

Offsetting this cost, the aggregate Exchequer benefit resulting from a **5% increase** in the total pay for AfC staff in 2021-22 was estimated at **£1.37bn** (see Table 5). This consists of:

- **£0.79bn** in additional tax receipts from AfC staff (and their employers);
- **£0.44bn** in wider direct, indirect, and induced tax receipts generated by AfC staff's increased consumption;
- **£0.06bn** in cost savings from the improved recruitment and retention of NHS nurses and midwives; and
- **£0.07bn** in cost savings from lower student loan write-offs for nursing students.

As a result, the Exchequer would recoup **81%** of the costs of providing this increase<sup>36</sup> (**£1.37bn** in benefits compared to **£1.70bn** in costs), with a net cost of **£0.33bn**. In other words, the illustrative 5% increase in the total bill for AfC staff would only result in an *effective 1%* increase in the Exchequer cost of AfC pay as compared to the Baseline.

The aggregate Exchequer benefit arising from a **10% increase** in the total pay for AfC staff in 2021-22 was estimated at **£2.74bn**, consisting of:

- **£1.60bn** in additional tax receipts from AfC staff (and their employers);
- **£0.89bn** in wider direct, indirect, and induced tax receipts generated by AfC staff's increased consumption;
- **£0.13bn** in cost savings from the improved recruitment and retention of NHS nurses and midwives; and
- **£0.13bn** in cost savings from lower student loan write-offs for nursing students.

Again, the Exchequer would thus recoup **81%** of the costs of providing this pay increase (**£2.74bn** in benefits compared to **£3.40bn** in costs), with the net cost to the Exchequer standing at **£0.66bn**. Hence, the illustrative 10% increase in total pay bill for AfC staff would only result in an *effective 2%* increase in the Exchequer cost of AfC pay as compared to the Baseline.

**Table 5 Exchequer costs and benefits associated with a 5%/10% increase in the total AfC pay bill in 2021-22 (difference to Baseline)**

Exchequer impact	5% pay increase	10% pay increase
<b>Costs</b>	<b>£1.70bn</b>	<b>£3.40bn</b>
Additional income tax and NI receipts from AfC staff	£0.79bn	£1.60bn
Additional wider tax receipts from AfC staff's consumption	£0.44bn	£0.89bn
Cost savings from reduced reliance on Bank and Agency staff	£0.06bn	£0.13bn
Cost savings from reduced student loan write-offs	£0.07bn	£0.13bn
<b>Benefits</b>	<b>£1.37bn</b>	<b>£2.74bn</b>
<b>Net costs</b>	<b>£0.33bn</b>	<b>£0.66bn</b>

Note: All values are presented in £bn in 2021-22 prices and discounted to net present values where relevant (applicable to the cost savings from reduced reliance on Bank and Agency and from reduced student loan write-offs only). Totals may not add due to rounding.

Source: London Economics' analysis

<sup>36</sup> Note again that due to data limitations, this analysis considers only those staff in England covered by Agenda for Change. However, it is likely that if the comparable analysis were undertaken for Agenda for Change staff in Scotland, Wales and Northern Ireland, similar impacts would be identified (i.e. it is likely that a similar proportion of the costs of such pay increases in other Home Nations would be recouped by the Exchequer).



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## ANNEXES



## Annex 1 References

### A1.1 Literature on the elasticity of supply for nurses

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## Annex 2 Supplementary information

### A2.1 Assumptions and methodology underlying the analysis of the cost savings from reduced reliance on Bank and Agency staff

The key **definitions** underlying the analysis of the Exchequer cost savings from reduced reliance on Bank and Agency staff are as follows:

- **Establishment:** Total funded posts (i.e. demand for nurses and midwives);
- **Turnover:** Total number of **leavers** from staff-in-post at the start of the year, incorporating both **retirements** and **non-retirements**;
- **Joiners** (Newly Qualified): Individuals entering the workforce from the education commissioning process
  - **Starters:** The number of education commissions that are commenced;
  - **Completers:** The number of students who complete their course after accounting for **in-course attrition and failures**;
  - **Uptake rate:** Percentage of graduates, by profession, who are trained and go on to work for the NHS in the profession they were trained;
- **Joiners** (Excluding Newly Qualified): Individuals joining the profession (including those returning to practice) but *not* through education commissioning;
- **Retained Workforce:** The difference between staff-in-post at the start of the year and the total number of leavers;
- **Staff-in-post** (end of year) = **Staff-in-post** (Start of year) - **Leavers** + **Joiners (Newly Qualified)** + **Joiners (Excluding newly Qualified)**; and
- **Shortfall** from total demand = Establishment – Staff-in-post (end of year).

The key **assumptions** underlying the analysis are as follows:

- **Staff-in-post (end of year)** is made up of:
  - The **retained workforce** from the previous year following expected turnover (which ranges between **7.7% and 15.5%** depending on the specific occupation<sup>37</sup>);
  - **Newly qualified staff** completing their learning from previous years' commissions (following adjustments for in-course attrition, failures and uptake post-completion); and
  - **New joiners** (not through education commissioning, i.e. excluding newly qualified staff).
- **If there is a 'gap' between the estimated supply and Establishment**, this 'gap' filled from two sources (derived from NHS Improvement data):
  - **Bank staff** – 50.1% of shortfall;
  - **Agency staff** – 49.9% of shortfall;
- It is also assumed that **vacancies** (unfilled posts) exist (set at **3%** of Establishment)
- The estimated **Bank Staff 'premium'** was estimated to be **7%** compared to typical NHS substantive nursing and midwifery staff (assuming mid-Band 5 including unsocial hours pay and **13.8%** employer on-costs); and

<sup>37</sup> Based on the **Electronic Staff Resource** and the '**Parallel Tool**'.





- The estimated **Agency Staff 'premium'** was estimated to be **56%** (including Agency commission) compared to typical NHS substantive nursing and midwifery staff (assuming mid-Band 5 including unsocial hours pay and 20% employer on-costs).

## A2.2 Assumptions and methodology underlying the analysis of the cost savings from reduced student loan write-offs for nursing students

We applied the following assumptions and methodology in relation to the **student profile** of the 2017-18 cohort of students, and the corresponding **post-graduation earnings and employment** of these students:

- The model considers the total number of **full-time English domiciled first year students undertaking first degrees in nursing at English Higher Education Institutions**. Based on data from the Higher Education Statistics Agency (provided by the Royal College of Nursing), there were a total of **16,020** students of these characteristics in 2016-17 (the most recent year for which this information was available at the time of the original analysis), and we assumed the same number and characteristics of these students in 2017-18.
- To arrive at these students' **continuation/completion rates**, using 2015-16 data provided by Health Education England, the total number of actual starts in 7 nursing professions (incl. Adult, Child, Mental Health, Learning Disabilities, School, District and Health Visiting) is calculated using the number of planned commissions and the commission post fill-rate. A total of 21,690 students started a nursing qualification for these 7 professions in 2015-16. Using in-course attrition rates provided at Local Education and Training Board (LETB) and profession level, the number of completers by LETB and profession is determined and aggregated up to get total completers in England. This is equal to 17,177, suggesting an attrition rate of **20.8%**. It should be noted that this includes all types of courses (degree (2- and 3-year), diploma and Masters).
- The analysis is undertaken by **gender** – assuming that **90%** of nursing graduates are **female**, and that **10%** are **male** (based on UCAS data).
- We assume an average age at enrolment of **24** (based on UCAS data provided by the Royal College of Nursing), and an average study duration of **3 years**.
- We use pooled Quarterly Labour Force Survey data (for Q1 2001 to Q4 2017) to estimate the **average earnings** of individuals in possession of first degrees as their highest qualification, and whose occupation is defined as **nursing** (defined using SOC2010 code 2231). Average earnings were estimated separately by gender and age band (from which we generated 'smoothed' age-earnings profiles by gender) and calculated in January 2017 prices. We then adjusted these age-earnings profiles for employment probabilities, using pooled Quarterly Labour Force Survey data (for Q1 2004 to Q4 2017) on the **average probability of employment** among individuals in possession of a first degree in nursing (not necessarily as their highest qualification), again by gender and age band (and again 'smoothed' out by age).
- To assess the **impact of a 5%/10% pay increase** in 2021-22, we then apply these uplifts to the estimated average (employment-adjusted) graduate age-earnings profiles (by gender), from 2021-22 onwards (i.e. assuming that the increase would be permanent).

We then applied the following assumptions and methodology in relation to the **loan outlay, repayments, and resulting Exchequer costs** associated with the relevant cohort:

- Based on data from the Higher Education Statistics Agency, to determine the size of **maintenance loans** received, first year students are categorised by location of study and



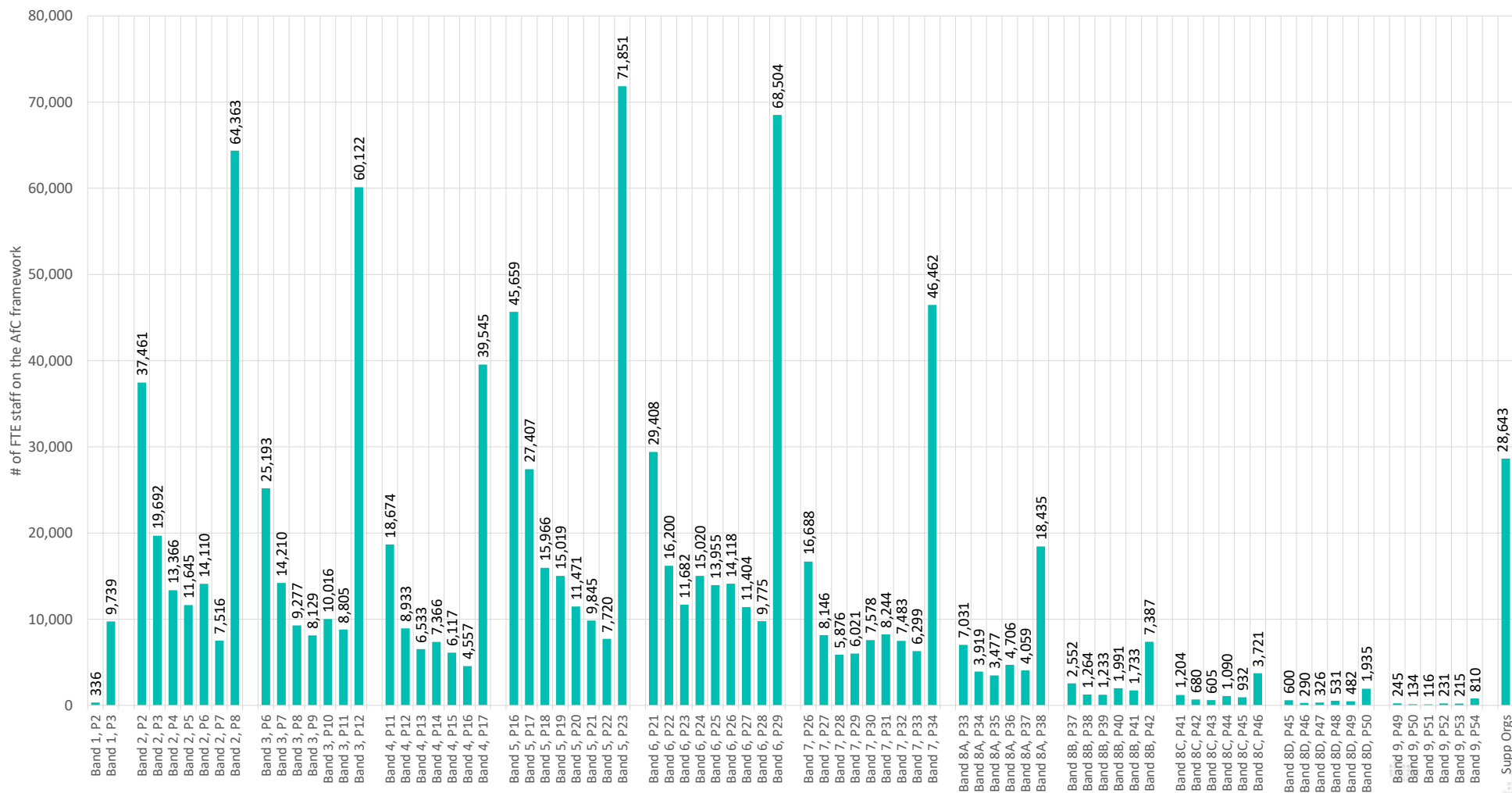
living arrangements whilst in study. We assume that all students take out the maximum available loan to which they are entitled, and we base eligibility for loans using information from SLC Statistical First Releases on the proportion of students that were previously in receipt of full or partial maintenance grants (to determine the distribution of students by household income band). Based on this, the average maintenance loan received by a full-time first degree undergraduate student stands at approximately **£6,540** per student per annum.

- We have modelled **maintenance loan eligibility**, by **location of study** (i.e. Living at Home (**21%** (full-time students)), Living away from home outside of London (**67%**), and Living away from home in London (**12%**) (based on HEFCE data)) - using the 2017-18 income thresholds provided by the Student Loans Company.
- The average gross tuition fee in 2017-18 was **£9,250**, but, as a result of Access agreements and the provision of bursaries and fee waivers by higher education institutions, the net tuition fee was lower (**£9,100**). We have assumed that fees do not increase over the duration of students' courses.
- Loans accumulate **interest** at RPI +3% during the period of study. Post graduation, loans accumulate interest depending on earnings, with individuals earning **£25,000** incurring a 0% real rate of interest, increasing to 3% real rate of interest on earnings of **£45,000** per annum or above. We assume that loan repayment is 9% of earnings in excess of **£25,000** per annum (in 2017-18).
- We assume that all loans are **written off 30 years from the Statutory Repayment Due Date** (SRDD) – which we assume to be the first year post-graduation.
- We assume that **all thresholds increase in line with average nominal earnings growth** (with forecasts taken from medium term and long term forecasts by the Office for Budget Responsibility, published in March 2019 ([here](#)), March 2020 ([here](#)), and November 2020 ([here](#)), respectively).
- In relation to the estimation of the Resource Accounting and Budgeting (RAB) charge (i.e. the proportion of loans expected to be written off), we assume a **real discount rate** of **0.7%** as per standard Her Majesty's Treasury (HMT) practice with respect to student loans accounting. In relation to all other financial flows (including Exchequer costs), we assume the HMT real discount rate of **3.5%**.
- All nominal price levels were adjusted to (real) constant 2021-22 prices using the Office for Budget Responsibility's medium term and long-term forecasts of the Retail Price Index.



### A2.3 Number of staff on the Agenda for Change framework

Figure 6 Number of staff on the Agenda for Change framework (FTE) in 2019-20, by spine point



Note: 'Supp Orgs' refers to AfC staff in NHS Supporting Organisations and Central Bodies (for whom the comparable information by spine point was not available). Spine points are based on the previous spine point system (in use pre-2018-19). Gaps may arise where there are rates for a given spine point in 2020-21, but not in the respective base year of interest. Source: London Economics' analysis based on NHS Digital data



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