A review of school teachers' pay in England compared with other graduate professions

A report for NASUWT

by

Incomes Data Research

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1. Overview

1.1. Background and what the report covers

For many years now, successive School Teachers' Review Body (STRB) reports have outlined numerous problems associated with the teaching profession in terms of pay and recruitment and retention. Despite building evidence in favour of pay increases and other measures requiring Government investment, the overarching policy of financial restraint in the public sector has meant that recent STRB pay recommendations have always had to be moderated. As a result, not enough has been done to address the recruitment and retention challenges currently facing the profession.

The latest STRB report represents a break from the past, having recommended a larger headline increase than for many years. The recommended award of 3.5% was only partially implemented by the Government, however, and as such may not be enough to positively impact recruitment and retention pressures. As the STRB report itself stated: 'action was required to make the teachers' pay framework more competitive' given the 'deteriorating trends in the earnings of teachers compared to those in other graduate careers and in teacher recruitment and retention' mentioned in 2017. It is against this background that we have produced this latest report for the NASUWT. This year's report builds on our earlier work in this area. In 2015, our report covered the UK as a whole but in the last few years the research has focused specifically on England. As in previous reports, this latest study presents a detailed picture of how earnings for teachers have varied in relation to those for other graduate occupations.

This year's study includes a change in the period under focus compared to previous reports, examining the years since 2007 rather than 1998. One reason for the change is that the economic and working environments have altered markedly since 1998, so a 20-year period of comparison is no longer such a useful barometer of change. In particular, we wanted to examine the period just before the economic crisis that began in 2008, as well as the period since then. Additionally, since 1998, some of the job categories defined by the Office for National Statistics (ONS) have undergone numerous changes making cross-year comparisons over the longer period less valid.

As a result, this latest report examines pay data drawn from the ONS Annual Survey of Hours and Earnings (ASHE) for school teachers and a basket of selected comparator graduate occupations over the 12-year period from 2007 to 2018. More specifically, the report focuses on basic and gross weekly full-time earnings in England from ASHE for 10 non-teaching graduate occupations, making it

possible to examine how their earnings compare to those for school teachers – both secondary teachers and those in primary and nursery schools – over the same period.

The 10 graduate occupations used for comparisons are:

- Chemical scientists
- Biological scientists and biochemists
- Physical scientists
- Engineering professionals
- Health professionals
- Pharmacists
- Legal professionals
- Chartered and certified accountants
- Management consultants and business analysts
- Chartered surveyors.

As well as a comparison of actual earnings, the report analyses the annual percentage changes in median and average basic weekly earnings for teachers in England and each of the selected comparator occupations in relation to both the CPI and RPI rates of inflation from 2007 to 2018.

In addition, the report examines developments in teachers' pay in England in the wider context of changes in the graduate labour market in the UK as a whole. In particular it outlines how the salaries of teachers in England in the early stages of their careers compare with pay levels found in other major graduate professions. This analysis uses information collected by the latest IDR pay and progression for graduate survey. The survey collects a range of data from major UK graduate recruiters including graduate starting salaries, and details of salary progression for graduates three and five years after initial hire. We have also used other sources of data on graduate salaries.

When reflecting on the results shown throughout the report, certain caveats need to be borne in mind. In particular, there are sample size limitations in some years for some of the occupations meaning variations in pay levels across years can appear quite volatile. Two in particular stand out – chemical and physical scientists – because the number of these roles is relatively low in the ASHE sample in some years.

Moreover, changes to some of the job definitions occurred in 2010 as part of the ONS' regular review process that recognises that jobs are not static entities. There have been numerous changes over the years and in 2010 the ONS tightened the definitions of managerial occupations and ensured recognition of relatively new areas of work such as call centres. In addition in 2010, the ONS also created a new 3-digit 'health professionals' subgroup which excluded general medical practitioners (GPs). Prior to this the 2-digit major group named 'health professionals' included both GPs and other health professionals. As a result of this change, all the earnings figures for aggregate health professional fell between 2010 and 2011.

The final caveat is that while the job groups examined have been chosen specifically because they are tightly defined professions, because of the changing sample sizes and shifting job definitions all the cross-year comparisons are unmatched and need to be treated with the appropriate degree of caution.

1.2. Structure of the report

Chapter 2 provides a brief context for the research, highlighting the STRB's main findings, while in Chapter 3 we look more closely at how pay awards for school teachers in England have compared with whole-economy pay increases since 2007.

Chapter 4 provides an overview of the graduate labour market in England and analyses results from the IDR 2017 graduate recruitment and salary survey (and other sources) and reviews how starting salaries for graduates in England compare with those for school teachers in England**.**

Chapter 5 focuses on the ASHE analysis and reviews the median and average earnings differentials between school teachers and other comparator graduate professions for three of the 12 years – 2007, 2012 and 2018 – to establish earnings trends at the start, middle and end of the review period. We have also conducted an extended analysis focusing on lower and upper earnings quartiles for all the professions to determine how differentials vary beyond midpoint levels as measured by median and average statistics.

Chapter 6 examines the annual percentage un-matched changes in median and average basic earnings for school teachers and each of the main comparator graduate professions, tracked against average annual RPI and CPI inflation.

Full details of indexed median and average earnings differentials for the graduate and teaching occupations reviewed are presented in the appendices, together with median and average actual full-time earnings data contained in ASHE for all of the occupations over the 12 years. Our methodology in using ASHE for this research is shown in Appendix 9.

1.3. Recent pay deals

Data on pay movements demonstrates clearly that teachers in England have not had significant real-terms pay increases since before the recession a decade ago. The latest award meant that some teachers received a real-terms increase. But while the teachers on the main pay range received 3.5%, at a point when the RPI was 3.3% and the CPI 2.2%, teachers on the upper pay range received just 2%, below both measures of inflation. The latest workforce census indicates that some 43% of teachers are on the main pay range, while the proportion on the upper pay range is 42.4%. The remainder (some 14%) are on the leadership ranges, where the pay award was just 1.5%.

As well as an overall real-terms erosion of pay, increases for teachers in England have mostly trailed those received by other occupational groups since 2011. At that time, the teaching profession was subject to the two-year public sector pay freeze and since then schools have mostly had to work within a 1% pay cap up to 2017. In 2017, the cap was raised a little with a 2% rise for teachers on the main range (though teachers on the upper range only received 1%). In 2018, the review body recommended that all teachers should receive a 3.5% increase but this rise was only applied to the main scale while those on the upper scale got just 2%.

Up until 2014, the impact of low or no pay rises may have been mitigated to some extent for eligible staff by automatic salary progression increases. However, schools in England now have discretion over how and whether to pay progression increases to individual teachers unless they are at the bottom of the salary range. This is a significant departure from the previous pay system meaning that some teachers may no longer receive a pay rise at all.

Although still too early to determine the long-term effect of this major change, it is likely to mean a further erosion of real pay growth for many teachers in the coming years. In fact, many of those representing the teaching side consulted by the STRB in the latest year argued that these new pay flexibilities are being used to hold down pay for financial reasons rather than reward exceptional performance. This echoes findings from the Institute for Employment Research at the University of Warwick outlined in the previous year's STRB report.

1.4. Pay rankings

The latest available NASUWT survey of English members' views from 2017 showed that 69% of teachers were seriously considering leaving their jobs while 61% were considering quitting the profession altogether. The survey highlighted a range of reasons behind members' decisions to consider leaving the profession and pay was high up the list. Such views may only be based on perceptions but an examination of the latest evidence comparing median and average gross earnings of teachers with those of 10 other graduate professions supports the view that pay in teaching is comparatively low.

Table 1, for example, illustrates that when measured by median gross earnings the two teaching groups were ranked at or near the bottom of the pay comparison table in almost every one of the three years shown (in every year for primary teachers and two out of three years for secondary teachers). In 2018, for instance, secondary teachers were ranked eighth (out of twelve) while primary and nursery school teachers were positioned tenth.

Table 1: Ranking of median gross earnings levels of selected graduate professions in England 2007, 2012 and 2018

Group	2007 rank	2012 rank	2018 rank
Secondary education teachers	6	9	8
Primary and nursery education teachers	12	10	10

Source: ASHE

Table 2 overleaf shows average earnings, and measured in this way teachers' ranking was even lower. In 2018, for instance, secondary teachers were placed ninth while primary and nursery school teachers were the lowest-paid of all the occupations analysed. As well as teachers, some other professions show comparatively low average earnings. Most notable among this group were chartered surveyors and chemical scientists, who ranked eleventh and twelfth respectively based on median figures, and tenth and eleventh respectively based on averages.

Differences between the median and average figures occur because medians, since they register the middle value within a distribution, tend to measure 'typical' earnings. In contrast, averages factor in the whole distribution to a greater extent and so are more strongly affected by very high or low values.

Table 2: Ranking of average gross earnings levels of 12 graduate professions in England 2007 to 2018

Group	2007 rank	2012 rank	2018 rank
Secondary education teachers	9	10	9
Primary and nursery education teachers	12	12	12

Source: ASHE

For most professional and managerial occupations, average pay figures usually exceed medians because such groups often contain a higher proportion (compared to non-professionals) of senior employees with longer job tenure and therefore comparatively higher pay levels. This is also true for the two teaching groups although the differences are very small. For example, the primary teacher average is only 0.3% greater than the corresponding median while the equivalent differential for secondary school teachers is just 2.3%. By contrast, the average-median differentials for the other 10 professions ranged from 4.3% for pharmacists to over 20% for health and legal professionals.

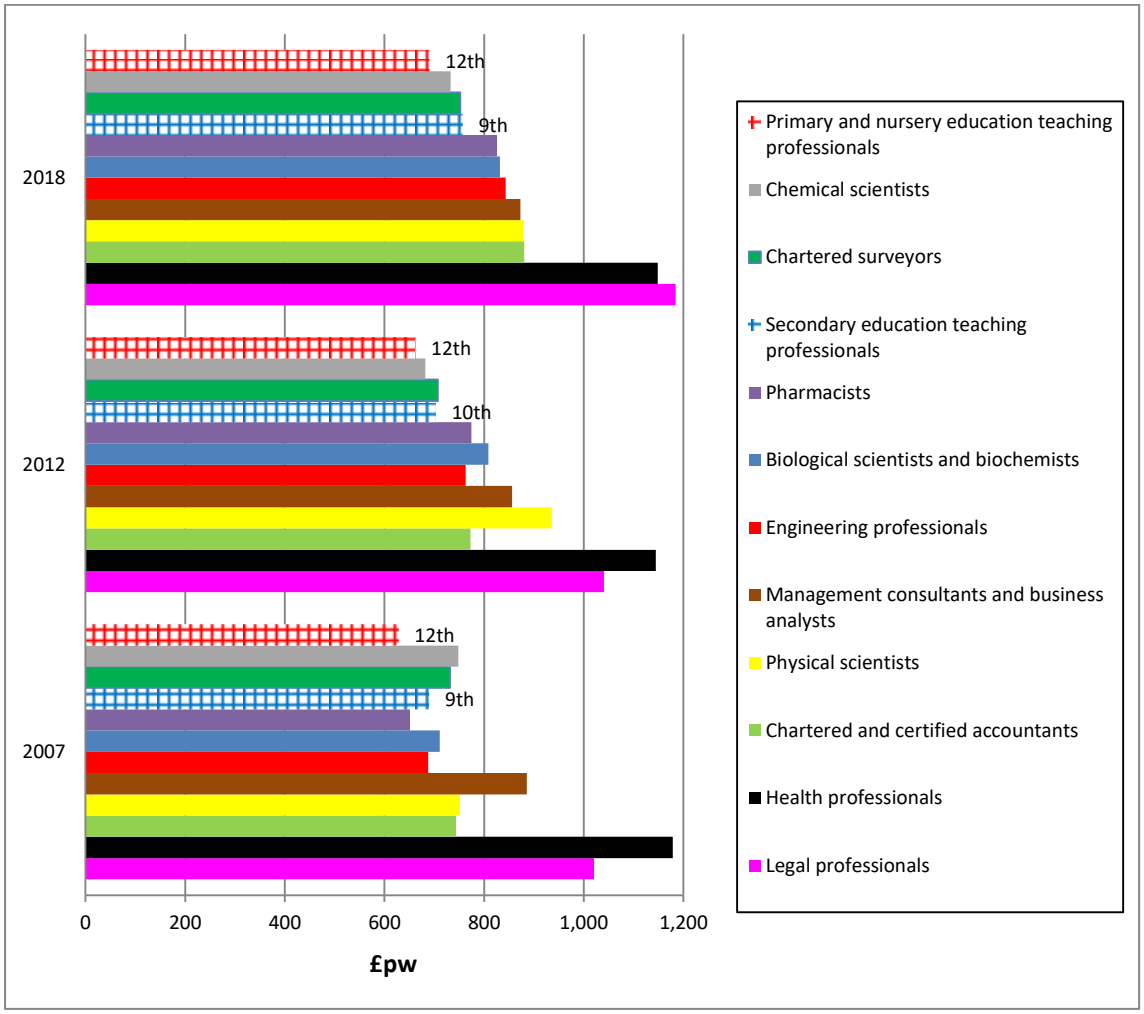
Due to these differences, median earnings for teachers in England are relatively uncompetitive compared to those for other professions. When we use averages the picture is even less favourable for teachers. The averages for non-teaching jobs are significantly higher in many cases, the teaching rank falls to or near the bottom of the earnings comparison league.

1.5. Magnitude of pay gaps

Rankings like the ones above, however, do not provide any insight into the magnitude of gaps that currently exist between earnings for teachers and those for other professions. Comparing the earnings figures for each of the comparator groups with those of the two teacher groups shows whether any differentials are significant, as in Graph 1. As with the rankings above, the graph shows that average gross earnings for almost all the non-teaching professions are greater than those for teachers and also that in some cases the gaps are significant.

In particular, data for the latest year shows that legal and health professionals' average gross earnings far exceed those for the other groups. These were followed by earnings for a group of three professions – physical scientists, management consultants and chartered accountants. Slightly below these were earnings for engineers, biological scientists and pharmacists with secondary teachers, chartered surveyors, chemical scientists and primary and nursery teachers at the bottom of the earnings rankings for 2018.

Graph 1: Comparison of average gross earnings of all comparator graduate professions including school teachers in England: 2007, 2012 and 2018



Source: ASHE

1.6. Teachers' earnings persistently lag behind

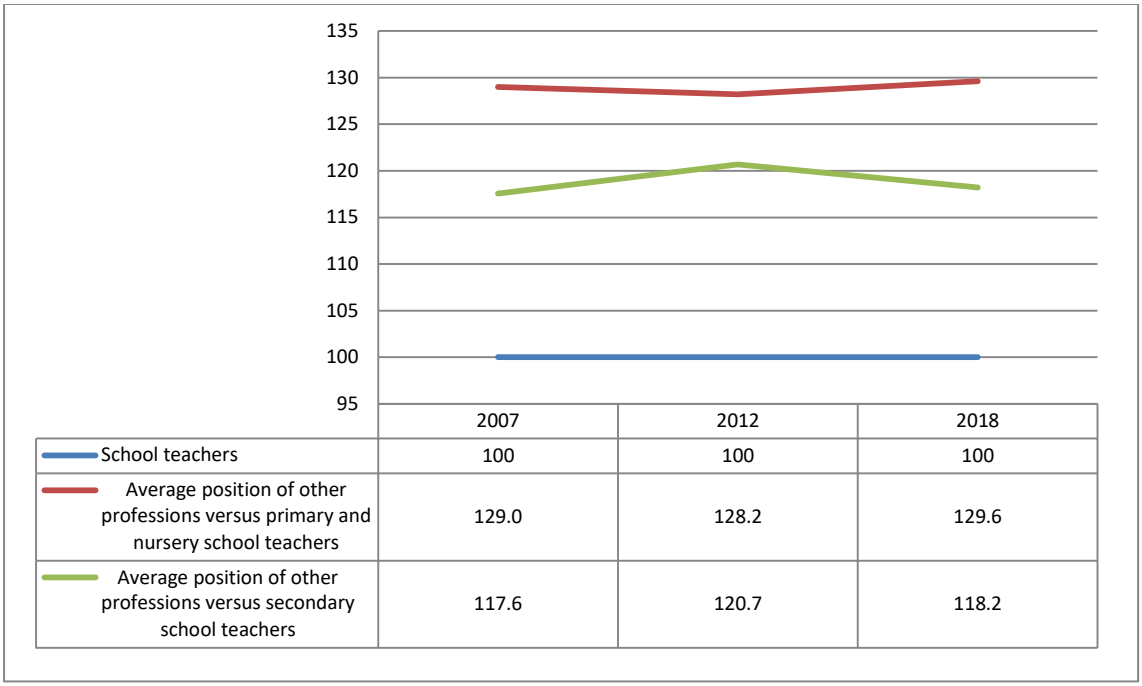
Another way to examine the differentials is to aggregate the data for non-teaching professions and compare this with earnings for each of the teaching groups. The results are presented in Graph 2 on an indexed basis, using school teachers' gross earnings as the base (=100) for each year.

The graph shows very significant differentials between earnings for both teaching groups and those for the combined profession group. In 2018, for example, average gross earnings for all comparator professions were 18.2% above those for secondary school teachers and 29.6% ahead of average earnings for primary school teachers.

Since 2012, there has been a slight narrowing of the earnings differential between primary teachers and those for the combined comparator group in England while the reverse was true for secondary

teachers. Nevertheless, throughout the period since 2007, there has been little variation with both teaching groups persistently lagging behind their comparators over the full 12-year period.

Graph 2: Indexed average gross earnings lead of all comparator graduate professions over school teachers: 2007, 2012 and 2018



	2007	2012	2018
School teachers	100	100	100
Average position of other professions versus primary and nursery school teachers	129.0	128.2	129.6
Average position of other professions versus secondary school teachers	117.6	120.7	118.2

Source: ASHE

It might be argued that combining all the earnings data for the other occupations into one aggregate figure is an oversimplification because the overall figure may be heavily influenced by particularly high or low amounts. For example, legal and health professionals stand out as groups that earn significantly more than most other professional occupations and are likely to present upward pressure on the combined figure.

To address this, Table 3 below provides an even clearer understanding of the magnitude of pay disparities between teachers and each individual graduate profession in 2018. It illustrates that median and average gross weekly earnings for teachers in England trailed those for almost all the other graduate professions.

For greater clarity, the table is colour-coded with differentials shaded blue where teachers' earnings are **lower** than those for the other professions and red where they are **higher**. It is clear that the table is predominantly blue – 82.5% – and also that, in many cases, the differentials are significant, especially when the average levels are considered. In fact, when the averages are examined,

earnings for just two of the professions – chemical scientists and chartered surveyors – trailed those for a teaching group. In these cases, the secondary teacher average lagged behind that for the two comparator groups by just 3.2% and 0.7% respectively. By contrast, average gross pay for the primary and nursery teacher group was lower than all the equivalent average figures for the non-teaching professions.

Table 3: Median and average gross weekly earnings differentials of 10 graduate professions versus teachers in England 2018

Group	Average gross weekly pay £pw	Differential with secondary teachers	Differential with primary and nursery teachers	Median gross weekly pay £pw	Differential with primary and nursery teachers	Differential with primary and nursery teachers
Secondary education teaching professionals	757.2			740.4		
Primary and nursery education teaching professionals	690.6			688.5		
Chemical scientists	732.8	-3.2	6.1	619.4	-16.3	-10.0
Biological scientists and biochemists	832.0	9.9	20.5	739.0	-0.2	7.3
Physical scientists	879.1	16.1	27.3	768.7	3.8	11.6
Engineering professionals	843.5	11.4	22.1	800.2	8.1	16.2
Health professionals	1,148.3	51.7	66.3	937.2	26.6	36.1
Pharmacists	825.8	9.1	19.6	791.8	6.9	15.0
Legal professionals	1,184.6	56.4	71.5	958.2	29.4	39.2
Chartered and certified accountants	880.2	16.2	27.5	761.7	2.9	10.6
Management consultants and business analysts	872.5	15.2	26.3	780.2	5.4	13.3
Chartered surveyors	751.8	-0.7	8.9	684.5	-7.5	-0.6

Source: ASHE

At the other end of the spectrum, the differentials in favour of many of the non-teaching groups were substantial. For instance, the average gaps between health and legal professionals were over 50% higher than those of secondary teachers and over 65% higher than the equivalent primary and nursery school figures.

1.7. Analysis of quartiles

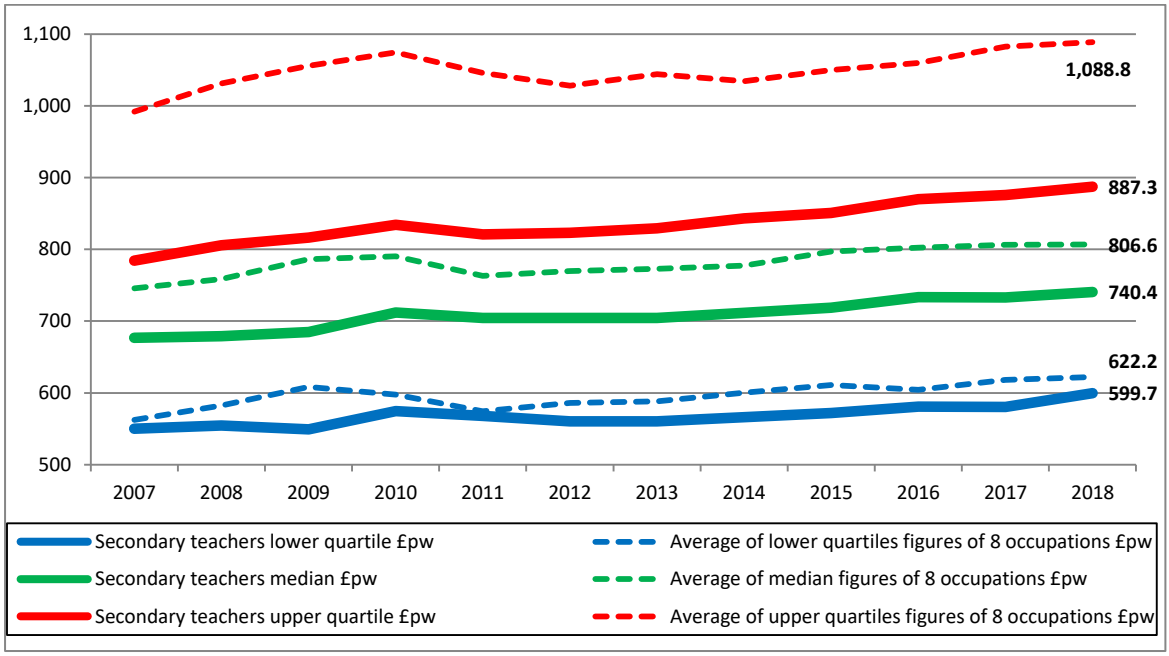
The analysis up to now has focused on median and average figures, illustrating that for every job examined, average gross pay is greater than the corresponding median level to some extent or other. In many cases, the differences between the averages and medians were quite large as illustrated in Table 3 previously. Where averages exceed corresponding medians it means that the whole earnings distribution contains a greater proportion of relatively higher-paid employees but beyond this we do not know the full extent or shape of the earnings range.

To gain a greater insight into the earnings of teachers and other professionals at the lower and higher ends of their respective pay distributions it is necessary to look at other statistics. This is why this year's report includes an extended analysis of lower and upper quartile gross earnings. This is particularly important because many in the teaching progression argue that their actual pay levels, while not being particularly competitive at the midpoint, fall further behind when roles at higher salary levels are considered.

Chapter 6 provides the full analysis but a summary of the main findings is presented here. Graph 3 overleaf demonstrates the aggregate picture by plotting the difference between the lower quartile, median and upper quartile gross earnings levels for secondary school teachers from 2007 to 2018 against the combined aggregate equivalent figures for a range of non-teaching comparators. The combined figures are calculated by taking the average of each profession's lower quartile, median and upper quartile which, in the absence of knowing the whole distribution of data for each profession, provide a broad indication of the trend in the combined pay ranges over the period. We examine eight professions for which data is available for the full period from 2007 to 2018.

What the graph shows is that all three figures – lower quartile, median and upper quartile – were greater for the non-teaching comparator group than for secondary school teachers throughout the period. More notable, perhaps, is that the gap between each statistic – lower quartile, median and upper quartile – for teachers and those for the other groups gets larger as we move from the lower- to higher-paid positions. For example, in 2018 the non-teaching lower quartile figure, at £622.20 per week, was only 3.8% higher than the equivalent teaching figure of £599.70. By contrast, the gaps for the medians and upper quartiles were larger, standing at 8.9% and 22.7% respectively in favour of the non-teaching groups.

Graph 3: Comparison of lower quartile, median and upper quartiles gross earnings per week for secondary school teachers and non-teaching combined comparator group 2007 to 2018



Source: ASHE

At the median, the non-teaching figure was £806.60 while the equivalent for teaching was £740.70. At the upper quartile the difference was over £200 per week with the figures standing at £1,088.80 and £887.30 respectively. This supports the view that differences in earnings between teachers and other professions, while a source of concern at lower and median levels, are even greater at higher earnings levels. Carrying out the same analysis for primary and nursery teachers resulted in even greater differentials.

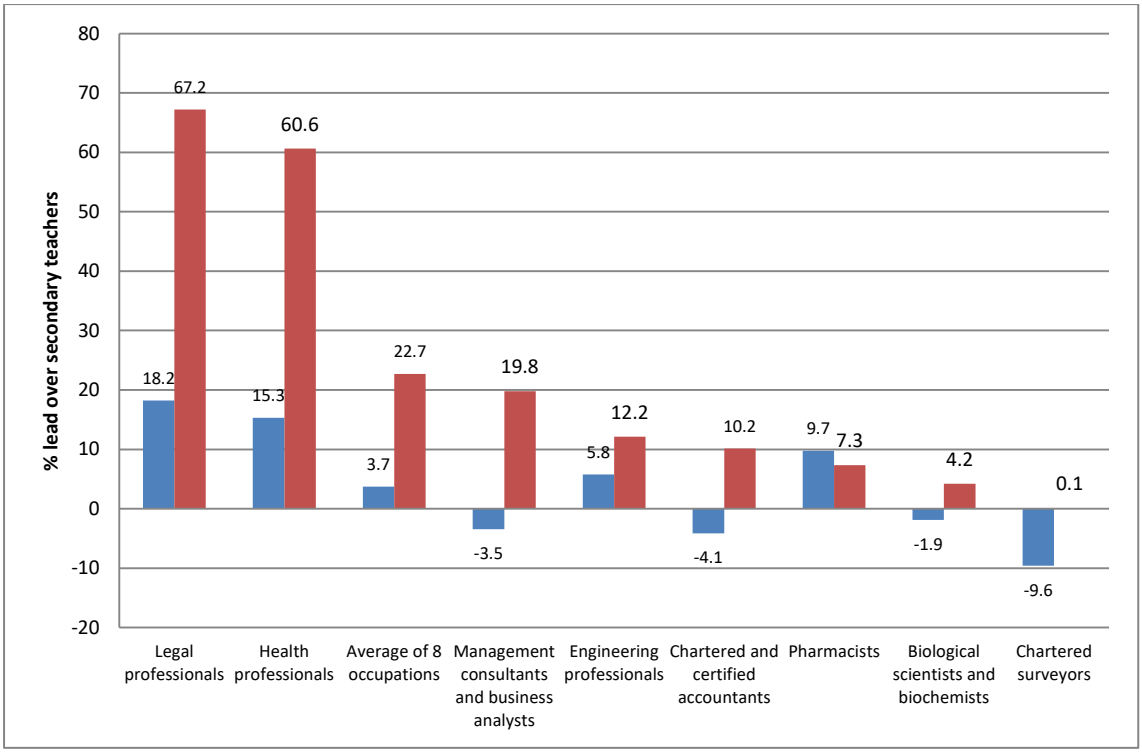
Using a combined occupational group in this way carries the risk of the figures being overly influenced by those for very high- or very low-paid professions so in Chapter 6 we also present a similar quartile analysis for a number of individual professions. This analysis examines the lower and upper quartiles for the two lowest-earning professions for which data is available for the whole period – chartered surveyors and pharmacists – and the highest-earning – legal professionals.

This analysis shows that the spread of secondary school teachers' earnings, from lower quartile to upper quartile, is only on a par with that for one profession – chartered surveyors – where the upper quartiles for both professions were almost identical. For all the other non-teaching jobs, secondary teacher's earnings generally trailed behind, especially when upper quartiles were considered.

Moreover, the gaps between the corresponding upper quartile figures became more and more substantial with differentials of over 60% for legal and health professionals as shown below.

Graph 4 plots the lower and upper quartile differentials for each of the eight professions against the equivalent secondary teacher figures in 2018. It shows that the secondary school teacher lower quartile was lower than the equivalent figures for five of the comparator professions and higher in the case of three, most notably chartered surveyors where the differential was greatest at 9.6%. Variations were greater when the upper quartile figures were examined, however, with differences ranging between 0.1% in favour of chartered surveyors and 67.2% in favour of legal roles.

Graph 4: Comparison of lower and upper quartile gross earnings for eight professions with secondary school teachers 2018



Source: ASHE

As a result, it is clear that the pattern exhibited by the combined occupational quartile analysis is not overly influenced by earnings for one or more high- or low-paid professions. Earnings for teachers at upper quartile levels are not only trailing those for the best-paid professions but they currently lag behind those for all of the eight occupations, in most cases by significant amounts. Shortfalls are proportionately greater here than those at lower quartile levels where, nevertheless, teachers' earnings also tend to trail those for most of the other professions.

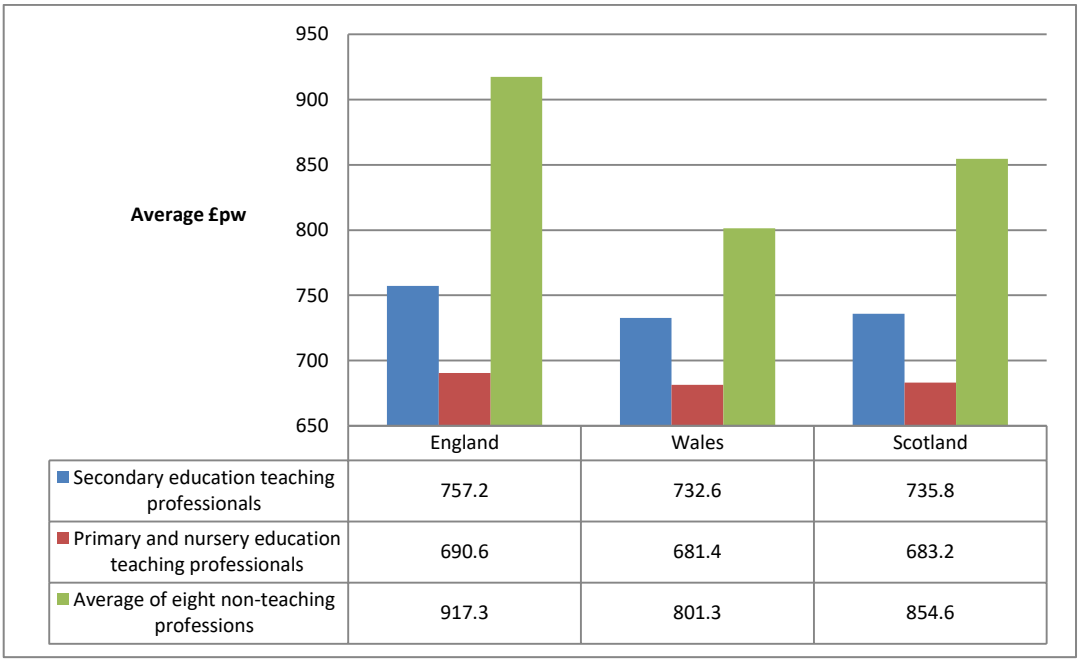
Recent pay awards have been more focused on teaching staff at the lower end of the pay scale but these findings demonstrate that while there are problems at all levels, the greatest differentials with earnings for other professions are found at the upper ends of the pay scale.

1.8. England compared to Scotland and Wales

As in last year's report, this year we took a broader perspective by examining how the average gross earnings of teachers in England, Scotland and Wales compared to the other professions in each respective country. This is because teachers, like other graduate professions, are more mobile geographically than most other non-graduate occupations.

Graph 5 shows average gross earnings for secondary and primary teachers in comparison to the average of a group of the same eight non-teaching professions for each of England, Scotland and Wales – biological scientists, engineering professionals, health professionals, pharmacists, legal professionals, chartered surveyors, chartered accountants and management consultants. Only eight non-teaching occupations are used because data was not available for all 10 groups in Scotland and Wales in 2018.

Graph 5: Relative average gross earnings of teachers and selected professional groups in the UK 2018



	England	Wales	Scotland
Secondary education teaching professionals	757.2	732.6	735.8
Primary and nursery education teaching professionals	690.6	681.4	683.2
Average of eight non-teaching professions	917.3	801.3	854.6

Source: ASHE

The graph illustrates that average gross earnings of both teaching groups are significantly below those of the non-teaching groups in England, Scotland and Wales. In addition, the figures for

secondary and primary teachers in England were both slightly greater than the corresponding amounts for Wales and Scotland. But the earnings for non-teaching groups are greater in England than in Scotland and Wales, and therefore the gap between teachers' and non-teachers' earnings is greatest in England.

1.9. Key findings

School teachers' earnings

- Based on ONS data, earnings for teachers in England compare unfavourably with those for other graduate occupations
- While gaps between the earnings of other graduate professions are significant at average and median levels, the differentials are even wider at upper quartile levels
- When measured by median basic earnings, primary school teachers were ranked tenth out of twelve comparable graduate professions while secondary teachers were positioned seventh
- In terms of average basic earnings, the positions fell somewhat with primary and nursery teachers falling to twelfth while secondary teachers fell two positions to ninthAn analysis of gross earnings, which includes additional pay over and above salary, illustrated a similar pattern with primary and nursery teachers positioned tenth and eighth based on median values falling to ninth and twelfth respectively when measured by averages
- The average differentials in favour of many of the non-teaching groups were substantial with some as large as over 50% higher than those of secondary teachers and over 65% above the equivalent primary and nursery school figures
- These findings echo the conclusions of the STRB, which found that the teaching profession has continued to lag behind other graduate professions, both in terms of starting salaries and pay progression prospects.

Teachers leaving the profession

- The latest review body report found that the rate of qualified teachers leaving the profession in England only fell slightly in the latest year, from 10% to 9.9% although this level is comparatively high, historically
- In terms of retention, the latest data shows that the numbers that left within three years and five years of joining the profession have increased between 2011 and 2016
- The number of qualified teachers in England leaving the profession for reasons other than retirement has continued to rise to around 35,000 in 2016 although the number retiring had fallen to around 7,500.

Number of teachers

- Over the whole period, between 2007 and 2017, the number of primary and nursery teachers increased by just over 12% while secondary teacher headcount fell by 7.6%.
- In the latest year, however, the number of primary and nursery school teachers fell from 222,400 in the 2016 to 221,100 in 2017.
- Worsening the current problems, initial teacher training recruitment targets for secondary schools were missed for the sixth year in a row.
- The number of schools reporting teacher vacancies and temporarily-filled posts has also increased markedly over the last few years – more than doubling between 2011 and 2016.

Pupil numbers

- Both secondary and primary and nursery school pupil numbers have started to exhibit an upward trend in the latest year.
- Pupil numbers as a proportion of the number of teachers shows an increase in class sizes and pupils per teacher since 2010.
- Looking to the future, between 2017 and 2026, the number of primary school pupils is forecast to increase by 2.2%, while the number of secondary school pupils is forecast to rise by 19.1%.

Financial situation

- All these challenges are set against a backdrop of per-pupil funding levels that look like remaining flat in real terms in the near future.

2. Earnings for English school teachers in context

Decisions on pay in teaching are shaped by numerous factors so it is worth reflecting on some of the wider aspects of the current environment to fully understand the challenges faced by the profession. This chapter brings together information from various other sources that highlight the present situation in terms of recruitment and retention, pupil numbers, funding and supply and demand.

A primary source of information is the STRB which, each year, is tasked with looking at all the evidence available before making its pay recommendations. In support of its most recent recommendation, the latest STRB report presented substantial evidence covering pay, recruitment and retention and many other factors that affect the teaching profession. Most of the findings presented in the latest July 2018 report concern issues that have persisted for many years as outlined in the previous chapter.

2.1 Latest pay deal

Based on the evidence it reviewed, the STRB recommended that all pay and allowance ranges for teachers and school leaders be uplifted by 3.5% from September 2018. This represented a break from the recent past when recommendations had to bear in mind the Government proviso that any proposed pay deal stayed within its 1% public sector pay cap. In September 2017, the Chief Secretary to the Treasury partially lifted this cap in cases where public sector professions faced particularly pronounced skills shortages. This opened the door to the higher pay recommendation from the STRB.

But in the event, the Government decided that the increase of 3.5% should only be applied to the 43% of teachers on the main pay range with lower increases of 2% for those on the upper range and 1.5% for leaders.

Looking ahead, the latest remit set by the Secretary of State for Education asked that the STRB, in making its recommendations for 2019, should consider what adjustments should be made to teaching salary ranges in order to promote recruitment and retention, within the bounds of affordability across the school system as a whole. A recurring theme throughout the letter, however, was affordability and in early February 2019, the Education Secretary further signalled his call for restraint stating that the teachers' pay award in England should be capped at 2% in the coming year. This letter also stresses affordability, though it recognises recruitment is an issue and proposes

measures aimed at improving retention. Whether these will be acceptable to the STRB, or sufficient, remains to be seen, however.

2.1. Recruitment, retention and school funding

The latest review body reported that the rate of qualified teachers leaving the profession in England actually fell, although this figure is still historically high.

The STRB analysis broke down the numbers leaving the profession by experience levels for the last 10 years. What was striking from the results is that retention rates in the latest period were lowest in the last five years for all levels of experience. The latest data, for 2016, shows that the proportion of teachers that left within three years of joining the profession increased from 20% in 2011 to 26% in 2016. Over the same period, the proportion of teachers who left within five years of joining the profession increased from 27% to 31%.

More broadly, the STRB states that in recent years, maintaining teacher supply has become more difficult with a further deterioration in both recruitment and retention last year. This is highlighted by the fact that the Government's overall target for recruitment to postgraduate initial teacher training (ITT) was missed in 2017/18 for a sixth successive year. Moreover, indications from the Universities and Colleges Admissions Service interim data on applications suggest that the situation in 2018/19 will be no better. Early indications show that while target for ITT recruitment this year is around 4.5% higher than in 2017/18, the overall number of people who had applied for postgraduate ITT programmes in England and Wales was 16% lower than the corresponding figure in 2017.

One result of this is that, as the STRB also reports, the numbers of vacancies and temporarily filled posts in schools have also continued to increase. When added to the fact of increasing turnover, the STRB feels that these trends are particularly concerning as demand for teachers is expected to rise considerably over the next decade, particularly in secondary schools, as a result of increases in pupil numbers.

In terms of the financial position of schools, last year's STRB report highlighted that many schools are facing both real-terms reductions in the level of per-pupil funding and growing cost pressures between now and 2020. At that time, the overall schools budget to 2019-20 is projected to increase broadly in line with forecast inflation but pupil numbers are forecast to rise more drastically so the amount per pupil received by schools is expected to fall by 6.5% in real terms.

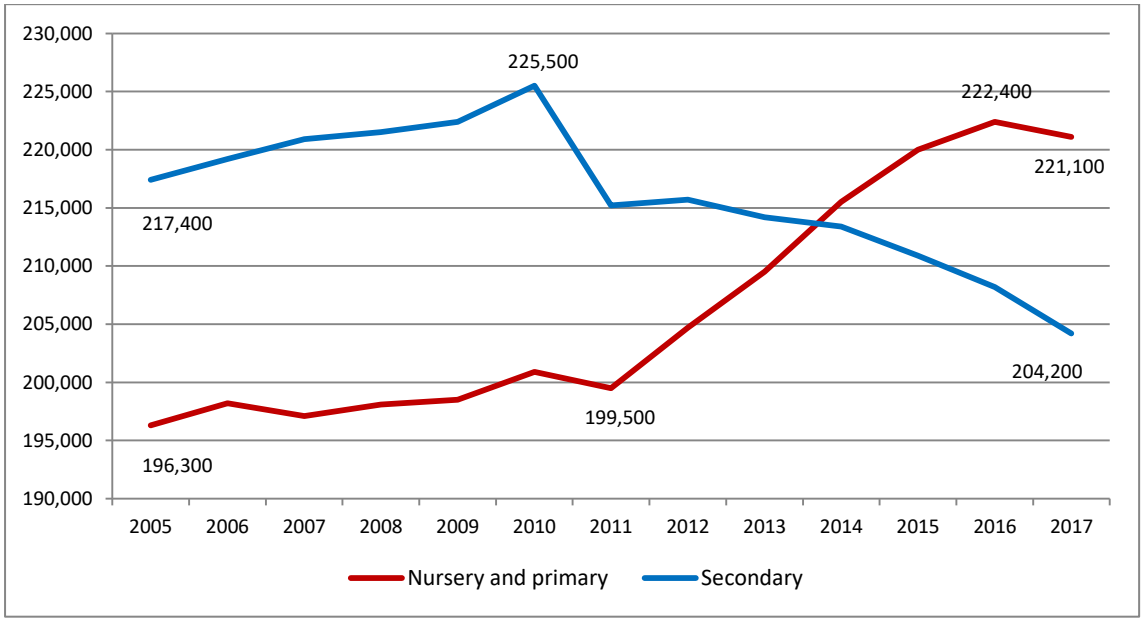
To address this, in July 2017, the Government announced an additional £1.3 billion for schools across the next two years, over and above the budget set at the spending review in 2015. It said that this further funding would support the introduction of the National Funding Formula (NFF) in 2018-19 and 2019-20. Despite this injection, the IFS has calculated that this will still mean that per-pupil funding levels will remain flat in real terms over this period.

2.2 Teacher numbers

A closer examination of the actual data on teacher numbers is provided in graph 6, which shows the numbers of full-time equivalent teachers in England between 2005 and 2017. It demonstrates that the number of primary teachers rose between 2011 and 2016 but fell away in 2017, the latest year for which data is available. In contrast, the overall trend for secondary teachers is downwards, finishing the period with over 20,000 fewer staff in 2017 than the peak in 2010.

An examination of the trend between 2007 and 2017 illustrates that the number of primary and nursery teachers increased by just over 12% while secondary teacher headcount fell by 7.6%.

Graph 6: Number of full-time equivalent teachers in England 2005 to 2017



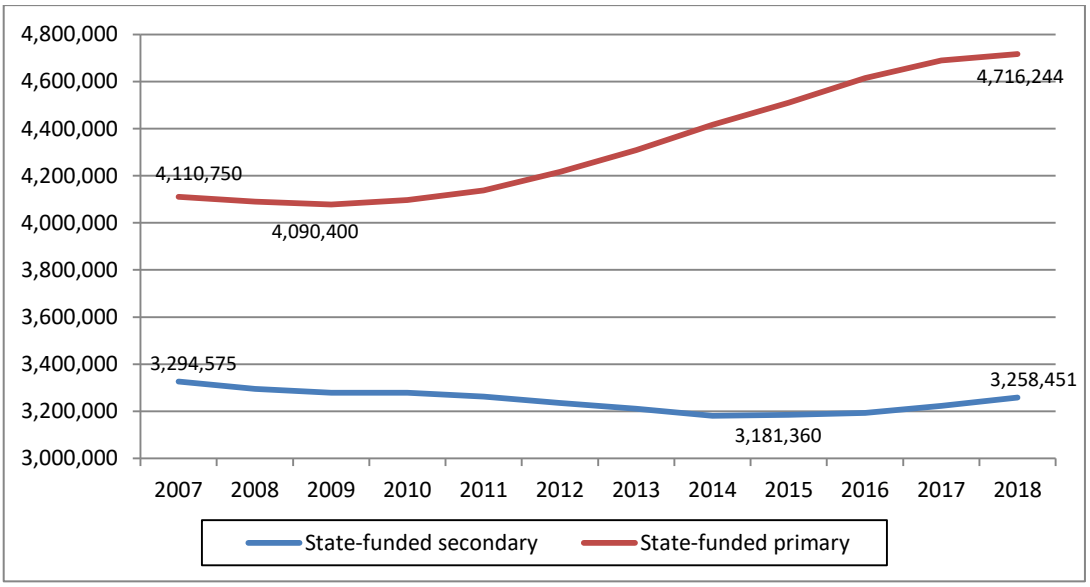
Source: School workforce in England: November 2017, Office for National Statistics

2.2. Pupil numbers

The increase in primary and nursery school teachers presented in Graph 6 above mirrors the trend in pupil numbers in those schools for most of the period as shown in Graph 7 below. The exception is the latest year when primary school pupil numbers continued to grow but teacher headcount fell. In

contrast, Graph 7 demonstrates that secondary school pupil numbers have been on an upward trend since 2015 while the number of corresponding teachers has fallen.

Graph 7: Number of pupils in England 2007 to 2017



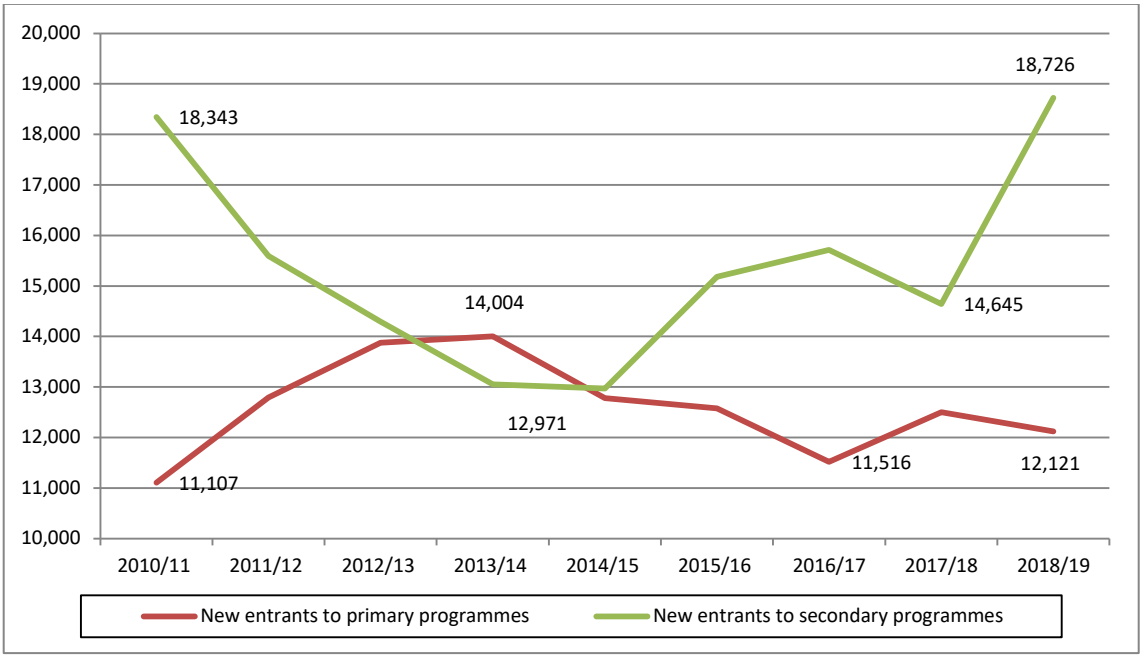
Source: Schools, pupils and their characteristics: January 2018, Office for National Statistics

2.3. Teaching entrants

As the STRB outlined, teacher training has also been a challenging area and Graph 8 provides further insight by displaying information on the number of new teachers entering the teaching profession. It shows that the numbers of new entrants to primary programmes increased during the first few years of the decade before falling slightly, levelling off and then falling in the latest year. In contrast, the numbers of those training to be secondary education teachers fell sharply between 2010/11 and 2014/15 – by nearly 30% – but this was followed by a reversal with rises that meant that planned numbers finished the period slightly higher than when it began.

Such figures only tell part of the story because they merely represent Department of Education recruitment targets with no indication as to whether these were actually met. The extent to which these targets have been achieved is outlined in Graph 9 below. It illustrates that since 2013/14, the target for secondary teachers has never been achieved and the shortfall has been increasing. For nursery and primary teachers, the picture is different with the targets met or bettered in each year since 2015/16.

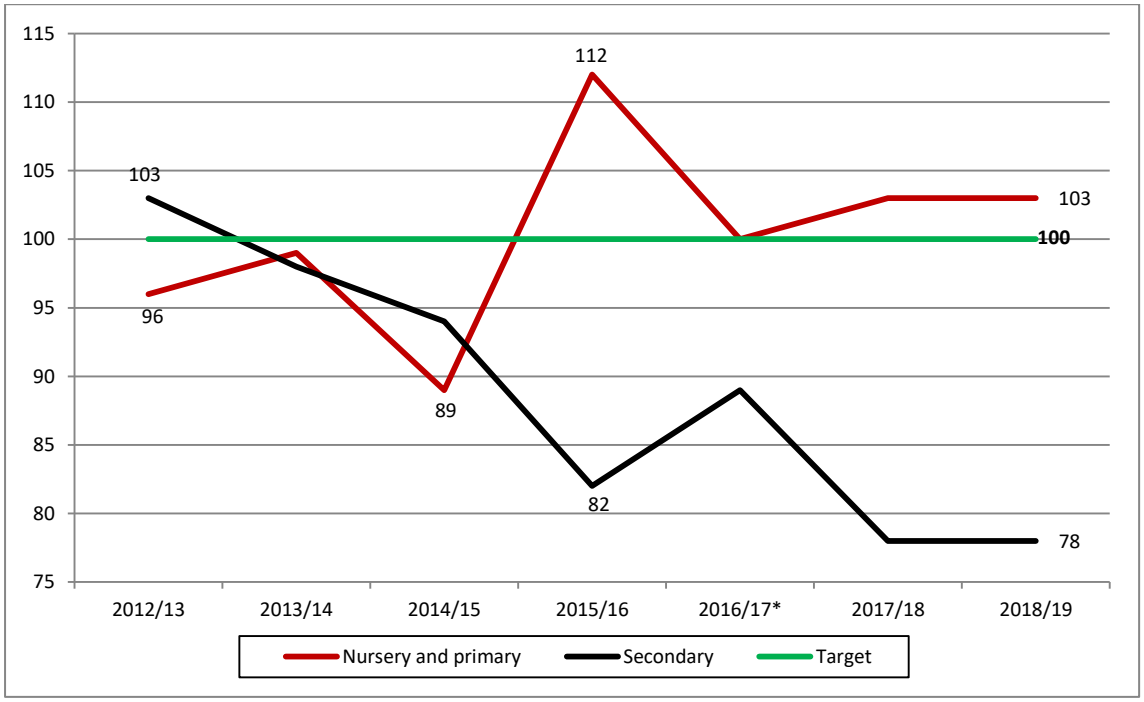
Graph 8: Initial teacher training places in England 2008 to 2019*



*Provisional including forecast registrations

Source: Initial teacher training: trainee number census - 2010 to 2017, Department for Education and National College for Teaching and Leadership

Graph 9: English recruitment levels versus target (%) 2012 to 2019



Source: Initial teacher training: trainee number census - 2010 to 2019, Department for Education and National College for Teaching and Leadership

2.4. Data on the number of pupils per teacher

Looking at changes in the numbers of pupils and teachers in isolation is only of limited use because we need to understand the pattern of both in order to calculate a more important statistic – the pupil per teacher ratio. This ratio is important because it is widely considered a good indicator of educational quality.

From the graphs above it is clear that pupil numbers are increasing, particularly in secondary schools, whereas teacher headcount is dropping in both types of school. As a result, the number of pupils per teacher is currently rising in both secondary and primary and nursery schools, as illustrated by Graph 10.

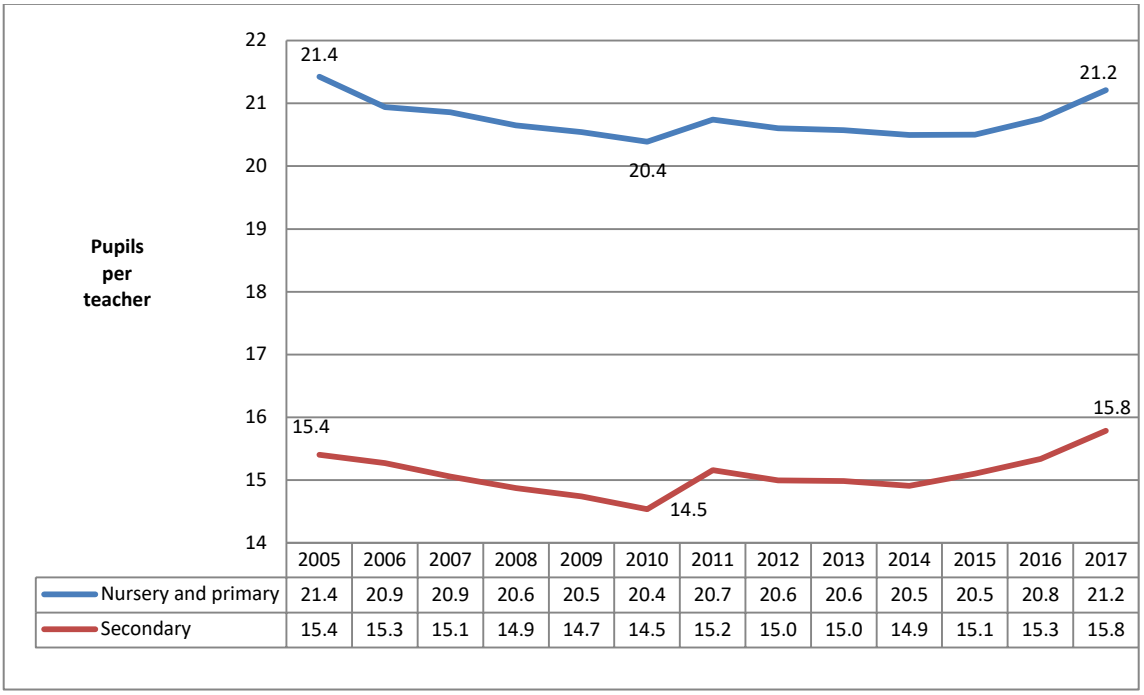
The graph tracks the pattern of change in the proportion of pupils per teacher between 2005 and 2017, highlighting the proportions at the start of the period as well as the lowest point in 2010 and in the latest year. Overall, it is clear from the chart that pupil numbers as a proportion of teacher numbers have been on the rise in recent years. With pupil numbers increasing the only way to halt this trend is to recruit more teachers.

To place the current situation in England into a wider perspective, the TES reported in 2016 that England has the highest ratio of pupils to teachers among EU member nations. Since then, as Graph 10 indicates, with a worsening picture this position is unlikely to have changed much if at all.

This is supported by Department of Education projections showing that pupil numbers in state-funded schools are forecast to increase significantly over the next 10 years. In fact, the overall pupil population in state-funded primary schools was 4,583,000 in 2017 and is projected to be 102,000 higher in 2026 at 4,685,000 (a 2.2% increase).

This latest rise represents a slowdown in the upward trend in primary school pupil numbers which increased from around 4 million in 2007 to over 4.5 million in 2017. Despite this, all these rises are set to feed through into secondary schools so that the overall population of pupils aged 11-15 is projected to reach a peak of 3,331,000 in 2026, 534,000 higher than in 2017 (a 19.1% increase).

Graph 10: Pupils per teacher in England 2005 to 2017



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Nursery and primary	21.4	20.9	20.9	20.6	20.5	20.4	20.7	20.6	20.6	20.5	20.5	20.8	21.2
Secondary	15.4	15.3	15.1	14.9	14.7	14.5	15.2	15.0	15.0	14.9	15.1	15.3	15.8

Source: Schools, pupils and their characteristics: January 2018, Office for National Statistics and Initial teacher training: trainee number census - 2010 to 2019, Department for Education and National College for Teaching and Leadership

All of this is taking place at a time when the Government remains determined to bear down on pay increases, as a way of containing spending costs, though there is also significant pressure on the Government to raise wages. Funding also continues to be constrained. As the STRB reports, over the past three years, there has been an increase in the proportion of local authority-maintained primary and secondary schools in England reporting negative financial reserves. The Department of Education's data suggest increasing numbers of schools falling into this category over the past three years. For example, between 2015-16 and 2016-17, the proportion of maintained primary schools in deficit increased from 4.5% to 7.5% while the corresponding figures for maintained secondary schools were 17.8% and 26.3%.

3. School teachers' pay awards

In this section we examine how school teachers' pay awards compared with those in the wider economy since 2007, based on our monitoring of pay awards.

3.1. Teachers' pay awards compared with the wider economy

An examination of how pay awards for school teachers in England have compared with increases across the economy as a whole since 2007 demonstrates that the teaching profession in England tended to receive lower pay awards than those for other groups, except during the depths of the recession in 2009 and 2010. In those two years, teachers received pay awards from a previously negotiated long-term deal so their increases were 2.3%, ahead of the median pay awards for the whole economy taken from the IDR Databank that stood at 1.8% (2009) and 2% (2010).

Since then, the median whole economy pay award has been 2% in each of 2011, 2012 and 2013, and 2.5% in 2014, while the figure for 2015 is 2.2%. By contrast, teachers received no general salary increase in either 2011 or 2012, 1% between 2013 and 2014, while in 2015, the headline increase was again 1% with a 2% increase to the maximum of the pay range.

More recently, in 2016, 2017 and 2018, the median whole economy figures stood at 1.78%, 2% and 2.5% respectively. Over the same period, pay increases for teachers were applied to pay ranges rather than across the board so not all teachers were guaranteed to receive a rise. Increases to statutory range minima and maxima were increased by 1% in 2016, 2% in 2017 and 3.5% in 2018. Despite this, in the last two years the uplifts to the upper pay range have been lower at 1% in 2017 and 2% in the latest year. Moreover, in 2018, the increase to the leadership pay range was even lower at 1.5%. As a result, just 43% of teachers received a 3.5% rise.

Looking to the future, in its latest evidence to the STRB, the Department for Education argued that a teachers' pay award of 2% would be 'affordable nationally' in the coming year. The earlier letter from the Secretary of State for Education to the Chair of the STRB carried a recurring message of affordability This comes at a time when there is significant pressure on the Government to raise teachers' pay.

3.2. Measuring pay awards

General salary increase levels for school teachers approved by government ministers from 2007 onwards are detailed in Table 4. The increases cover teachers in both England and Wales and

exclude other elements of earnings which might have affected overall pay bills. In most of the 12 years covered, all teachers received the headline salary rise and were also entitled to incremental pay progression based on time in post and experience. Since then, most schools continue to apply the awarded increase to all pay points but not all teachers have received progression in addition to the basic rise.

The table also shows the lower quartile, median and upper quartile figures for pay settlements. These cover the three-month period ending September as an appropriate point for comparison with the school teachers' pay review. The percentage figures used in the table measure the headline increases in basic pay levels, excluding bonuses or lump sum payments. For settlements and awards where the percentage rise varies for different employees (for example, increases based on individual performance), the figure used is the average increase where this is known, the increase received by the largest number of employees, or the pay bill increase. The cost of other improvements, such as any increase in holiday entitlement or in the value of allowances, for example, is excluded.

3.3. Pay trends over the period

In the past it was relatively simple to draw comparisons between the pay rises received by teachers and those in the whole economy. Since 2015, because the award has differed between the main and upper pay ranges it is more difficult to apply a single figure to the award.

As a result, for the period 2007 to 2014, Table 4 provides the difference between teachers' pay increases and those elsewhere whereas from 2015 onwards this is not possible. Of the analysable figures, the only period in which teachers enjoyed higher annualised awards was between 2009 and 2010. This was during the depths of the economic downturn when a three-year deal starting in 2008, and concluded before the burgeoning financial crisis deteriorated significantly, protected teachers' pay in relative terms.

From 2015 onwards, formal comparisons for teachers are difficult to make because increases to pay ranges have differed for different teaching groups. For example, in 2015 there was a 1% uplift to the minima of all pay ranges and allowances, 2% uplift applied to the maxima of the main pay range which both trailed the all-economy median of 2.2%.

Table 4: School teachers' pay awards compared with those in the wider economy, 2007-2018

	School teachers England & Wales		Pay settlements – whole economy			Comparison with median
	% general award		**Lower quartile %**	**Median %**	**Upper quartile %**	**Percentage point difference**
2007	Salary increase of 2.5%	Q3	3.0	3.5	4.1	-1.0
2008	General salary increase of 2.45%	Q3	3.0	3.7	4.0	-1.25
2009	General salary increase of 2.3%	Q3	0.0	1.8	2.5	0.5
2010	General salary increase of 2.3%	Q3	0.3	2.0	2.4	0.3
2011	No general salary increase	Q3	0.0	2.0	3.0	-2.0
2012	No general salary increase	Q3	1.0	2.0	3.0	-2.0
2013	General salary increase of 1%	Q3	1.0	2.0	2.5	-1.0
2014	1% increase in range minima, maxima and reference points within ranges	Q3	2.0	2.5	2.8	-1.5
2015	1% uplift to the minima of all pay ranges and allowances, 2% uplift applied to the maxima of the main pay range	Q3	1.8	2.2	2.5	-1.2
2016	1% increase to the statutory minima and maxima of all pay ranges and allowances in the national pay framework from September 2016, including allowances. Schools have discretion over how to apply the increase unless teacher is on the minimum pay-point	Q3	1.0	1.78	2.5	-0.78
2017	2% uplift to the minimum and maximum of the main pay range; a 1% uplift to the minima and maxima of the upper, the unqualified and the leading practitioner pay ranges. Schools have discretion over how to apply the increase unless teacher is on the minimum pay-point but must be within the overall 1% public sector pay cap	Q3	1.7	2.0	2.74	-1.0
2018	3.5% to the minimum and maximum of the unqualified pay range and main pay range; 2% to the minimum and maximum of the upper pay range, leading practitioner pay range and all allowances; 1.5% to the minimum and maximum of the leadership pay ranges.	Q3	2.0*	2.5*	3.0*	1.0, -0.5 or -1.0 depending on range

**Provisional and subject to revision. Note: we have analysed whole-economy pay awards for the third quarter of the year (Q3), to align with the teachers' pay review in September.*

Source: IDR

In 2016, almost all teachers received a 1% increase which trailed the all-economy median which stood at 1.78%. In 2017, the all economy figure was 2% and that year the minimum and maximum of the main pay range were both uplifted by 2%. Despite this, a similar proportion of teachers on the upper pay range received increases of 1% so, at best, only some in the teaching profession kept pace with those in the wider economy.

Last year, there was a 3.5% uplift to the minimum and maximum of the unqualified pay range and main pay range while the minimum and maximum of the upper pay range, leading practitioner pay range and all allowances were increased by 2%. In contrast, the minimum and maximum of the leadership pay ranges was only uplifted by 1.5%. At the same time, the all-economy median pay rise stood at 2.5%, ahead of the increases for the majority of teachers.

During the period when teachers in England received a pay rise while other public sector workers' pay was frozen, from 2009 to 2010, the fact that wages continued to rise in the private sector (albeit at a lower level than previously) means that the differential with the whole economy median was worth a half a percentage point at most. By contrast, in other years, when teaching pay rises lagged behind the whole economy median they were often between 1 and 2 percentage points lower.

It is clearly visible that the overall pattern illustrates a sustained deterioration in the earnings levels of school teachers relative to other groups over the period 2007 to 2014. From 2015, increases varied according to range or position in the range but with the exception of a subset of teachers in 2018, the figures show that pay increases trailed those found in the whole economy over this more recent period too.

4. Graduates' pay

The analysis in this section compares the aggregate salaries for graduates in mostly private sector organisations with the current salaries on the school teachers' main pay scale. The analysis focusses on data collected on anticipated graduate starting salaries for 2018 from an IDR survey of pay and progression for graduates. We analyse how these salaries compare to the minimum salaries for teachers on the main pay ranges in each of the locations set by the STRB.

4.1. Starting salaries

The IDR survey captured data from graduate recruiters on starting salaries for their graduate intake for 2017 and anticipated salaries for new graduates in 2018. The survey showed that two-fifths of companies (44%) expected to maintain their 2017 starting salaries for graduates at the same level in 2018. Excluding those companies who did not expect to uprate graduate starting salaries in 2018, the anticipated median percentage uplift for salaries in 2018 in England (excluding London and the South East) was 2.5%.

The IDR graduate survey collected salary information from 42 organisations across mainly private sector companies, particularly those in the manufacturing and primary sector. Together the organisations surveyed employ nearly 500,000 staff between them, with a median workforce size of 4,000. Companies covered include household names in construction, engineering, finance, retail and the utilities. The data was collected in autumn 2017.

The analysis looks at median and average graduate starting salaries as reported by the IDR survey and how these compare with the minimum point of the teachers' main pay range. To produce an accurate comparison the IDR survey data has been analysed according to how pay for teachers is structured by location. The median and average graduate salaries for England excluding the South East and London are compared to the national pay points; data for the South East is compared to the fringe pay points; and London data is compared to the inner and outer London spine points.

4.2. Geographical variations

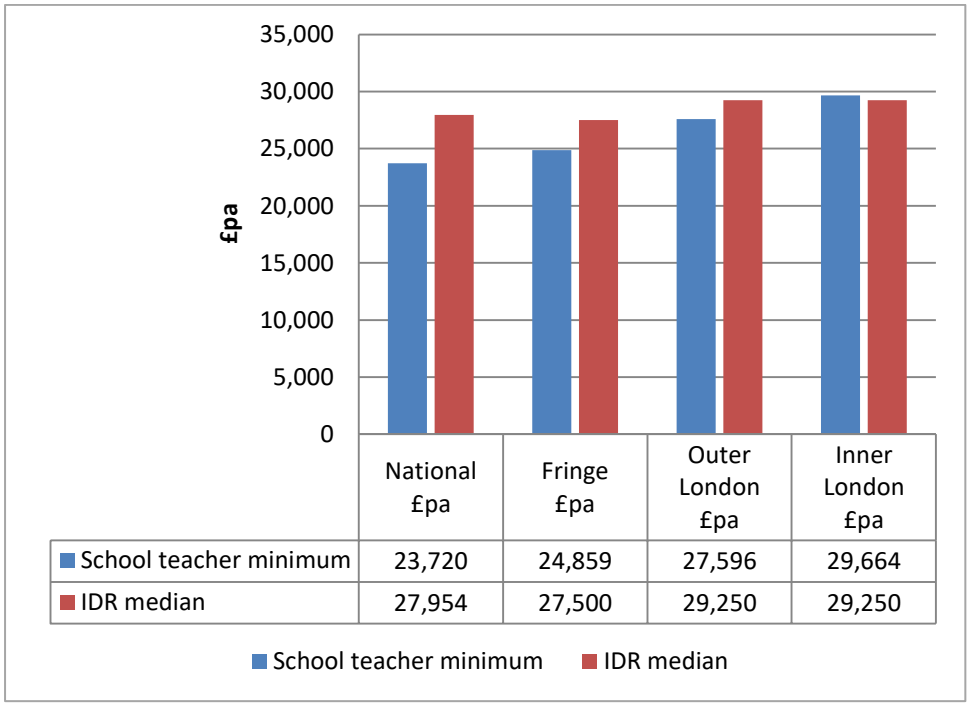
Graphs 11 and 12 illustrate how median and average graduate starting salaries as shown by the IDR survey compare with the respective minimum points on the teachers' main pay ranges in each of the locations identified. The data in graph 11 shows that the IDR median graduate starting salary in England, excluding London and the South East, is £27,954, and as such is over 18% higher than the current national minimum point on the school teachers' main pay range. This is a slightly narrower

gap than reported by IDR in 2017 when the difference was 19%. The median graduate starting salary in England (excluding London and the South East) recorded in 2017 was £27,358. The difference between the 2017 and 2018 median starting salary is 2.2%.

Looking at the fringe area, median graduate starting salaries are 10.6% higher than the equivalent point on the teachers' main pay range. This represents a smaller differential shown by last year's IDR report when the gap was 14.5%. Data for non-teaching graduates in this location category is based on salaries paid in the South East (excluding London).

The gap between other graduate starting salaries and teachers' pay in outer London is the same as reported in last year's report, with graduate salaries 6% higher. Finally, and as reported in previous years' surveys, it is only in inner London where the minimum salary for teachers is ahead of the median starting salary for graduates shown in the IDR survey, ie £29,664 as set by the STRB, compared with £29,250 as shown by the IDR survey of graduate salaries.

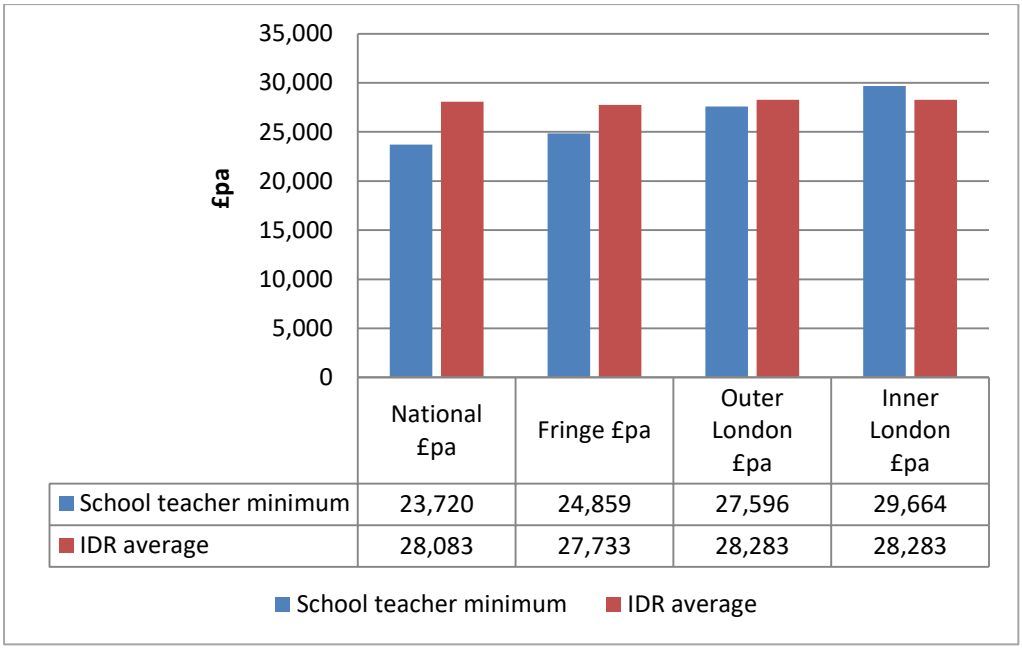
Graph 11: Median starting salaries for graduates compared with teachers' minimums 2018



Source: IDR

A similar picture is presented when we compare **average** starting salaries for graduates from the IDR survey and current minimum salaries from the school teachers' main pay ranges (graph 2).

Graph 12: Average starting salaries for graduates compared with teachers' minimums 2018



Source: IDR

Table 5: Graduate starting salaries by location and sector, 2018

Region	Minimum £pa	LQ £pa	Median £pa	UQ £pa	Maximum £pa	Average £pa
England – national*	22,000	26,625	27,954	29,750	33,000	28,083
London	18,400	26,875	29,250	30,500	36,500	28,283
South East - fringe	16,000	26,449	27,500	29,000	34,500	27,733
Sector (based on all-England data)						
Private services	16,000	22,500	26,000	30,70	33,000	26,091
Manufacturing	25,000	27,500	29,000	30,000	32,000	28,685

** Excluding London and the South East.*

Source: IDR

Table 6: Teachers' main pay range at 1 September 2018 (England & Wales)

Scale point	National £pa	Inner London £pa	Outer London £pa	Fringe £pa
1	23,720	29,664	27,596	24,859
2	25,594	31,211	29,307	26,732
3	27,652	32,837	31,120	28,789
4	29,780	34,548	33,047	30,924
5	32,126	37,206	35,850	33,264
6	35,008	40,372	38,963	36,157

Source: NASUWT

Table 7 below shows salary data from the latest XpertHR survey on graduate starting salaries in England. Both median and average graduate starting salaries as reported by the XpertHR survey are higher than the minimum point of the teachers' main pay range, with a gap of 1.2% and 4.8% respectively. This compares to a gap of 17.7% on the median and 16.3% on the average figures found by the IDR survey (using all-England data).

Table 7: UK graduate starting salaries 2018/2019

Country	Median (£pa)	Average (£pa)
England	24,000	24,852
UK	24,000	24,647

Source: *'Graduate recruitment and starting salaries survey 2018'*, XpertHR

The XpertHR survey on graduate recruitment and starting salaries was conducted in June 2018. Useable responses were received from 214 organisations with a combined workforce of 559,136 employees and a median organisation size of 223 employees. Two-thirds of respondents were from the private services sector (66%), just under a third were from the manufacturing sector (29%) and a further 5% came from respondents in the public sector. Meanwhile, the IDR survey captured information from larger companies with a median organisation size of 3,674 employees, and 48% of respondents were from the manufacturing sector.

The XpertHR survey found that there had been no increase in graduate starting salaries between 2017/2018 and 2018/2019. The XpertHR survey also found that just over a fifth of respondents (21%) to the survey did not increase their graduate intake in 2018, and a fifth of this sample (20%) revealed they have decided to take on apprentices (non-graduates) rather than graduates.

While both surveys revealed low growth in graduate salaries since 2017, the IDR survey reported higher graduate salaries compared to the XpertHR survey. This is likely to be a result of both sample size and sampling variability. The XpertHR survey collected data from a larger sample of companies, predominantly from the private services sector. The IDR survey, meanwhile, collected data from a large proportion of manufacturing companies (48% of companies in the survey are in the manufacturing sector). Pay in this sector is usually higher compared to other sectors and higher graduate salaries in manufacturing are perhaps a reflection of more technical qualification or skills requirements. As an example, looking at the all-England data collected by the IDR survey by sector (see table 5), the median graduate starting salary in manufacturing is £29,000, compared to a median of £26,000 in the private services sector.

5. ASHE earnings analysis

This section draws on official data from the Annual Survey of Hours and Earnings (ASHE), produced by the Office for National Statistics (ONS). More specifically, it uses a separate breakdown for England which makes it possible to examine how the earnings of school teachers in the country have changed over time compared to earnings for a basket of other comparator graduate occupations.
We have chosen 2007 because this is the point just before the economic crisis while 2012 represented the beginning of the period of pay freezes and restraint faced by the teaching profession. The latest year, 2018, is relevant because the it is the point when he most recent data is available, but it also comes at a time when the pay policy has been moderated a little as a result of recruitment and retention pressures.

When considering the findings in this chapter, some caveats need to be borne in mind. Firstly, the samples for each year are not based on matched data. One reason for this is that as members of staff join and leave a profession, samples across different years will change. Despite this, because England is the largest country in the UK, the sample sizes are quite substantial for most of the professions in all the 12 years.

One other point to bear in mind is that in some years the ONS redefines certain jobs to improve its methodology and reflect the changing nature of the economy. This is another factor affecting comparisons between years. In 2010, for example, changes meant that a new 3-digit 'health professionals' subgroup was created which excluded general medical practitioners (GPs). Prior to this the 2-digit major group, also called 'health professionals', included both GPs and other health groups. As a result, changing job definitions and unmatched samples mean that cross-year comparisons need to be treated with an appropriate degree of caution.

For a full explanation of the factors to bear in mind when interpreting the data see Appendix 9.The box below provides an indication of the reliability of the figures for each of the chosen job groups in 2018. The ONS sets four levels of data reliability for all its data, as follows:

- Precise;
- Reasonably precise;
- Estimates acceptable;
- Unreliable or no data.

As the table below illustrates, all the average basic figures for England are deemed to be 'precise' with the exception of those relating to chemical scientists and physical scientists. In both cases, the figures are judged to be 'reasonably precise', the second most accurate category set by the ONS. For average gross earnings, the chartered and certified accountant group's figures were also categorised as 'reasonably precise'.

Table 8: Assessment of reliability of pay data for England 2018

Job group	2018 average basic earnings figure	2018 average gross earnings figure
Secondary education teachers	Precise	Precise
Primary & nursery education teachers	Precise	Precise
Chemical scientists	Reasonably precise	Reasonably precise
Biological scientists and biochemists	Precise	Precise
Physical scientists	Reasonably precise	Reasonably precise
Biological scientists and biochemists	Precise	Precise
Engineering professionals	Precise	Precise
Health professionals	Precise	Precise
Pharmacists	Precise	Precise
Legal professionals	Precise	Precise
Chartered and certified accountants	Precise	Reasonably precise
Management consultants & business analysts	Precise	Precise
Chartered surveyors	Precise	Precise

Source: ASHE

5.1. Overview

ASHE provides information about the levels, distribution and make-up of earnings and hours worked for employees in all industries and occupations. In addition, the annual ASHE datasets enable occupations to be analysed down to the level of four-digit occupational codes, where relevant, and by region, which permits the ONS to produce figures for various regions as well as for England as a whole.

For the purposes of our analysis, we have used weekly earnings figures from ASHE for 10 non-teaching graduate occupations as listed in Table 9, on the basis that these 'professional' occupations (i.e. Standard Occupational Classification major group '2') are reasonable comparators with school teaching on the basis that they are all professional roles, with employers competing for potential staff from a single pool of graduates. These occupations have been identified and used as suitable

earnings comparators in previous research reports for the NASUWT. It should be noted that ASHE does not provide sample counts so the 'number of jobs' column below is actually an estimate based on information taken from another ONS study – the Labour Force Survey.

In the appendices, we include tables showing full median and average indexed earnings from ASHE, accompanied by graphs that make the overall trends clearer. In addition, similar information is shown for the median and average basic weekly and gross earnings on which the indices are based for all the occupations covered and all the years under review.

Table 9: Comparator graduate occupations in ASHE and SOC codes

ASHE main occupational groups	**Occupational groups used in analysis**	**SOC codes**	**No. of jobs in England (000's)***
Science, research, engineering and technology professionals	Chemical scientists	2111	10,000
	Biological scientists and biochemists	2112	39,000
	Physical scientists	2113	10,000
Engineering professionals	Engineering professionals	212	329,000
Health professionals	Health professionals	221	268,000
	Pharmacists	2213	24,000
Business, media and public service professionals	Legal professionals	241	105,000
Business, research and administrative professionals	Chartered and certified accountants	2421	61,000
	Management consultants and business analysts	2423	155,000
Architects, town planners and surveying professionals	Chartered surveyors	2434	54,000
Teaching and educational professionals	A. Secondary education teaching professionals	2314	294,000
	B. Primary and nursery education teaching professionals	2315	246,000

**Full-time jobs. Estimates in 2018*

Source: ASHE

5.2. Basic earnings of comparator graduate professions relative to school teachers

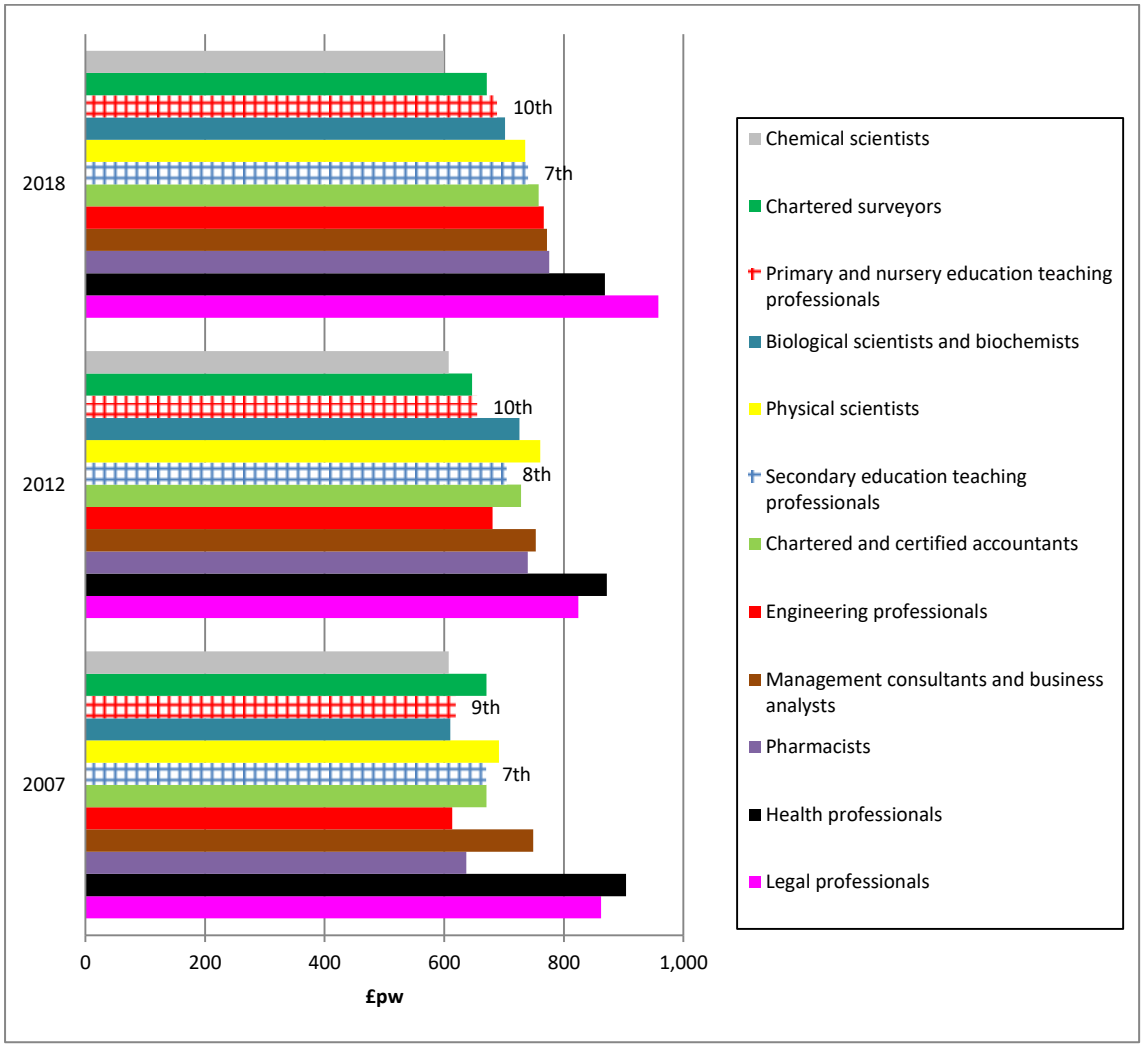
The following section of the report shows how median and average earnings differentials between secondary education and in primary and nursery schools and a group of comparator graduate occupations vary over time. For the purpose of our analysis, the years 2007, 2012 and 2018 have been selected for detailed examination. This allows comparisons of earnings differentials to be made in each of these three years as well as indicating how differentials have changed over the full 12-year period.

The section begins with an examination of the overall findings for all the jobs covered followed by a calculation of the combined median and average differentials between earnings for the 10 comparator graduate occupations and those for the two teaching groups. We then present a more detailed analysis of indexed median and average basic earnings for each of the occupational groups, relative to those for secondary and primary education school teachers in each of the same three years.

Teachers' pay is predominantly made up of basic salary but for other professions other elements such as shift pay (or in the case of some health professionals, clinical excellence awards) can account for a significant proportion of earnings. For this reason, the section concludes with a look at the median and average gross earnings of the selected graduate occupations compared to the corresponding figures for teachers.

Graphs 13 and 14 provide details of the median and average ranking of all the professions we examined in England, including both teaching groups, across the three years in focus. The graphs illustrate that secondary teachers are generally slightly higher-paid than those who teach younger children. The two graph bars for the teaching professions are shaded with a crossed pattern and labelled with their ranking position so they stand out from the other non-teaching occupations.

Graph 13: Comparison of median basic earnings of all comparator graduate professions in England including school teachers: 2007, 2012 and 2018



Source: ASHE

Graph 13 illustrates that, in terms of median basic earnings, the secondary and primary teaching professions in England were positioned seventh and tenth respectively (out of 12) in the rankings for 2018, which represented a slight improvement for secondary teachers when compared to 2012. The rankings for all three years are presented in full in Table 10 below.

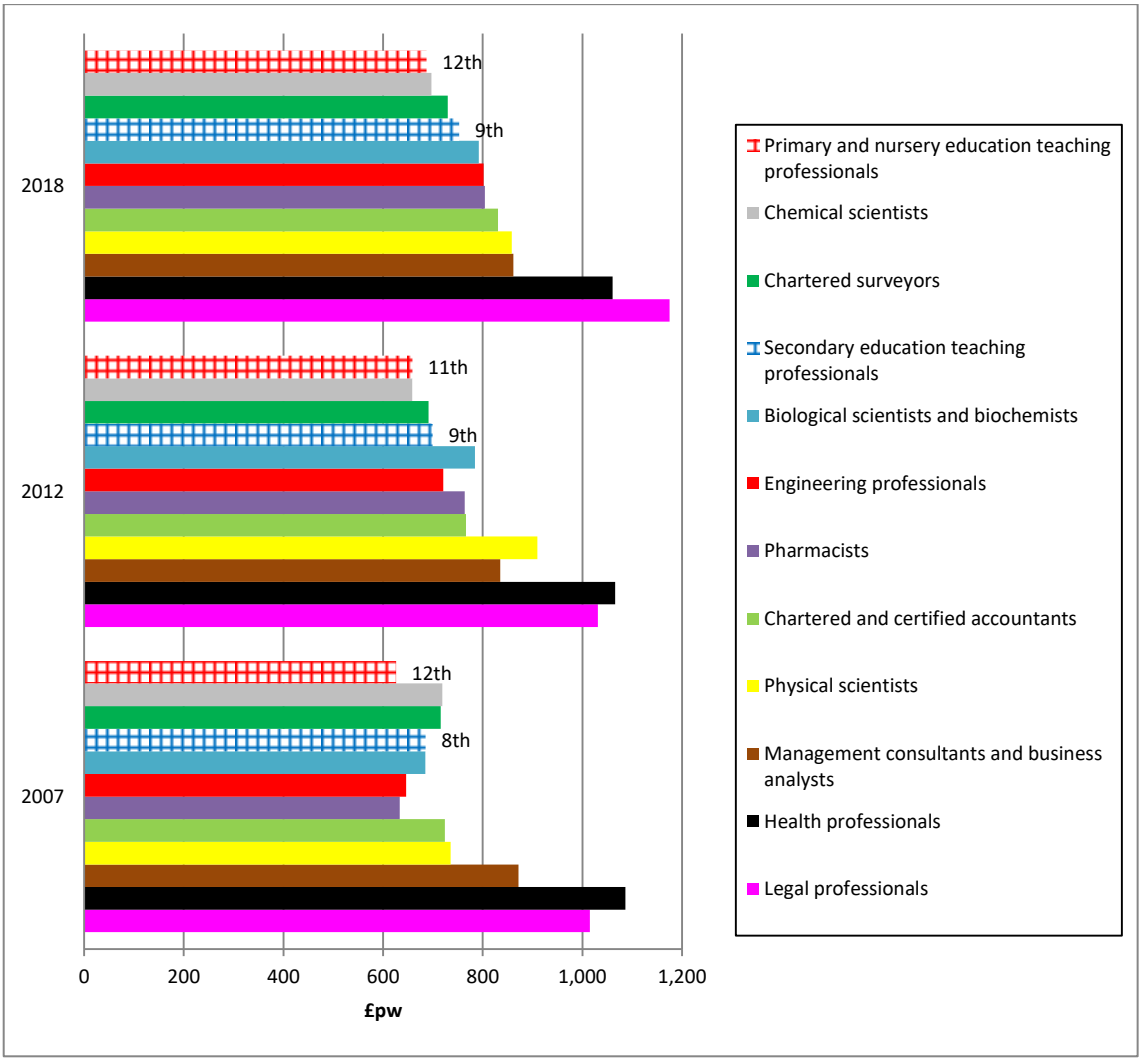
Table 10: Ranking of median basic earnings levels of selected graduate professions in England 2007, 2012 and 2018

Group	2007 rank	2012 rank	2018 rank
Secondary education teachers	7	8	7
Primary and nursery education teachers	9	10	10

Source: ASHE

One limitation of using median statistics is that they represent typical values and are not strongly affected by the highest and lowest figures found in a particular sample. For remuneration data, outliers are important because they provide a more complete picture of the whole range of earnings found in different occupations. This is particularly relevant for teachers where concerns have been expressed about pay at more experienced levels.

Graph 14: Comparison of average basic earnings of all comparator graduate professions including school teachers in England: 2007, 2012 and 2018



Source: ASHE

By contrast, average figures take more account of the whole distribution of earnings, including both the highest and the lowest. Therefore, to gain a fuller picture, Graph 14 provides comparative details based on average basic earnings for the professional groups examined. It is clear that the overall distribution in Graph 14 is broader in all three years. For example, whereas Graph 13 showed that

the highest median salary level for a non-teaching job is around 46% greater than the figure for primary and nursery teachers, the highest average figure shown in Graph 14 is over 73% greater.

Another consequence of using average instead of median figures is that the ranking of both teaching groups falls slightly in the latter ranking. For example, secondary school teachers fall from seventh to ninth place in the move from averages to medians, while the pay of primary teachers is positioned twelfth based on averages compared to tenth when measured by the median figures.

The slight drop in rankings is explained by the fact that while the average figures for all the comparator groups have increased compared to the corresponding medians, the average levels for both teaching groups in England were similar to the median levels. For example, primary and nursery teachers' median weekly basic earnings stood at £668.50 which was very close to the average of £687.60. Meanwhile the respective figures for secondary teachers at £740.40 and £752.60 were similarly close.

Table 11: Ranking of average basic earnings levels of 12 graduate professions 2007 to 2018

Group	2007 rank	2012 rank	2018 rank
Secondary education teachers	8	9	9
Primary and nursery education teachers	12	11	12

Source: ASHE

In contrast, differences between the median and average figures for the non-teaching professions were more substantial. Looking at the two jobs at different ends of the pay spectrum – chemical scientists and legal professionals – for example, it is clear that the average figures were significantly larger than the respective medians.

For instance, the chemical scientist average of £696.90 was 16.3% higher than the corresponding median of £599.20. At the same time, the average figure for legal professionals was 22.6% higher than the equivalent median of £958.20. In comparison, the corresponding differentials for secondary and primary school teachers were just 1.6% and -0.1% respectively.

The fact that average basic pay levels in the non-teaching professions were much higher than the corresponding medians means that either:

- there are a greater proportion of higher-paid staff in non-teaching sectors;
- the pay levels of more experienced/senior staff in non-teaching professions are relatively higher;
- or both are true.

For teachers in England, the fact that median basic pay levels are not materially different from the corresponding average levels implies that the earnings distribution is not skewed one way or another in favour of lower or higher-paid staff. In contrast, in the non-teaching professions where the average figures were, to some extent or other, greater than the corresponding medians, the implication is that there are greater proportions of relatively higher-paid employees within these groups.

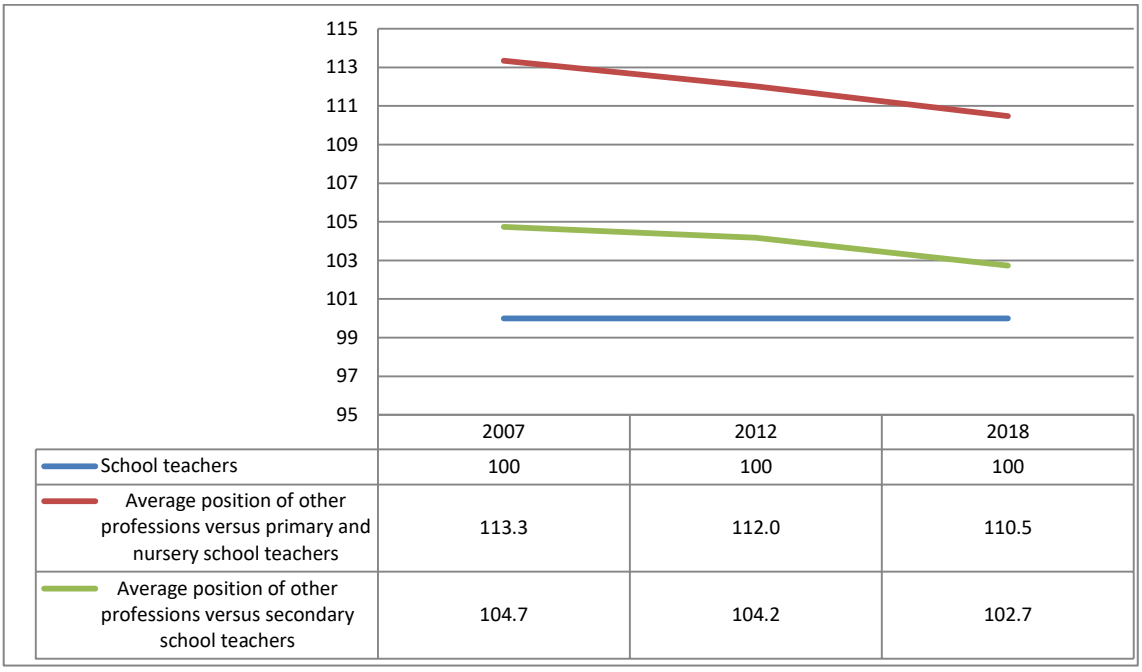
As a result, in terms of median basic earnings, teachers are relatively lower-paid compared to the other professions but when measured by average amounts they fall even further down the pay league.

5.3. Basic earnings of combined comparator group of professions relative to school teachers

By combining the basic earnings data for the non-teaching professions, it is possible to compare the un-weighted aggregate salary for the whole comparator group with teachers' basic earnings to provide another indication of how differentials between the two have varied over the period.

Using school teachers' basic earnings in England as the base for each year (= 100), Graph 15 shows the position relative to teachers of the combined median basic earnings for the selected graduate professions where data was available. It shows that both teaching groups in England earned less than the combined group throughout the period.

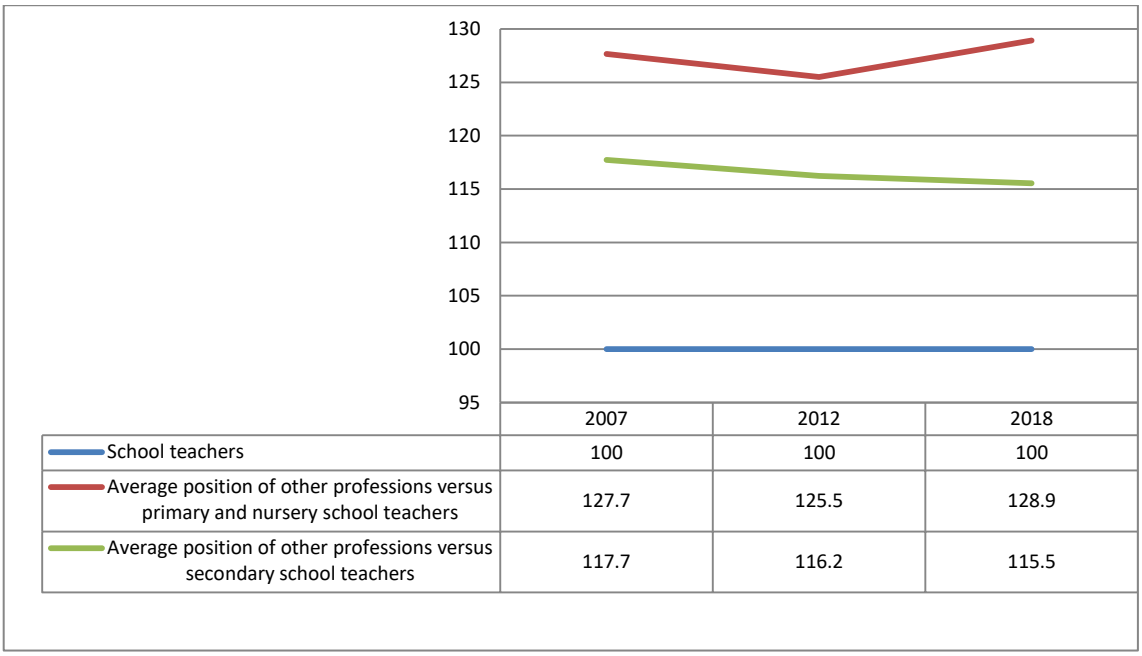
Graph 15: Indexed median basic earnings of all-comparator graduate professions relative to school teachers in England: 2007, 2012 and 2018



	2007	2012	2018
School teachers	100	100	100
Average position of other professions versus primary and nursery school teachers	113.3	112.0	110.5
Average position of other professions versus secondary school teachers	104.7	104.2	102.7

Source: ASHE

Graph 16: Indexed average basic earnings all-comparator graduate professions relative to school teachers in England: 2007, 2012 and 2018



	2007	2012	2018
School teachers	100	100	100
Average position of other professions versus primary and nursery school teachers	127.7	125.5	128.9
Average position of other professions versus secondary school teachers	117.7	116.2	115.5

Source: ASHE

Graph 16 illustrates the pattern between the average basic earnings of both teaching groups against an all-comparator group of graduate professions in England from 2007 to 2018. It shows that the

differentials were greater for both teaching groups when compared to the earlier equivalent graph which plotted the median basic earnings data.

For example, in 2018 the graph above shows that the differential between secondary teachers and primary and nursery teachers and the corresponding combined group figure were 10.5% and 28.5% respectively. By contrast, the earlier graph that presented the similar data for median basic earnings where differentials were smaller at 2.7% for primary and nursery teachers and 15.5% for those in secondary schools.

The graphs show that, when measured by both median and average basic earnings, the pay gap has been significant throughout the period but has narrowed somewhat over the 12 years. By contrast, the average basic earnings differentials have remained broadly stable over the period.

Between 2007 and 2018, the finding that teachers' median basic earnings had caught up to some extent is puzzling given that this was a period of recession and pay restraint for the teaching profession. Nevertheless, the improvements are not very large and are largely due to the fact that earnings growth in the wider economy was comparatively weaker in these years too, especially in the wake of the global recession after 2008. As has been noted elsewhere, earnings growth for most workers has yet to recover.

In addition, the long-term pay deal agreed for teachers prior to the recession would have improved their relative position to a certain extent. Moreover, pay improvements for school teachers may reflect compositional changes in the teaching workforce over the period. For example, it may have been that proportionately more teachers benefitted from career and salary progression.

The pattern might also be explained by variations in the size and compositions of the different sample sizes across the period together with the instance when the ONS made changes to the definitions of the job categories in 2010. Whenever dealing with unmatched samples, some caution needs to be exercised when interpreting the results.

Even bearing these limitations in mind however, it is clear that the comparison shows that teachers' median and average basic earnings for both teaching groups in England were notably lower than those for the all-comparator equivalent throughout the period. Any narrowing that did occur was

mostly as a result of weaker earnings growth more broadly following the economic crisis and subsequent lethargic recovery rather than large pay rises in teaching.

Another notable feature of the graph above is that while the differentials between the combined group and secondary teacher group narrowed slightly, the equivalent differentials relating to primary and nursery teachers widened. It might be the case that restraint has had a greater effect on the comparative performance of this group's earnings although with the number of primary school teachers increasing significantly from 2011 to 2016 it might also be a reflection of new teachers entering the profession on lower earnings levels.

5.4. Occupational findings on basic pay in detail

The unweighted aggregate salaries for non-teaching groups shown above may be influenced by very high or very low earnings figures for certain professions so we have compared the weekly earnings figures for each of the 10 non-teaching professions against those for the two teaching groups. For ease of comparison, we have also indexed all the earnings amounts and the findings are summarised below. Most are higher than those for teachers, although there are a small number of exceptions.

a) Science, Research, Engineering and Technology professionals

Indexed differentials of median basic earnings, 2007, 2012 and 2018

Table 12 summarises the findings in respect of the median earnings for occupations within the ASHE science group when compared to secondary education teachers in England. The science occupations, particularly chemical and physical scientists, have some of the smallest sample sizes in our analysis and the 2018 figures illustrate that secondary teachers' median basic earnings were higher than for those in these groups.

Table 12: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*669.9*	***100.0***	*704.4*	***100.0***	*740.4*	***100.0***
Chemical scientists	607.6	**90.7**	607.2	**86.2**	599.2	**80.9**
Biological scientists and biochemists	610.2	**91.1**	725.7	**103.0**	701.7	**94.8**
Physical scientists	691.6	**103.2**	760.3	**107.9**	735.4	**99.3**

Source: ASHE

Table 13 provides a similar analysis comparing the science occupations' basic earnings with those of primary and nursery school teachers. Here, the pattern was different with primary school teachers'

2018 median basic earnings trailing the corresponding figures for biological and physical scientists but leading those for chemical scientists.

Table 13: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*619.0*	***100.0***	*655.1*	***100.0***	*688.5*	***100.0***
Chemical scientists	607.6	**98.2**	607.2	**92.7**	599.2	**87.0**
Biological scientists and biochemists	610.2	**98.6**	725.7	**110.8**	701.7	**101.9**
Physical scientists	691.6	**111.7**	760.3	**116.1**	735.4	**106.8**

Source: ASHE

Indexed differentials of average basic earnings, 2007, 2012 and 2018

As mentioned earlier in the report, differentials between non-teaching and teaching earnings levels are greater when measured by average as compared to median figures. As a result, while the chemical scientist figures trail those of secondary teachers in 2012 and 2018, table 14 shows the gaps are smaller than the equivalent figures shown for median basic earnings.

Similarly, the biological group's average figure in 2018 was just over 5% higher than the equivalent secondary school figure based on average basic earnings whereas is was lower when measured by the median figures. For physical scientists, average basic earnings were 14% higher than the equivalent secondary teacher amount in 2018.

Table 14: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*685.2*	***100.0***	*699.7*	***100.0***	*752.6*	***100.0***
Chemical scientists	718.5	**104.9**	658.6	**94.1**	696.9	**92.6**
Biological scientists and biochemists	684.6	**99.9**	784.0	**112.0**	792.1	**105.2**
Physical scientists	735.3	**107.3**	909.5	**130.0**	857.9	**114.0**

Source: ASHE

Table 15 below exhibits a similar pattern but because primary and nursery teachers' basic earnings are lower than those of secondary teachers all the science groups pay levels were greater. For example, in 2018, chemical scientists has a 1.4% lead while the corresponding gaps in favour of biologists and physical scientists were 15.2% and 24.8% respectively.

Table 15: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*626.0*	***100.0***	*658.8*	***100.0***	*687.6*	***100.0***
Chemical scientists	718.5	**114.8**	658.6	**100.0**	696.9	**101.4**
Biological scientists and biochemists	684.6	**109.4**	784.0	**119.0**	792.1	**115.2**
Physical scientists	735.3	**117.5**	909.5	**138.1**	857.9	**124.8**

Source: ASHE

b) Engineering professionals

Indexed differentials of median basic earnings, 2007, 2012 and 2018

Median basic earnings for engineering professionals started the period slightly behind those of secondary education teachers with the gap narrowing by 2012. This changed in 2018 when median basic earnings exceeded those of secondary school teachers marginally by 3.5%.

Table 16: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*669.9*	***100.0***	*704.4*	***100.0***	*740.4*	***100.0***
Engineering professionals	613.1	**91.5**	680.9	**96.7**	766.6	**103.5**

Source: ASHE

A comparison with the median basic earnings of primary and nursery education teachers portrays a similar pattern but engineers' pay was already ahead by 2012. In 2007, the engineering figure was 99% of the primary and nursery teachers' figure before increasing to 103.9% in 2012 and then rising to 111.3% at the end of the period.

Table 17: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*619.0*	***100.0***	*655.1*	***100.0***	*688.5*	***100.0***
Engineering professionals	613.1	**99.0**	680.9	**103.9**	766.6	**111.3**

Source: ASHE

Indexed differentials of average basic earnings, 2007, 2012 and 2018

An analysis of average basic earnings for engineers demonstrates a similar pattern to the median findings with engineers' pay starting the period behind before moving ahead in 2012. In 2007, the engineering figure trailed the secondary teacher equivalent by 5.7% before moving 3% ahead by 2012. By 2018, it was further ahead standing at 106.5% of the secondary teacher equivalent.

Table 18: Comparison with secondary teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*685.2*	***100.0***	*699.7*	***100.0***	*752.6*	***100.0***
Engineering professionals	646.4	**94.3**	720.7	**103.0**	801.7	**106.5**

Source: ASHE

Table 19 illustrates the position in relation to primary and nursery education teachers, demonstrating a similar pattern with the exception that the engineering figures were higher than those for primary teachers in all three years.

Table 19: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*626.0*	***100.0***	*658.8*	***100.0***	*687.6*	***100.0***
Engineering professionals	646.4	**103.3**	720.7	**109.4**	801.7	**116.6**

Source: ASHE

c) Health professionals and pharmacists

Indexed differentials of median basic earnings, 2007, 2012 and 2018

Alongside legal professionals, earnings for those working in the health sector were at the higher end of the distribution as illustrated in Table 20. It shows significant median earnings leads over secondary education teachers in the three years shown. In fact, in 2007, 2012 and 2018, the differentials were 34.9%, 23.7% and 17.4% respectively. Pharmacists earned more at the median in 2012 and 2018, though they started the period behind teachers' earnings. As the table shows though, the differentials were not so great as for health professionals, lagging by 5% in 2007 while moving ahead to 105% and 104.7% of the equivalent secondary school teacher figures in 2012 and 2018.

Table 20: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*669.9*	***100.0***	*704.4*	***100.0***	*740.4*	***100.0***
Health professionals	903.9	**134.9**	871.6	**123.7**	868.9	**117.4**
Pharmacists	636.7	**95.0**	739.8	**105.0**	775.4	**104.7**

Source: ASHE

The median basic earnings leads for health professionals and pharmacists were both greater when compared with primary and nursery teachers as shown in Table 21.

Table 21: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*619.0*	***100.0***	*655.1*	***100.0***	*688.5*	***100.0***
Health professionals	903.9	**146.0**	871.6	**133.0**	868.9	**126.2**
Pharmacists	636.7	**102.9**	739.8	**112.9**	775.4	**112.6**

Source: ASHE

Indexed differentials of average basic earnings, 2007, 2012 and 2018

Examining average basic earnings as shown in Tables 22 and 23, the lead of health professionals over secondary teachers narrowed but still ranged between 40.9% and 58.5% over the period. For pharmacists, the differential was smaller with pharmacists' average basic earnings trailing those of secondary teachers by 7.6% in 2007 but leading them by 9.2% in 2012 and 6.8% in the final year.

Table 22: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*685.2*	***100.0***	*699.7*	***100.0***	*752.6*	***100.0***
Health professionals	1,086.0	**158.5**	1,065.7	**152.3**	1,060.7	**140.9**
Pharmacists	633.4	**92.4**	763.9	**109.2**	803.9	**106.8**

Source: ASHE

The pattern was similar when primary and nursery teachers' average basic earnings were examined although differentials were larger as shown in the table below. In addition, pharmacists' earnings were ahead throughout the period although only marginally in 2007.

Table 23: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*626.0*	***100.0***	*658.8*	***100.0***	*687.6*	***100.0***
Health professionals	1,086.0	**173.5**	1,065.7	**161.8**	1,060.7	**154.3**
Pharmacists	633.4	**101.2**	763.9	**116.0**	803.9	**116.9**

Source: ASHE

d) Business, research, media and public service professionals

Legal professionals are the other relatively well-paid group and Table 24 shows how their median basic earnings compared to those of secondary education teachers across the period. In 2007, for instance, the legal professional median basic earnings figure was 28.7% ahead of that for the teaching group but then fell slightly to 17% in 2012 before rising higher, to 29.4% in the latest year.

Table 24: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*669.9*	***100.0***	*704.4*	***100.0***	*740.4*	***100.0***
Legal professionals	862.4	**128.7**	824.1	**117.0**	958.2	**129.4**

Source: ASHE

A comparison with primary and nursery education teachers' median basic earnings illustrates a similar pattern with larger differentials reflecting the fact that this teaching group is lower-paid than their secondary school counterparts.

Table 25: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*619.0*	***100.0***	*655.1*	***100.0***	*688.5*	***100.0***
Legal professionals	862.4	**139.3**	824.1	**125.8**	958.2	**139.2**

Source: ASHE

Indexed differentials of average basic earnings, 2007, 2012 and 2018

When average differentials were examined, the gaps were more substantial. For example, Table 26 demonstrates that legal professionals had an average earnings lead over secondary school teachers' earnings of 48.1% in 2007, 47.3% in 2012 and 56.1% in 2018.

Table 26: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*685.2*	***100.0***	*699.7*	***100.0***	*752.6*	***100.0***
Legal professionals	1,014.6	**148.1**	1,030.8	**147.3**	1,175.0	**156.1**

Source: ASHE

The gaps with primary and nursery education teachers were even greater in all three years, finishing the period at over 70% in 2018.

Table 27: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*626.0*	***100.0***	*658.8*	***100.0***	*687.6*	***100.0***
Legal professionals	1,014.6	**162.1**	1,030.8	**156.5**	1,175.0	**170.9**

Source: ASHE

Indexed differentials of median basic earnings, 2007, 2012 and 2018

Business, research and administrative professionals are usually considered a relatively well-paid group but when measured by median basic earnings the findings only partially reflect this. This is demonstrated by tables 28 and 29 which show that teachers' earnings are lagging behind in every case but nowhere near the same extent as for health and legal professionals.

Management consultants' median basic earnings were between 4.2% and 11.8% ahead of those of secondary school teachers across the period. For accountants, the differentials were narrower and ranged from just 0.1% to 3.4%.

Table 28: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*669.9*	***100.0***	*704.4*	***100.0***	*740.4*	***100.0***
Chartered and certified accountants	670.8	**100.1**	728.3	**103.4**	757.6	**102.3**
Management consultants and business analysts	748.8	**111.8**	753.2	**106.9**	771.7	**104.2**

Source: ASHE

The pattern was similar when compared to the earnings of primary and nursery school teachers although in every case the differential was greater.

Table 29: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*619.0*	***100.0***	*655.1*	***100.0***	*688.5*	***100.0***
Chartered and certified accountants	670.8	**108.4**	728.3	**111.2**	757.6	**110.0**
Management consultants and business analysts	748.8	**121.0**	753.2	**115.0**	771.7	**112.1**

Source: ASHE

An analysis of average earnings showed greater leads for management consultants with figures at the end of the period that were 14.4% ahead of secondary school teachers and 25.3% more than those for primary teachers. The corresponding differentials for accountants were 10.4% and 20.8% respectively.

Indexed differentials of average basic earnings, 2007, 2012 and 2018

Table 30: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*685.2*	***100.0***	*699.7*	***100.0***	*752.6*	***100.0***
Chartered and certified accountants	723.6	**105.6**	766.2	**109.5**	830.8	**110.4**
Management consultants and business analysts	871.5	**127.2**	835.1	**119.4**	861.3	**114.4**

Source: ASHE

Table 31: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*626.0*	***100.0***	*658.8*	***100.0***	*687.6*	***100.0***
Chartered and certified accountants	723.6	**115.6**	766.2	**116.3**	830.8	**120.8**
Management consultants and business analysts	871.5	**139.2**	835.1	**126.8**	861.3	**125.3**

Source: ASHE

e) Architects, Town Planners and Surveyors

Indexed differentials of median basic earnings, 2007, 2012 and 2018

Chartered surveyors are a group that appear relatively lower-paid in terms of comparisons with teachers based on median basic earnings. For instance, the relevant figure for chartered surveyors was worth just 90.6% of the corresponding secondary education teacher figure in 2018.

Table 32: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*669.9*	***100.0***	*704.4*	***100.0***	*740.4*	***100.0***
Chartered surveyors	670.8	**100.1**	646.7	**91.8**	671.0	**90.6**

Source: ASHE

Similarly, chartered surveyors' median basic earnings also trailed those of primary school teachers – by 2.5% in the latest year.

Table 33: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*619.0*	***100.0***	*655.1*	***100.0***	*688.5*	***100.0***
Chartered surveyors	670.8	**108.4**	646.7	**98.7**	671.0	**97.5**

Source: ASHE

Indexed differentials of average basic earnings, 2007, 2012 and 2018

When measured by average basic earnings, the picture changes somewhat with chartered surveyors' basic earnings ahead of the figures for primary school teachers in all years, but slightly lower than the secondary teaching figures in both 2012 and 2018. For secondary school teachers, the

comparison shows that chartered surveyors' earnings were only marginally lower in 2018, a differential of 3.1%, while when measured against primary school teachers the difference was 6.1% in favour of chartered surveyors.

Table 34: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*685.2*	***100.0***	*699.7*	***100.0***	*752.6*	***100.0***
Chartered surveyors	715.6	**104.4**	691.3	**98.8**	729.5	**96.9**

Source: ASHE

Table 35: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*626.0*	***100.0***	*658.8*	***100.0***	*687.6*	***100.0***
Chartered surveyors	715.6	**114.3**	691.3	**104.9**	729.5	**106.1**

Source: ASHE

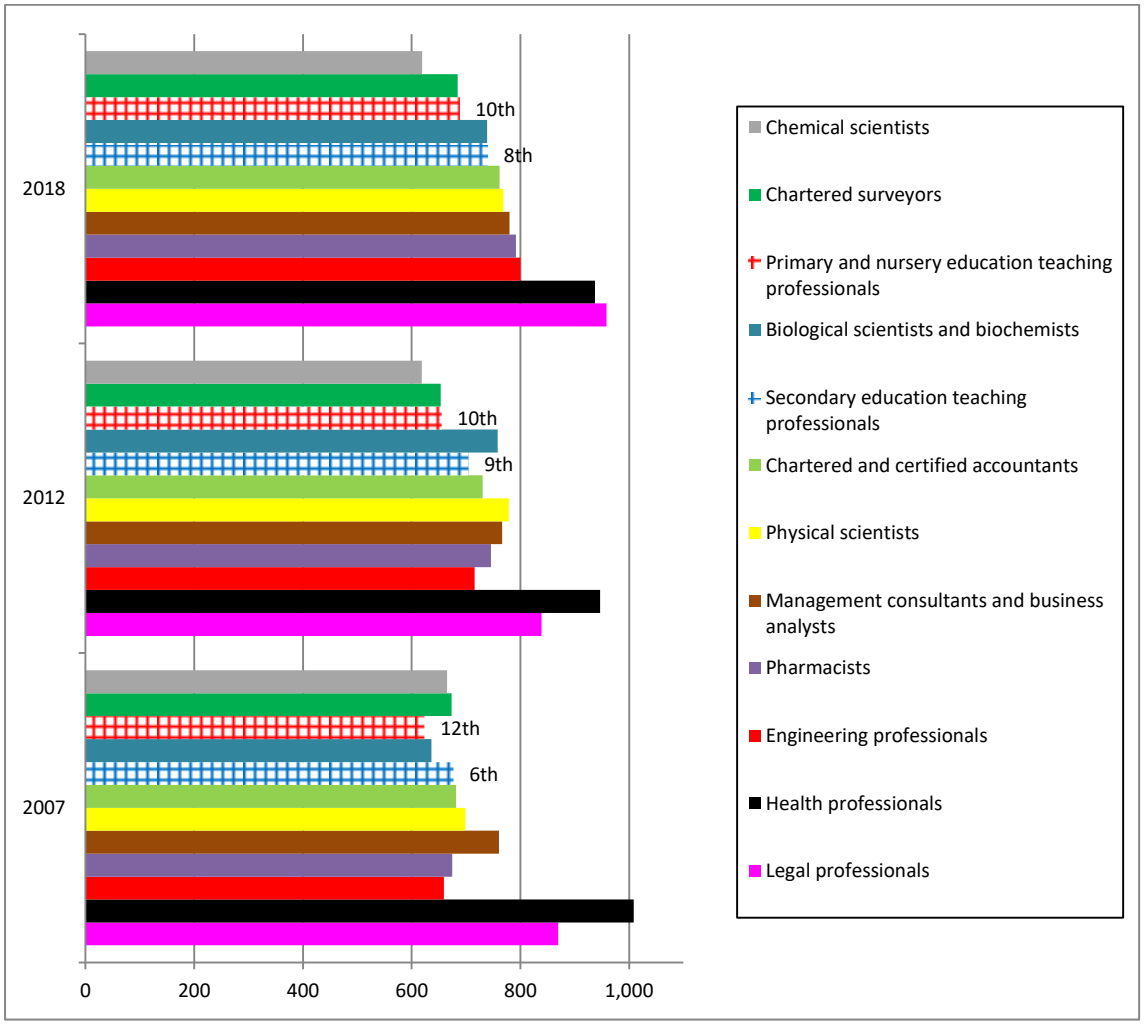
5.5. Gross earnings of comparator graduate professions relative to school teachers

Other additions to basic pay, such as overtime or shift pay, do not play a part in teachers' earnings whereas those employed in other sectors often receive significant amounts from other sources. For this reason, to provide a full picture of pay relativities across the 12 professions it is important to examine gross as well as basic earnings.

Graphs 17 and 18 present data very similar to the earlier graphs presenting basic earnings but this time the analysis is based on gross earnings. Because these charts incorporate data on additional elements of remuneration, the magnitude of the figures tends to be larger for most non-teaching jobs and the ranking order has changed somewhat although the two teaching groups remain near the bottom of the earnings rankings in both graphs.

Graph 17 shows that in 2018, secondary teachers were ranked eighth out of the 12 professions in terms of median gross earnings while primary teachers were placed tenth ahead of chemical scientists and chartered surveyors.

Graph 17: Comparison of median gross earnings of all comparator graduate professions including school teachers in England: 2007, 2012 and 2018



Source: ASHE

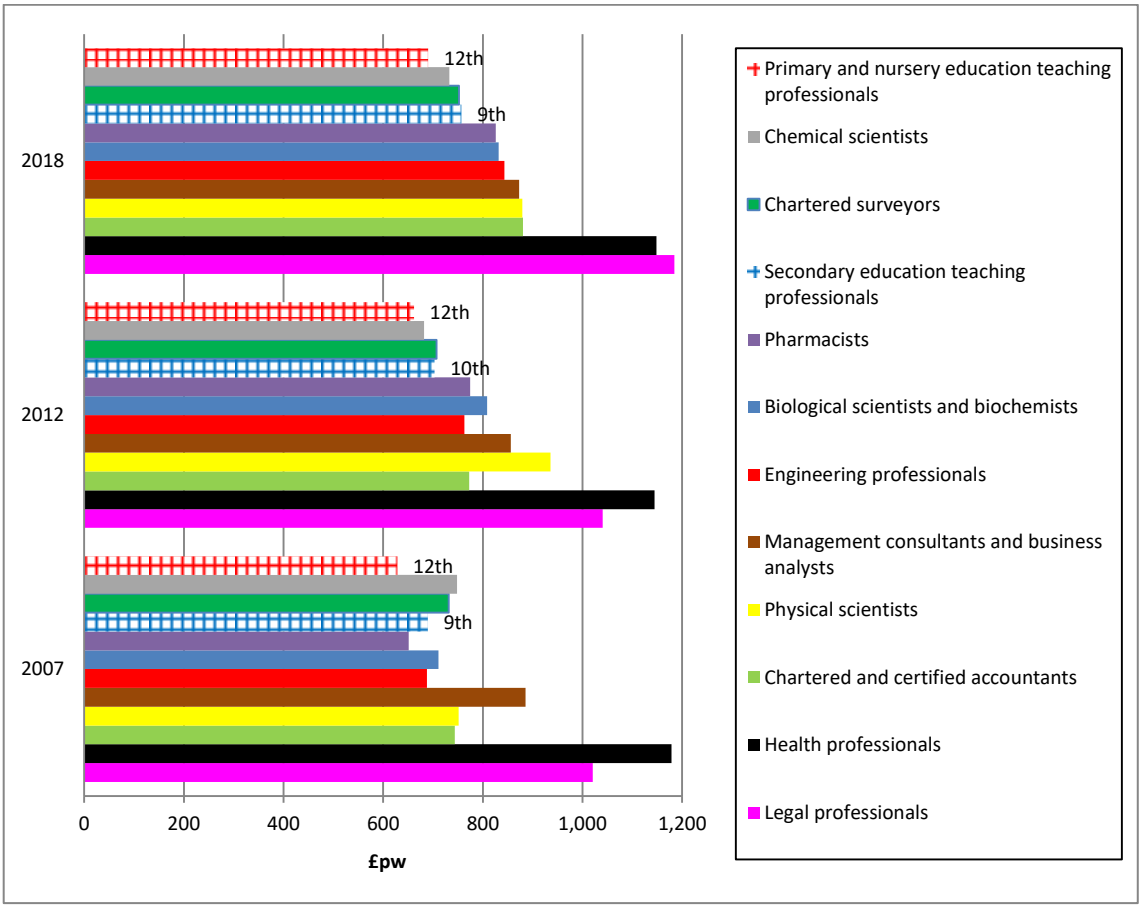
Across the whole period, secondary teachers' ranking fell from sixth position in 2007 to ninth in 2012 before finishing the period in eighth. Primary and nursery school teachers started the period in the bottom position before moving to tenth place in both 2012 and 2018.

Table 36: Ranking of median gross earnings levels of 12 graduate professions in England 2007 to 2018

Group	2007 rank	2012 rank	2018 rank
Secondary education teachers	6	9	8
Primary and nursery education teachers	12	10	10

Source: ASHE

Graph 18: Comparison of average gross earnings of all comparator graduate professions including school teachers in England: 2007, 2012 and 2018



Source: ASHE

Graph 18 presents similar information but this time it is based on average gross earnings and shows that earnings for both teaching groups were, on the whole, lower in the rankings than when measured by the median figures. Unlike the comparison for median gross earnings, however, there was less variation across the three years with both teaching groups at or near the bottom positions in almost all years.

The slightly poorer ranking positions exhibited by teachers' gross earnings levels compared to basic earnings reflect the fact that remuneration additional to basic salary is less significant for teachers than for almost all the other professions examined.

Table 37: Ranking of average gross earnings levels of 12 graduate professions in England 2007 to 2018

Group	2007 rank	2012 rank	2018 rank
Secondary education teachers	9	10	9
Primary and nursery education teachers	12	12	12

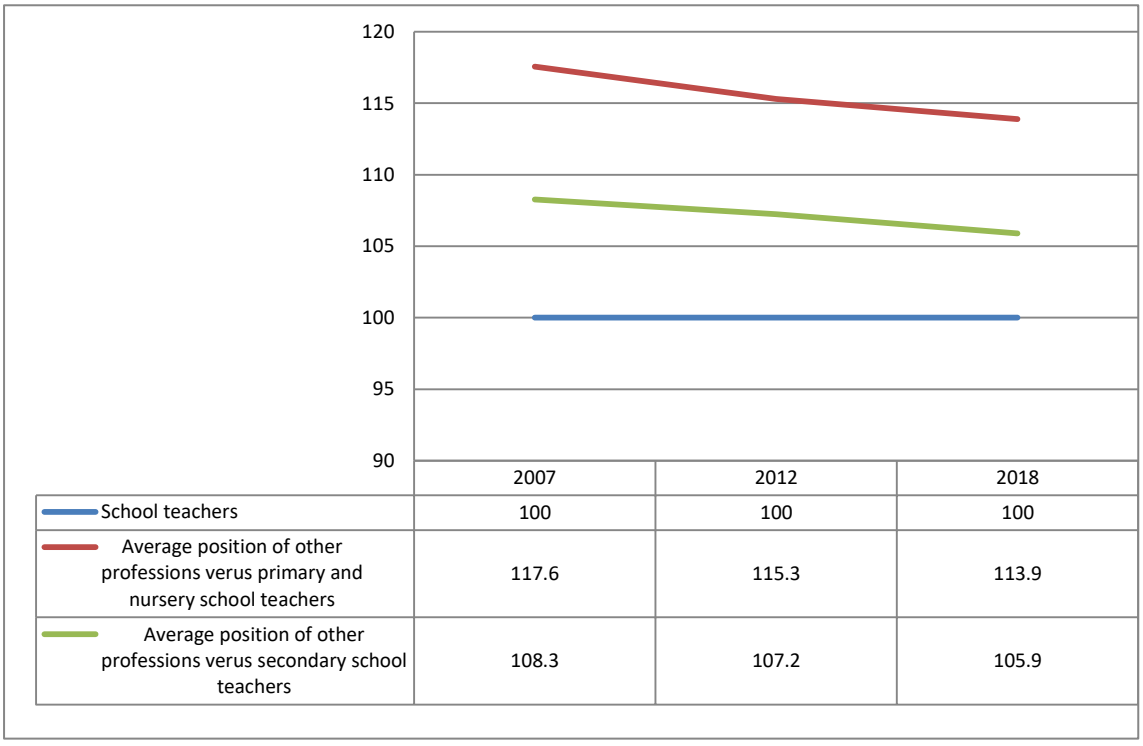
Source: ASHE

5.6. Gross earnings of combined comparator graduate professions relative to school teachers

As shown earlier in the analysis for basic earnings, by combining the gross earnings data for the non-teaching professions, it is possible to compare the unweighted aggregate figures for the whole group with teachers' gross earnings. This provides another indication of how differentials have varied over the period as illustrated in the following graphs.

As with the pattern exhibited by basic earnings shown earlier, teachers' gross earnings were again below the combined figures in all three years. Similarly, the primary and nursery school teacher differential was greater than the corresponding one for secondary teachers throughout the period. The main difference with the basic earnings analysis, however, was that for both teaching groups, the differentials were greater when measured by gross earnings.

Graph 19: Indexed median gross earnings lead of all-comparator graduate professions over school teachers in England: 2007, 2012 and 2018



	2007	2012	2018
School teachers	100	100	100
Average position of other professions verus primary and nursery school teachers	117.6	115.3	113.9
Average position of other professions verus secondary school teachers	108.3	107.2	105.9

Source: ASHE

Graph 19 shows that median gross earnings for the 10 selected graduate professions in England were 8.3% ahead of the median earnings for secondary school teachers and some 17.6% greater than median earnings for primary and nursery education teachers in 2007.

By 2012, the median gross earnings lead of comparator graduate professionals over secondary school teachers had fallen slightly to 7.2% before falling once more to 5.9% in 2018. The pattern was similar for primary and nursery school teachers with a narrowing throughout the period from a 17.6% differential in 2007 to 15.3% in 2012 and then 13.9% in 2018.

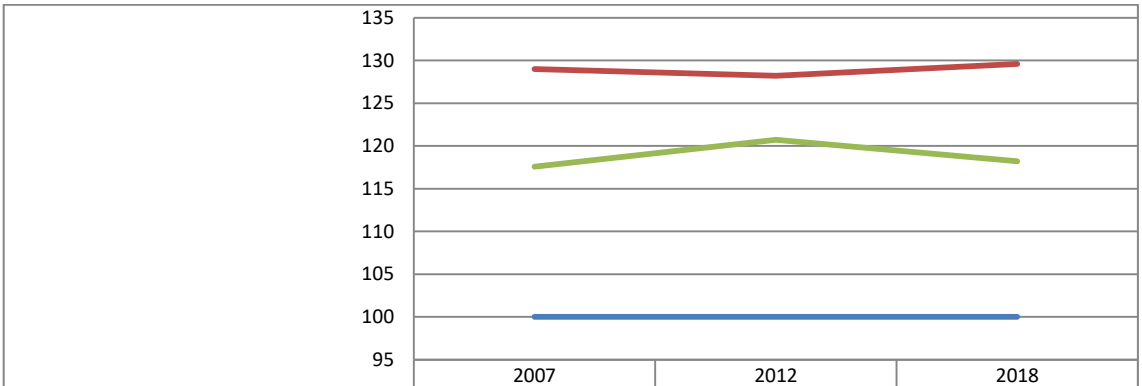
As mentioned earlier, it should be borne in mind when reviewing these findings that the combined figure may be influenced by particular professions that are either very high- or low-paid. For example, health and legal professionals were by far the highest-paid throughout the period. In addition, the caveats mentioned earlier— unmatched samples across the three years and changing occupational definitions over the period – are also likely to affect the results.

It is not entirely clear why there was a narrowing in differentials in the graph above but there could be a number of possible reasons. For example, between 2007 and 2012 one of the highest-paid occupations, health professionals, had its definition changed resulting in the exclusion of medical doctors resulting in a subsequent fall in aggregate pay levels which would have affected the aggregate amount.

Later on in the period between 2007 and 2012, during the depths of the financial crisis, teachers were subject to a pay deal that had been agreed earlier. Although the rises received were modest, they still represented larger uplifts than were awarded to most other professions which could explain at least part of the narrowing trend. More broadly, because the samples are not matched, some of the trend could be explained by the changing compositions of each profession over many years.

When using average measures the differentials between teachers and other graduate professions were greater than the corresponding median differentials. For example, the differential between the average gross earnings of the all-comparator group and secondary teachers in England was 17.6% in 2007 rising to 20.7% in 2012 before finishing the period at 18.2%. The corresponding figures for primary and nursery school teachers were 29%, 28.2% and 29.6% respectively as shown in Graph 20.

Graph 20: Indexed average gross earnings lead of all-comparator graduate professions over school teachers in England: 2007, 2012 and 2018



	2007	2012	2018
School teachers	100	100	100
Average position of other professions verus primary and nursery school teachers	129.0	128.2	129.6
Average position of other professions verus secondary school teachers	117.6	120.7	118.2

Source: ASHE

5.7. Analysis of quartiles

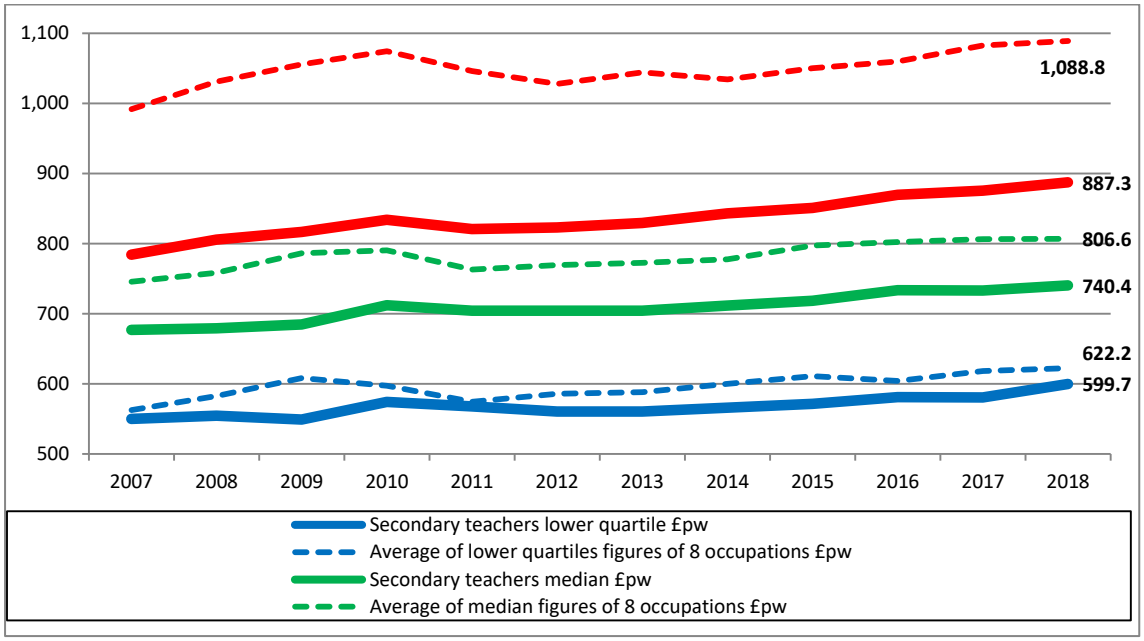
Analyses of median and average pay data are useful but they do not tell us a great deal about earnings at the upper and lower ends of the pay distribution. In order to gain a greater insight into the earnings of teachers and other professionals nearer the upper and lower levels it is necessary to look at other statistics.

This is the reason why this year's report includes an extended analysis of lower and upper quartile gross earnings. This is particularly important because many in the teaching progression argue that pay levels, while not being particularly competitive at median and average levels, fall further behind when those on higher salaries are considered.

Our findings are already summarised in the introduction but the full findings are presented here. Graph 21 demonstrates the aggregate picture by plotting the difference between the lower quartile, median and upper quartile gross earnings for secondary school teachers from 2007 to 2018 against the combined aggregate equivalent figures for a range of non-teaching comparators.

Every combined figure is calculated by taking the average of each profession's lower quartile, median and upper quartile. In total, eight professions are examined for which data is available for the full period – 2007 to 2018.

Graph 21: Comparison of lower quartile, median and upper quartiles gross earnings per week for secondary school teachers and non-teaching combined comparator group 2007 to 2018



Source: ASHE

What the graph shows is that all three figures – lower quartile, median and upper quartile – were greater for the non-teaching comparator group than for secondary school teachers. More notably though, an examination of the magnitude of the differentials shows that for each statistic – lower quartile, median and upper quartile – the differentials increase.

For example, in 2018 the non-teaching lower quartile figure, at £622.20 per week, was 3.8% higher than the equivalent teaching figure of £599.70. By contrast, the median and upper quartile differentials were 8.9% and 22.7% in favour of the non-teaching groups. At the median, the non-teaching figure was £806.60 while the equivalent figure was £740.70. At the upper quartile level the difference was over £200 per week with the respective figures standing at £1,088.80 and £887.30 per week. Based on these findings, concerns that earnings differences between teachers and other professions are even greater in the higher reaches of the distribution appear to be borne out.

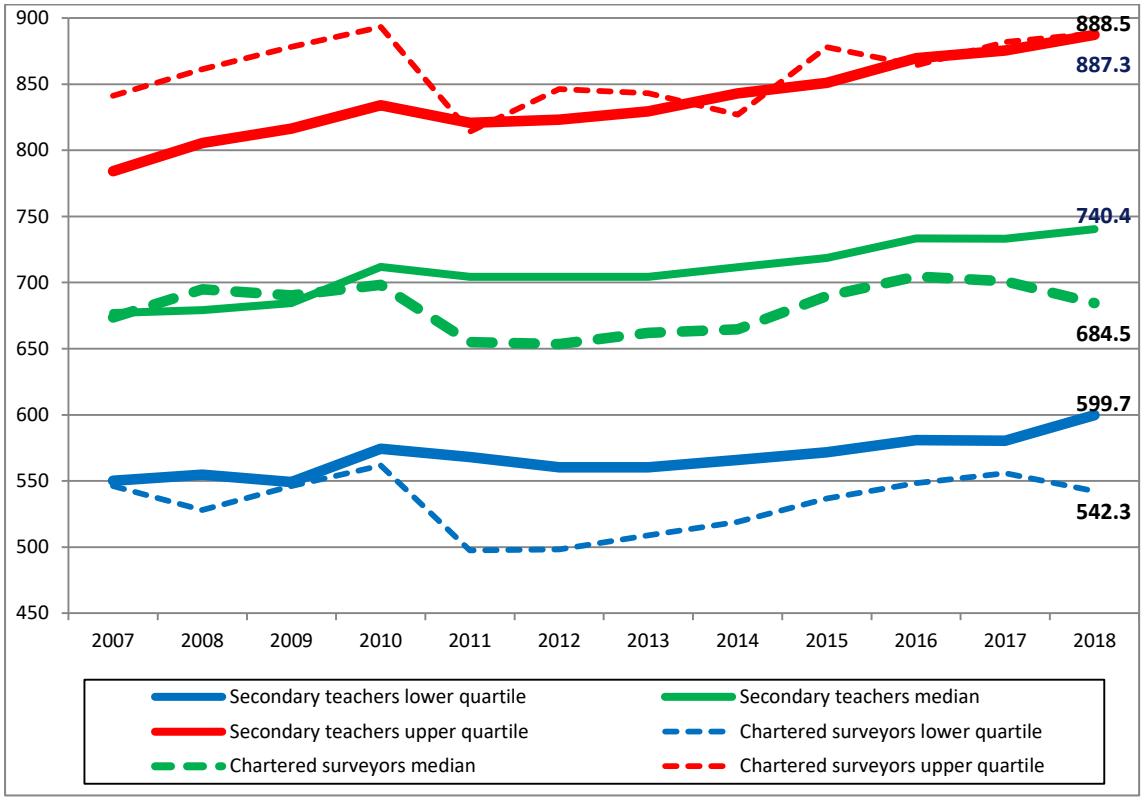
It should also be noted that this analysis is based on secondary school teachers, the higher-paid of the two teaching groups. Carrying out the same analysis for primary and nursery teachers produces even greater differentials. For instance, the lower and upper quartile gross earnings of primary and nursery teachers in 2018 stood at £550.80 and £792.80 per week which compared to equivalent amounts of £599.70 and £887.30 for secondary teachers.

As with our previous aggregate analyses, using a combined occupational group may risk the danger of being overly influenced by very high- or low-paying professions. As a result, below are similar graphs for selected non-teaching groups at the lower and higher ends of the earnings distribution that prove that the combined picture is representative of the overall relationship.

The first graph of this type presents a comparison of earnings for secondary teachers with those for the lowest-paid profession from the combined group, chartered surveyors. The graph demonstrates two trends with the change occurring around the time of the financial crisis. Prior to the crisis, both groups' lower quartile and median gross earnings were generally in line with one another while earnings at upper quartile levels favoured the surveyor group.

However just after the financial crisis, the gross pay of chartered surveyors dipped significantly before following a similar trend to the teaching group from 2011 onwards. The effect of this dip was that the lower quartile and median gross pay of surveyors fell behind those of secondary teachers while earnings for both groups at upper quartile levels were almost identical.

Graph 22: Comparison of lower quartile, median and upper quartiles gross pay per week for secondary school teachers and chartered surveyors 2007 to 2018

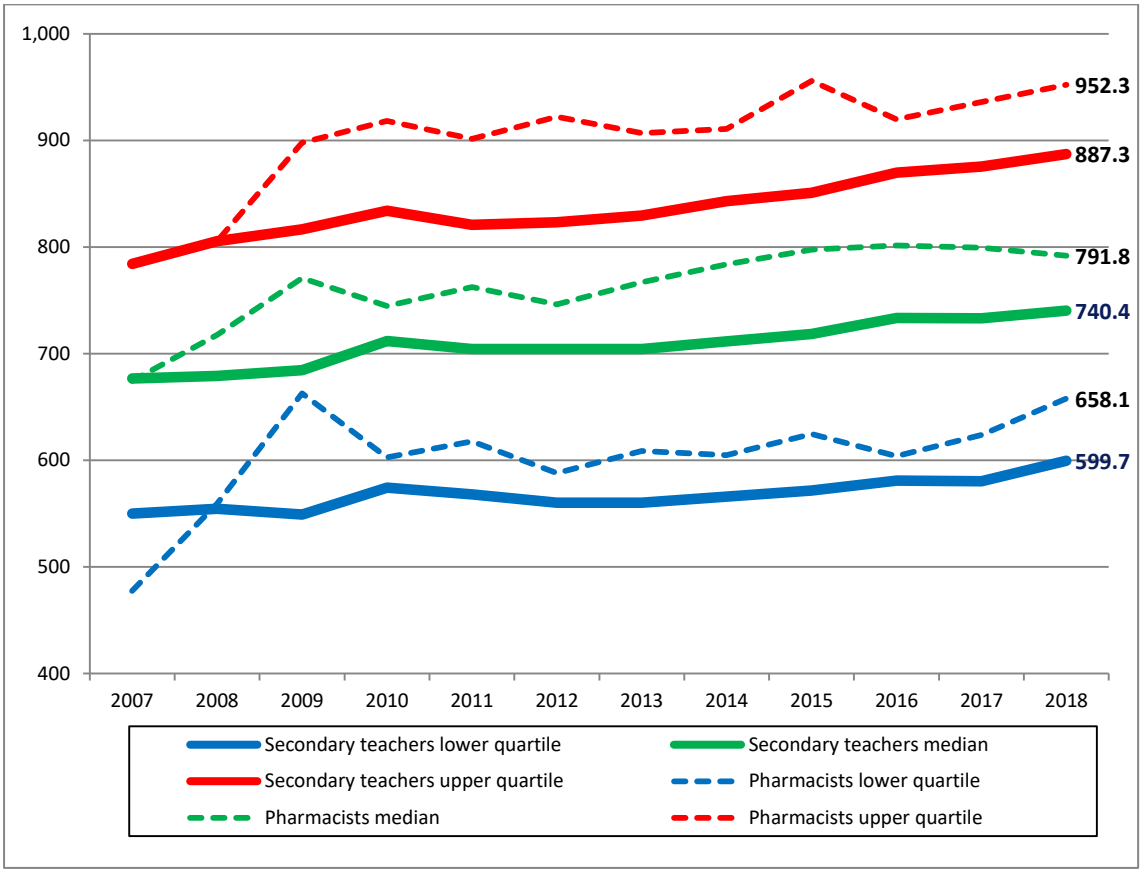


Source: ASHE

While the relative position of secondary teachers is favourable compared to chartered surveyors does this mean that the same is true for some or all of the other professions? Graph 23 shows the same analysis for pharmacists, the second-lowest paid professionals in the combined group. It shows that, unlike surveyors, pharmacists enjoyed higher earnings at the lower quartile, median and upper quartile levels throughout the last decade.

In fact, the pharmacists' lower quartile, median and upper quartile figures finished the period 9.7%, 6.9% and 7.3% higher than the equivalent secondary school figures.

Graph 23: Comparison of lower quartile, median and upper quartiles gross pay per week for secondary school teachers and pharmacists 2007 to 2018

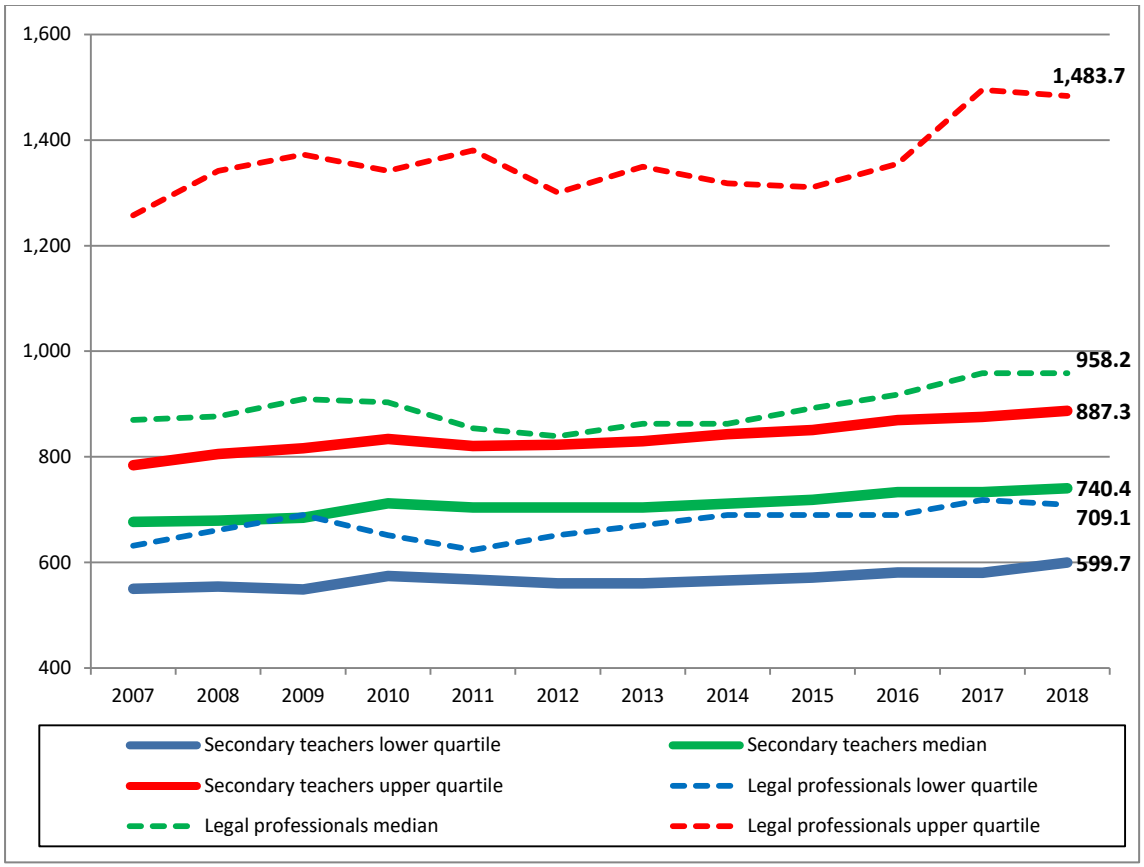


Source: ASHE

To provide a fuller picture, Graph 24 presents the corresponding analysis for legal professionals, the highest-paid group from the comparator occupations. It shows that the legal professionals' gross earnings were significantly ahead of the teaching group throughout the period. In fact, as the graph shows, the differentials were relatively stable throughout the period. In 2018, the secondary

teachers' lower quartile, median and upper quartile levels trailed the legal equivalents by 18.2%, 29.4% and 67.2% respectively.

Graph 24: Comparison of lower quartile, median and upper quartiles gross pay per week for secondary school teachers and Legal professionals 2007 to 2018

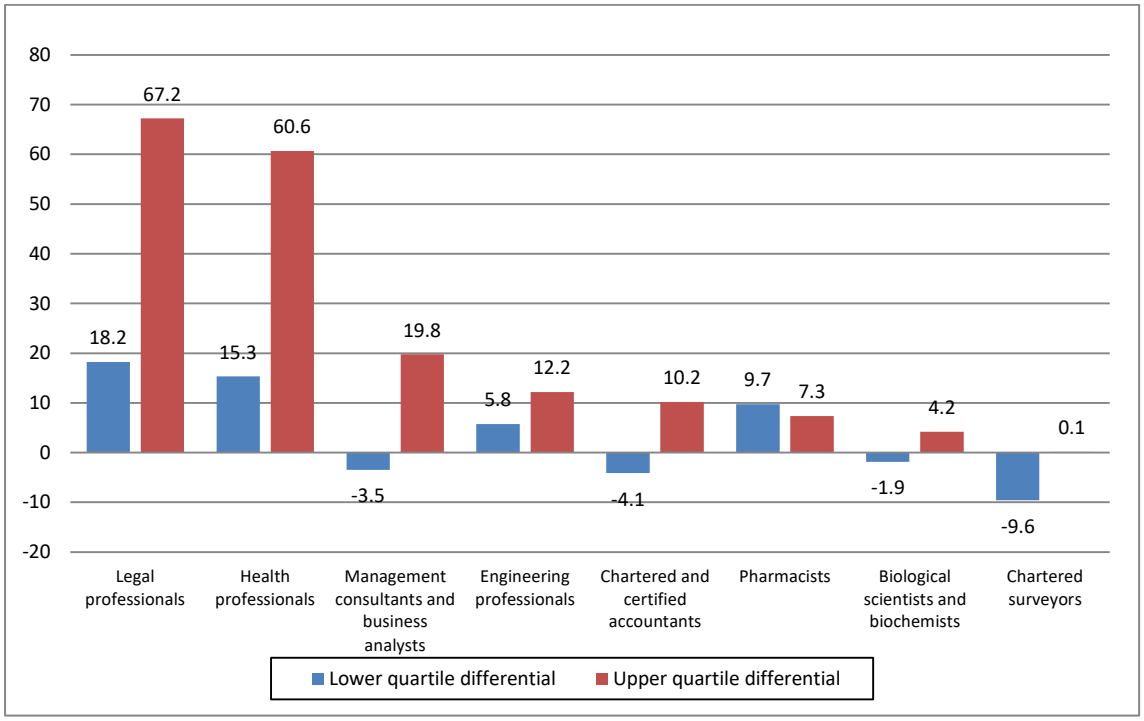


Source: ASHE

Another way of looking at the data is to plot the lower and upper quartile differentials for each of the eight non-teaching professions against the equivalent secondary teacher figures. The graph below shows that lower quartile gross earnings for secondary school teachers in 2018 were below the equivalent figures for five professions and higher in the case of three, most notably chartered surveyors where the differential was greatest at 9.6%.

Variations were greater when the upper quartile figures were examined, however with differences in 2018 ranging between 0.1% in favour of chartered surveyors and 67.2% where the legal figure was greater. It is clear therefore that the pattern exhibited by the combined occupational analysis is not overly influenced by one or more high- or low-paid professions.

Graph 25: Position of eight professions relative to secondary teacher lower and upper quartile gross pay 2018



Source: ASHE

5.8 Occupational findings on gross pay in detail

Below we summarise the main findings from the gross earnings indexation analysis in Tables X to Y.

a) Science, research, engineering and technology professionals

Indexed differentials of median gross earnings, 2007, 2012 and 2018

For chemical scientists, median gross earnings started the period slightly down on those of secondary teachers, falling further in 2012 before finishing the period with a value that was 83.7% of the teaching equivalent.

For biologists, median gross earnings were well behind in 2007 while the figures showed a 7.6% advantage in 2012 and near parity in 2018. In contrast, physical scientists started the period with a 3.2% earnings lead before increasing to 10.5% in 2012 and then falling back to 3.8% in 2018. It is worth noting however that the figures for chemical and physical scientists were among the least precise among the non-teaching professions due to sample size limitations.

Table 38: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*676.9*	***100.0***	*704.4*	***100.0***	*740.4*	***100.0***
Chemical scientists	665.2	**98.3**	618.7	**87.8**	619.4	**83.7**
Biological scientists and biochemists	636.1	**94.0**	758.1	**107.6**	739.0	**99.8**
Physical scientists	698.8	**103.2**	778.6	**110.5**	768.7	**103.8**

Source: ASHE

The pattern of median gross earnings with respect to primary and nursery school teachers was similar although the generally lower earnings levels of primary and nursery education teachers meant that scientists' earnings were relatively higher. As a result, biological scientists finished the period in 2018 with median gross earnings worth around 107.3% of the primary school teacher figure while the equivalent figure for physical scientists was 111.6%. In contrast, the chemical scientists' figure was lower at 90%.

Table 39: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*623.5*	***100.0***	*655.1*	***100.0***	*688.5*	***100.0***
Chemical scientists	665.2	**106.7**	618.7	**94.4**	619.4	**90.0**
Biological scientists and biochemists	636.1	**102.0**	758.1	**115.7**	739.0	**107.3**
Physical scientists	698.8	**112.1**	778.6	**118.9**	768.7	**111.6**

Source: ASHE

Indexed differentials of average gross earnings, 2007, 2012 and 2018

An analysis of average gross earnings relating to all three scientific groups showed figures above those for primary school teachers in every year. In contrast, the comparison with secondary school teachers illustrates that the scientific groups have higher earnings generally, with the exception of chemical scientists in 2018 when this group's average gross earnings were 3.2% behind those of secondary school teachers.

Table 40: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*689.7*	***100.0***	*703.0*	***100.0***	*757.2*	***100.0***
Chemical scientists	748.2	**108.5**	682.3	**97.1**	732.8	**96.8**
Biological scientists and biochemists	710.8	**103.1**	808.3	**115.0**	832.0	**109.9**
Physical scientists	751.1	**108.9**	935.5	**133.1**	879.1	**116.1**

Source: ASHE

The equivalent figures for biologists and physical scientists in 2018 were 9.9% and 16.1% ahead of the teaching group figure.

Table 41: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*628.6*	***100.0***	*661.9*	***100.0***	*690.6*	***100.0***
Chemical scientists	748.2	**119.0**	682.3	**103.1**	732.8	**106.1**
Biological scientists and biochemists	710.8	**113.1**	808.3	**122.1**	832.0	**120.5**
Physical scientists	751.1	**119.5**	935.5	**141.3**	879.1	**127.3**

Source: ASHE

b) Engineering professionals

Indexed differentials of median gross earnings, 2007, 2012 and 2018

Table 42 demonstrates that median gross earnings for engineering professionals were behind those for secondary education teachers in 2007 by 3.6%. In contrast, earnings rose to 101.6% of the teaching figure in 2012 before finishing the period with a lead of 8.1%.

Table 42: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*676.9*	***100.0***	*704.4*	***100.0***	*740.4*	***100.0***
Engineering professionals	659.6	**97.4**	716.0	**101.6**	800.2	**108.1**

Source: ASHE

When engineering professionals' median gross earnings were compared with those for primary school teachers, as illustrated in Table 43, a similar pattern emerges although engineers were paid more in all three years. The engineering figures started the period with a lead of 5.8% before rising to 9.3% and then once more to 16.2%.

Table 43: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*623.5*	***100.0***	*655.1*	***100.0***	*688.5*	***100.0***
Engineering professionals	659.6	**105.8**	716.0	**109.3**	800.2	**116.2**

Source: ASHE

Indexed differentials of average gross earnings, 2007, 2012 and 2018

In respect of their average gross earnings in each of the three years under review, Tables 44 and 45 demonstrate that the figures for engineering professionals were ahead of those for both secondary and primary school teachers in almost all three years. The engineering average gross earnings figure finished the period 11.4% and 22.1% ahead of the equivalent figures for secondary and primary school teachers.

Table 44: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*689.7*	***100.0***	*703.0*	***100.0***	*757.2*	***100.0***
Engineering professionals	687.5	**99.7**	763.2	**108.6**	843.5	**111.4**

Source: ASHE

Table 45: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*628.6*	***100.0***	*661.9*	***100.0***	*690.6*	***100.0***
Engineering professionals	687.5	**109.4**	763.2	**115.3**	843.5	**122.1**

Source: ASHE

c) Health professionals

Indexed differentials of median gross earnings, 2007, 2012 and 2018

Tables 46 and 47 demonstrate that health professionals were among the highest-paid with median gross earnings significantly ahead of those for both teaching groups. In 2018, for example, the median gross earnings of health professionals were 26.6% higher than those for the secondary teaching group. The equivalent differential with primary and nursery school teachers was higher again at 36.1%. Pharmacists also earned more but the differentials were slightly lower, at 6.9% against earnings for secondary teachers and 15% compared with those of primary school teachers in 2018.

Table 46: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*676.9*	***100.0***	*704.4*	***100.0***	*740.4*	***100.0***
Health professionals	1,008.8	**149.0**	946.5	**134.4**	937.2	**126.6**
Pharmacists	674.6	**99.7**	746.2	**105.9**	791.8	**106.9**

Source: ASHE

Table 47: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*623.5*	***100.0***	*655.1*	***100.0***	*688.5*	***100.0***
Health professionals	1,008.8	**161.8**	946.5	**144.5**	937.2	**136.1**
Pharmacists	674.6	**108.2**	746.2	**113.9**	791.8	**115.0**

Source: ASHE

Indexed differentials of average gross earnings, 2007, 2012 and 2018

Tables 48 and 49 illustrate that the average earnings leads of health professionals and pharmacists over secondary and primary and nursery education teachers were even greater than those shown by median earnings. As before, differentials relating to the pharmacist group were again smaller than those for the health professionals.

Table 48: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*689.7*	***100.0***	*703.0*	***100.0***	*757.2*	***100.0***
Health professionals	1,178.6	**170.9**	1,144.5	**162.8**	1,148.3	**151.7**
Pharmacists	651.4	**94.4**	774.7	**110.2**	825.8	**109.1**

Source: ASHE

Table 49: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*628.6*	***100.0***	*661.9*	***100.0***	*690.6*	***100.0***
Health professionals	1,178.6	**187.5**	1,144.5	**172.9**	1,148.3	**166.3**
Pharmacists	651.4	**103.6**	774.7	**117.0**	825.8	**119.6**

Source: ASHE

d) Business, research, media and public service professionals

Indexed differentials of median gross earnings, 2007, 2012 and 2018

Legal professionals are also a relatively well-paid group with large differentials in every year. For example the median gross earnings of legal professionals in 2018 were 29.4% higher than the secondary education equivalent. The corresponding differential with primary school teachers was 39.2%.

Table 50: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*676.9*	***100.0***	*704.4*	***100.0***	*740.4*	***100.0***
Legal professionals	869.8	**128.5**	838.8	**119.1**	958.2	**129.4**

Source: ASHE

Table 51: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*623.5*	***100.0***	*655.1*	***100.0***	*688.5*	***100.0***
Legal professionals	869.8	**139.5**	838.8	**128.0**	958.2	**139.2**

Source: ASHE

Average gross earnings for legal professionals were even further ahead of those for school teachers in all three years. In 2018, the average gross earnings figure for legal professionals was 56.4% ahead of that for secondary teachers and the differential was 71.5% relative to average earnings for primary school teachers in the same year – both substantial leads.

Indexed differentials of average gross earnings, 2007, 2012 and 2018

Table 52: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*689.7*	***100.0***	*703.0*	***100.0***	*757.2*	***100.0***
Legal professionals	1,020.8	**148.0**	1,040.6	**148.0**	1,184.6	**156.4**

Source: ASHE

Table 53: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*628.6*	***100.0***	*661.9*	***100.0***	*690.6*	***100.0***
Legal professionals	1,020.8	**162.4**	1,040.6	**157.2**	1,184.6	**171.5**

Source: ASHE

As with those working in the legal sector, occupations within the business, research and administrative profession are usually considered to be relatively well-paid and this proved to be true, at least when compared with the two teaching groups. Chartered accountants and management consultants showed median gross earnings that were greater than those of the two teaching groups in all three years.

Median gross earnings of management consultants, for example, started the period in 2007 some 0.7% ahead of those of secondary school teachers. The corresponding figure was 3.7% in 2012 and finished the period at 2.9% higher in 2018. The equivalent differentials for management consultants stood at 12.4%, 8.8% and 5.4% respectively.

Table 54: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*676.9*	***100.0***	*704.4*	***100.0***	*740.4*	***100.0***
Chartered and certified accountants	681.9	**100.7**	730.7	**103.7**	761.7	**102.9**
Management consultants and business analysts	760.9	**112.4**	766.6	**108.8**	780.2	**105.4**

Source: ASHE

Table 55 shows that the pattern was exactly the same when comparisons with primary and nursery education teachers were made although the differentials tended to be greater, reflecting the lower pay levels of teachers responsible for younger children. Chartered accountants finished the period with median gross earnings 10.6% higher than those of primary school teachers while the management consultant lead was 13.3%.

Table 55: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*623.5*	***100.0***	*655.1*	***100.0***	*688.5*	***100.0***
Chartered and certified accountants	681.9	**109.4**	730.7	**111.5**	761.7	**110.6**
Management consultants and business analysts	760.9	**122.0**	766.6	**117.0**	780.2	**113.3**

Source: ASHE

Indexed differentials of average gross earnings, 2007, 2012 and 2018

The average gross earnings differentials are wider for both groups. For example, in 2018 chartered accountants had average gross earnings which were 16.2% greater than the equivalent secondary school teacher figure while the differential with management consultants was lower at 15.2%.

Table 56: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*689.7*	***100.0***	*703.0*	***100.0***	*757.2*	***100.0***
Chartered and certified accountants	743.7	**107.8**	772.9	**109.9**	880.2	**116.2**
Management consultants and business analysts	885.6	**128.4**	856.3	**121.8**	872.5	**115.2**

Source: ASHE

As with the other groups, the differences were wider when compared to primary and nursery school teachers with the average gross earnings of chartered accountants standing at 27.5% ahead and management consultants 26.3% ahead in 2018.

Table 57: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*628.6*	***100.0***	*661.9*	***100.0***	*690.6*	***100.0***
Chartered and certified accountants	743.7	**118.3**	772.9	**116.8**	880.2	**127.5**
Management consultants and business analysts	885.6	**140.9**	856.3	**129.4**	872.5	**126.3**

Source: ASHE

e) Architects, Town Planners and Surveyors

Indexed differentials of median gross earnings, 2007, 2012 and 2018

An analysis of median gross earnings illustrates that the figures for chartered surveyors were slightly lower than those of secondary teachers in all three years – by between 0.5% and 7.5%. In contrast, the figures for chartered surveyors started the period ahead of those of primary school teachers while finishing very marginally behind in both 2012 and 2018.

Table 58: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*676.9*	***100.0***	*704.4*	***100.0***	*740.4*	***100.0***
Chartered surveyors	673.6	**99.5**	653.6	**92.8**	684.5	**92.5**

Source: ASHE

Table 59: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*623.5*	***100.0***	*655.1*	***100.0***	*688.5*	***100.0***
Chartered surveyors	673.6	**108.0**	653.6	**99.8**	684.5	**99.4**

Source: ASHE

Average gross earnings exhibited a different picture with the secondary and surveyor figures almost identical. By contrast, the surveyor figure was 8.9% above the corresponding primary and nursery teacher one.

Looking back, chartered surveyors enjoyed average gross earnings leads over secondary teachers of between 0.6% and 6% in 2007 and 2012. The differentials with primary and nursery education teachers were all in favour of the non-teaching group ranging from 6.8% in 2012 up to 16.4% in 2007.

Indexed differentials of average gross earnings, 2007, 2012 and 2018

Table 60: Comparison with secondary education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Secondary education teaching professionals	*689.7*	***100.0***	*703.0*	***100.0***	*757.2*	***100.0***
Chartered surveyors	731.4	**106.0**	707.1	**100.6**	751.8	**99.3**

Source: ASHE

Table 61: Comparison with primary and nursery education teachers

	2007		2012		2018	
	£pw	**Index**	**£pw**	**Index**	**£pw**	**Index**
Primary and nursery education teaching professionals	*628.6*	***100.0***	*661.9*	***100.0***	*690.6*	***100.0***
Chartered surveyors	731.4	**116.4**	707.1	**106.8**	751.8	**108.9**

Source: ASHE

6. ASHE earnings growth and RPI inflation

In this section of the report we examine the annual percentage change in median and average basic earnings for teachers in England and the comparator graduate occupations tracked against average annual RPI and CPI inflation for each of the years from 2007 to 2018.

It is important to note that the movements are not actual salary rises received. Instead they represent changes in the median and average earnings for unmatched samples across the various years. Therefore, if a particular sample for a specific profession changes, the median and average could represent results for slightly different groups across two years.

For example, figures for some of the professions with relatively small indicative sample sizes, such as those from the science professions, may be more prone to large variations. In fact, many of the graphs do demonstrate large fluctuations, including negative movements in certain years. This does not mean that employees were necessarily subject to salary decreases. More likely it is a result of the sample compositions changing.

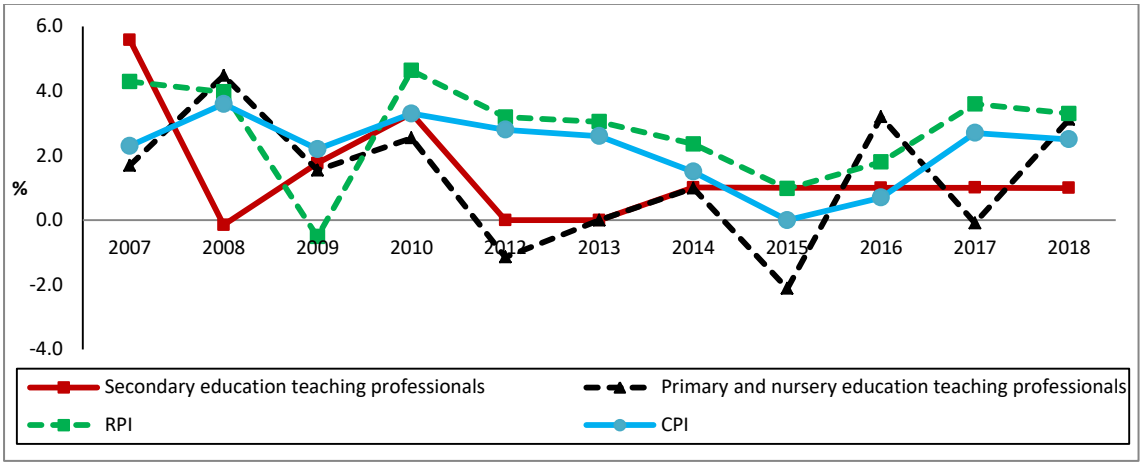
For example, recruitment of more junior and therefore lower-paid employees into a particular occupation may cause both the average and median salaries to fall when compared to the previous year. In addition, because of the changes in job definitions affecting 2010/11, no data is available from ASHE in that year.

6.1. Teachers' pay changes

As can be seen from Graphs 26 and 27, throughout the whole period, growth in median and average basic earnings for both secondary and primary teachers in England tended to trail behind both CPI and RPI. One notable exception was 2009, when the RPI dropped below zero as a result of recession, but on the whole the value of median and average basic earnings have been eroded in real terms.

Details for graphs relating to all of the non-teaching professions relative to the two teaching groups and RPI follow.

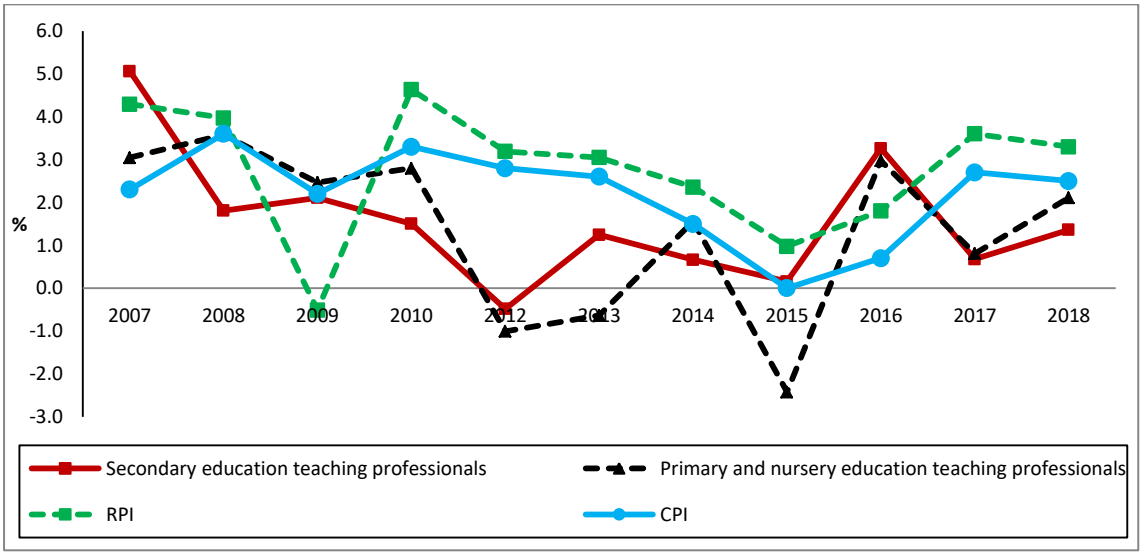
Graph 26: Percentage change in median basic earnings for teachers in England against RPI 2007 to 2018



Source: IDR/ASHE

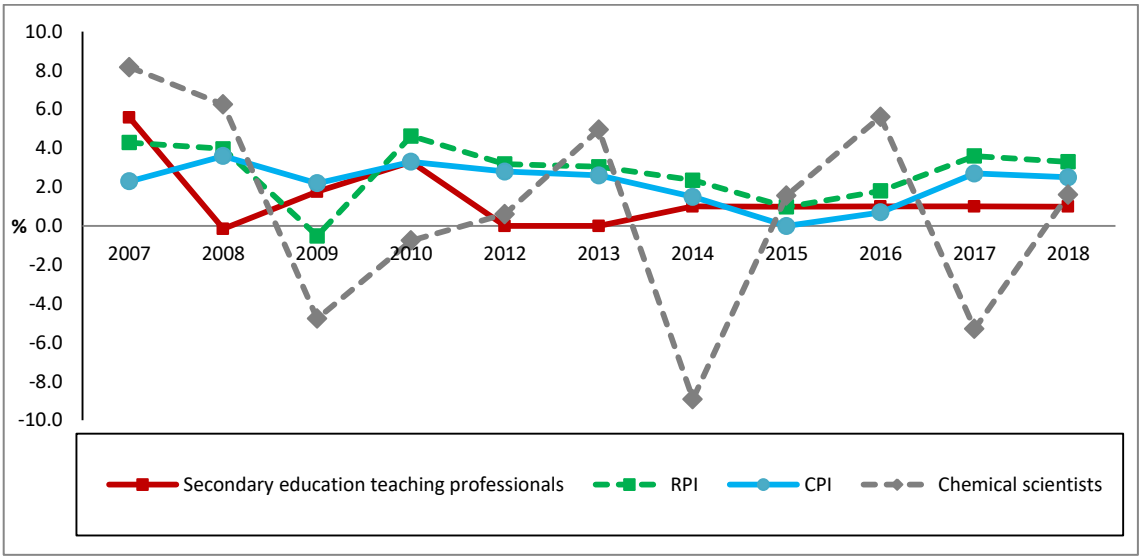
Graph 27 illustrates that a similar trend can be observed for teachers' average basic earnings in England although in this case both the secondary and primary teacher figures were higher than the corresponding CPI and RPI figures in 2016.

Graph 27: Percentage change in average basic earnings for teachers in England against RPI 2007 to 2018



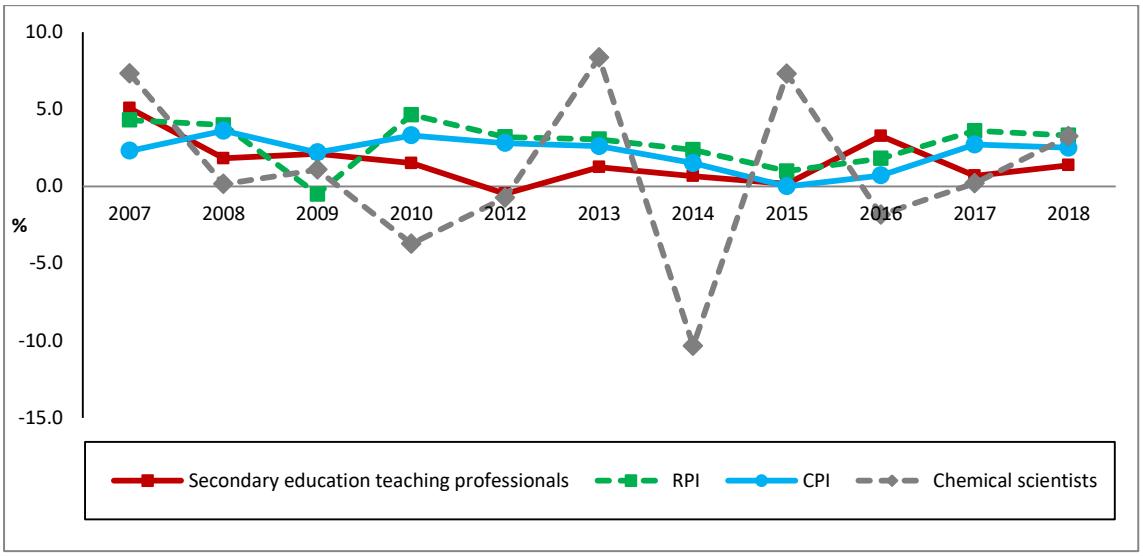
Source: IDR/ASHE

Graph 28: Percentage change in median basic earnings for chemical scientists and secondary school teachers in England against RPI 2007 to 2018



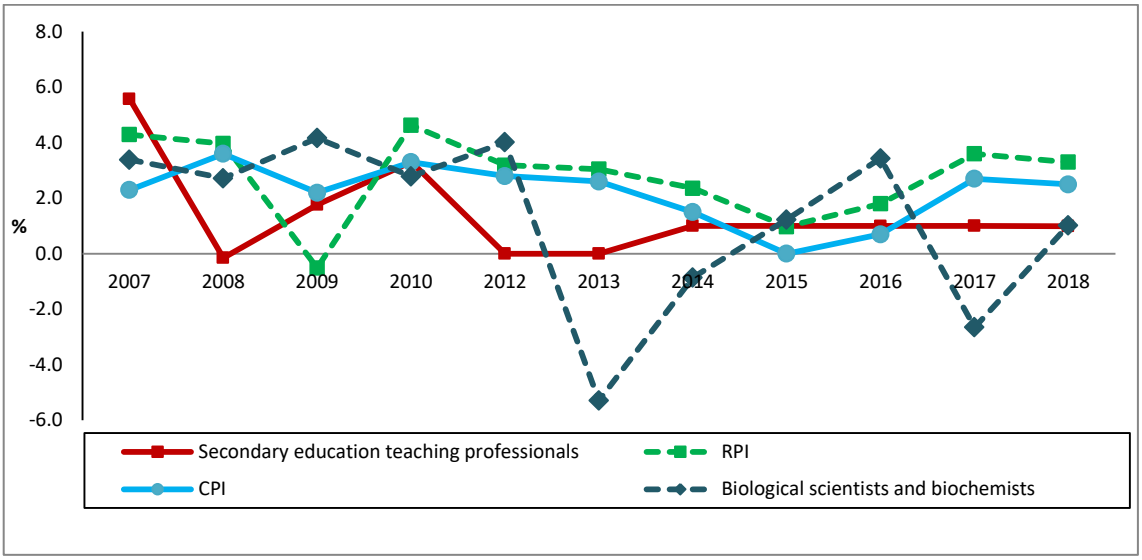
Source: IDR/ASHE

Graph 29: Percentage change in average basic earnings for chemical scientists and secondary school teachers in England against RPI 2007 to 2018



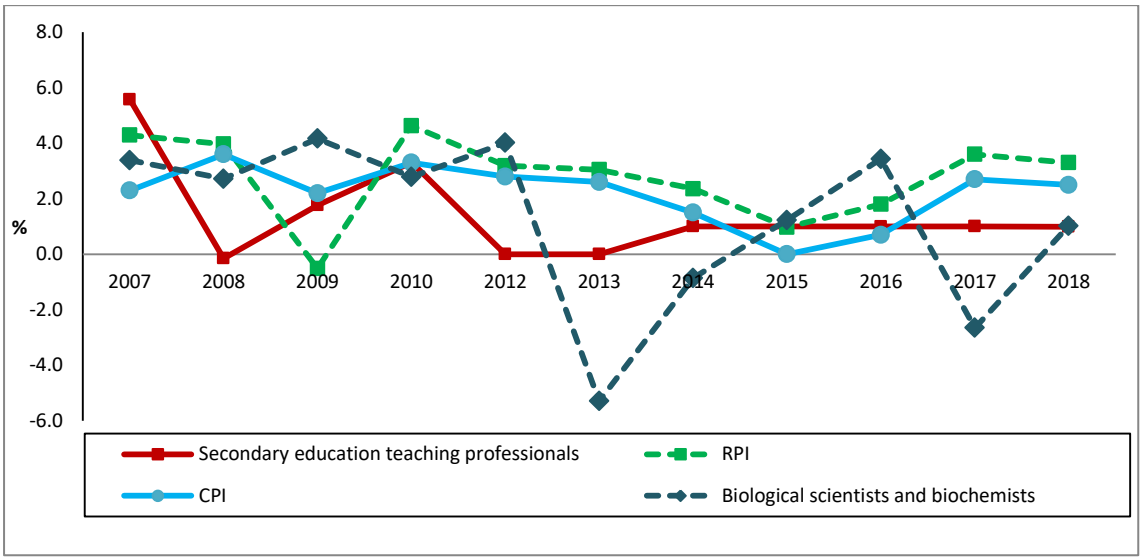
Source: IDR/ASHE

Graph 30: Percentage change in median basic earnings for biological scientists and biochemists and secondary school teachers in England against RPI 2007 to 2018



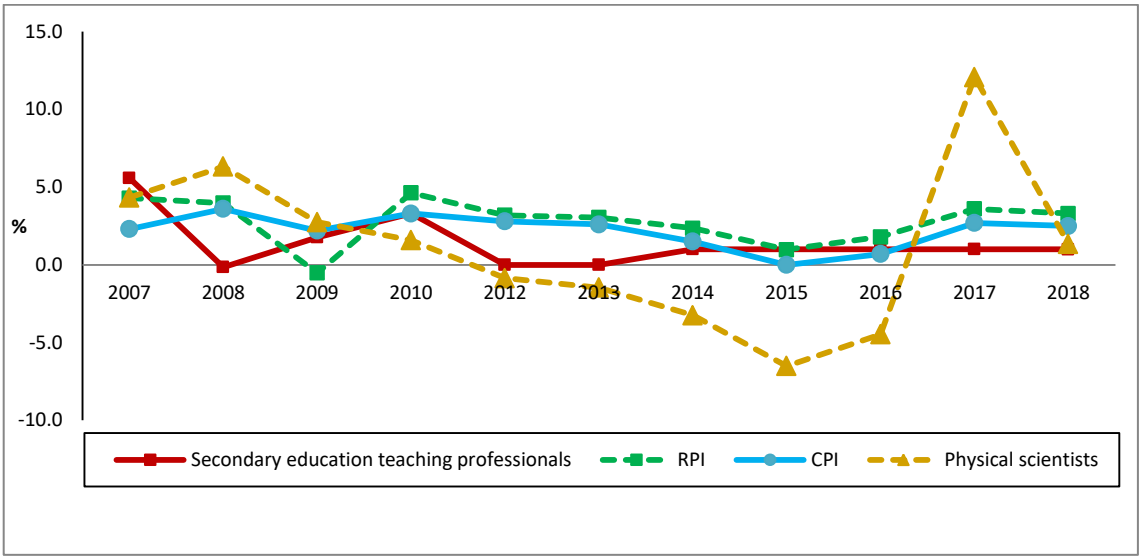
Source: IDR/ASHE

Graph 31: Percentage change in average basic earnings for biological scientists and secondary school teachers in England against RPI 2007 to 2018



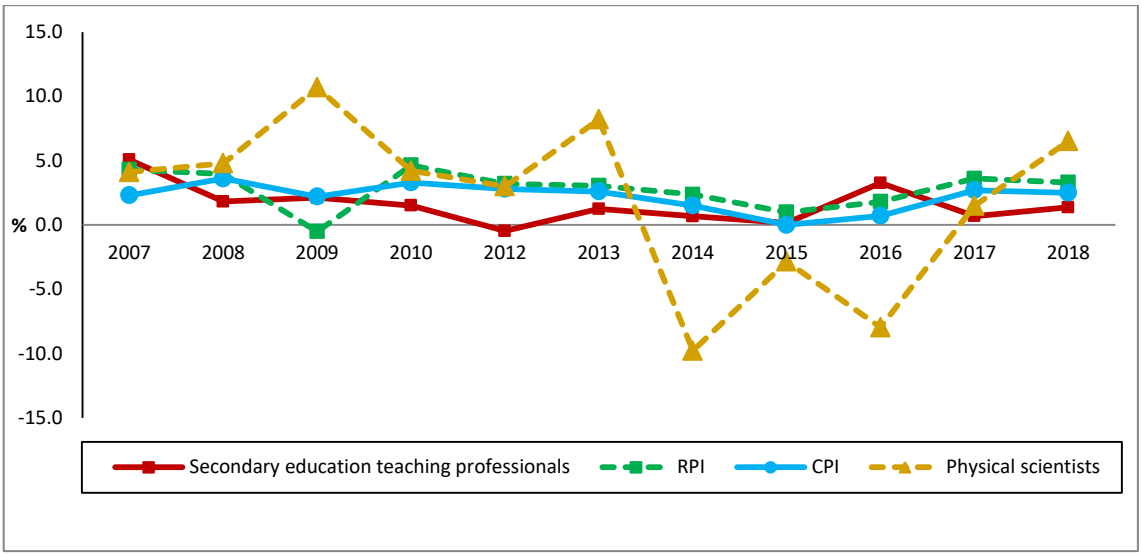
Source: IDR/ASHE

Graph 32: Percentage change in median in earnings for physical scientists and secondary school teachers in England against RPI 2007 to 2018



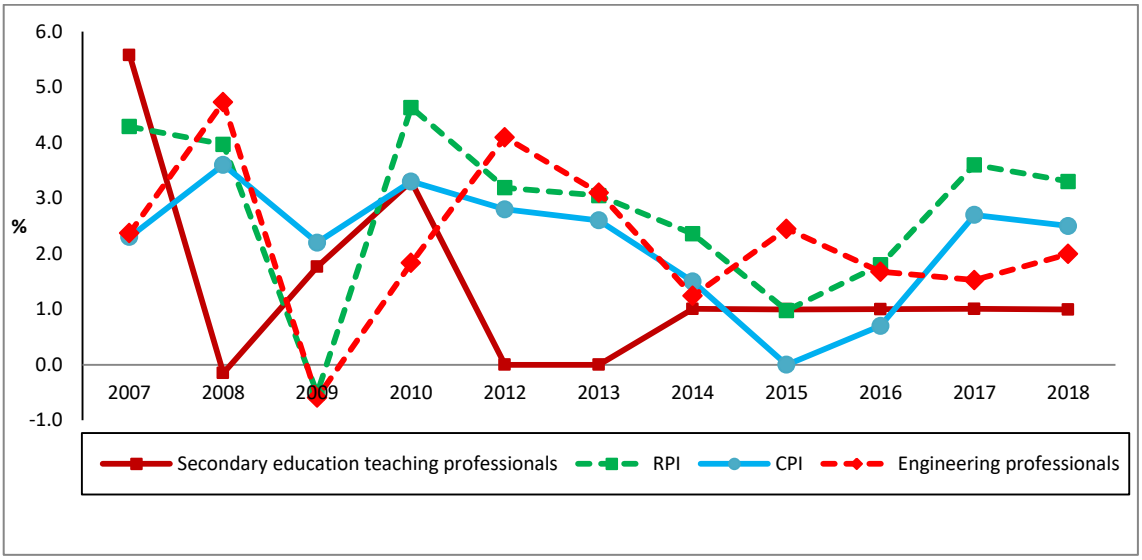
Source: IDR/ASHE

Graph 33: Percentage change in average basic earnings for physical scientists and secondary school teachers in England against RPI 2007 to 2018



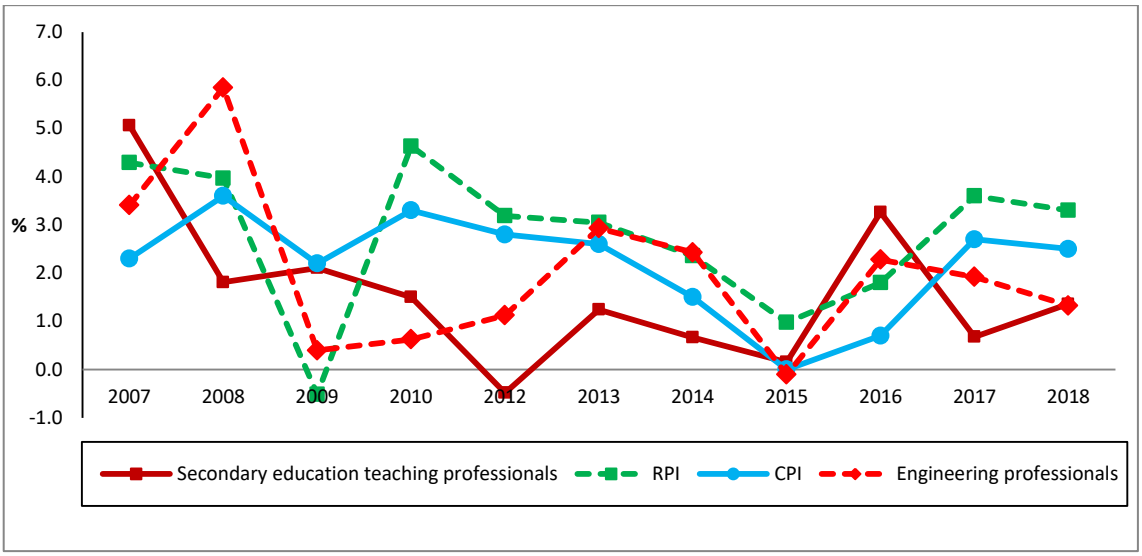
Source: IDR/ASHE

Graph 34: Percentage change in median basic earnings for engineering professional and secondary school teachers in England against RPI 2007 to 2018



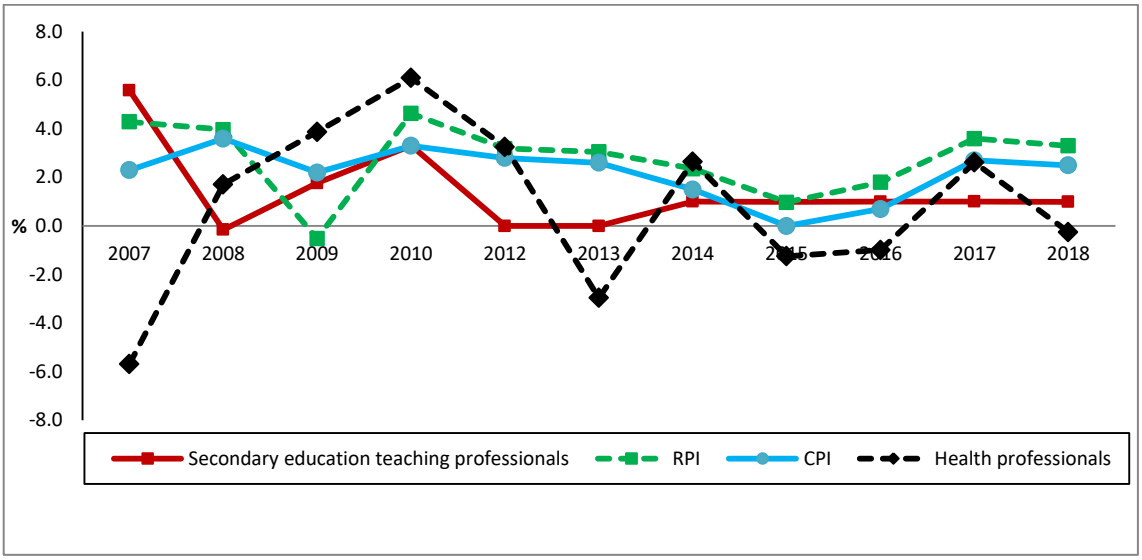
Source: IDR/ASHE

Graph 35: Percentage change in average basic earnings for engineering professional and secondary school teachers in England against RPI 2007 to 2018



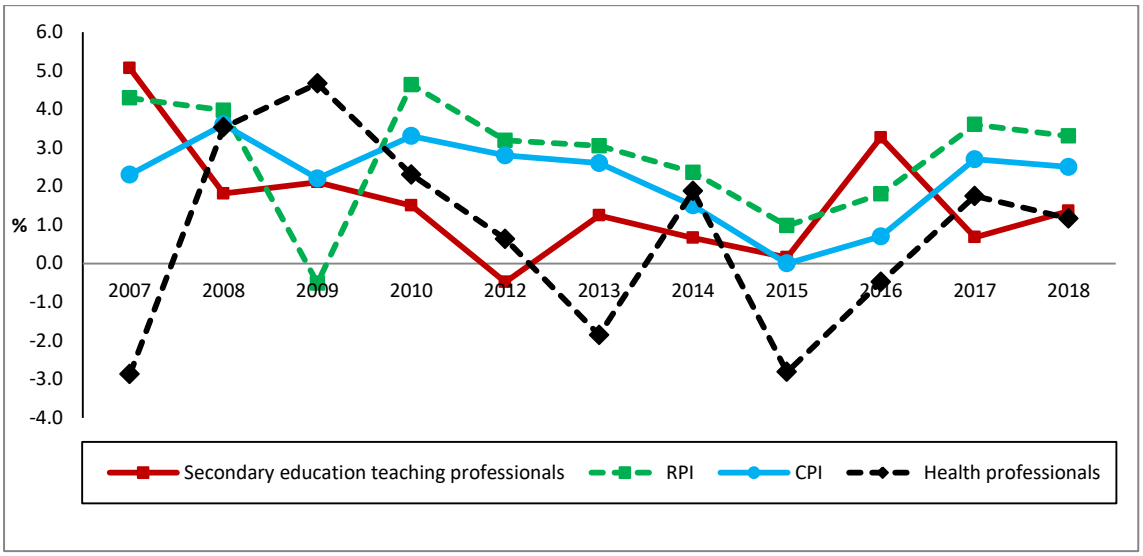
Source: IDR/ASHE

Graph 36: Percentage change in median basic earnings for health professionals and secondary school teachers in England against RPI 2007 to 2018



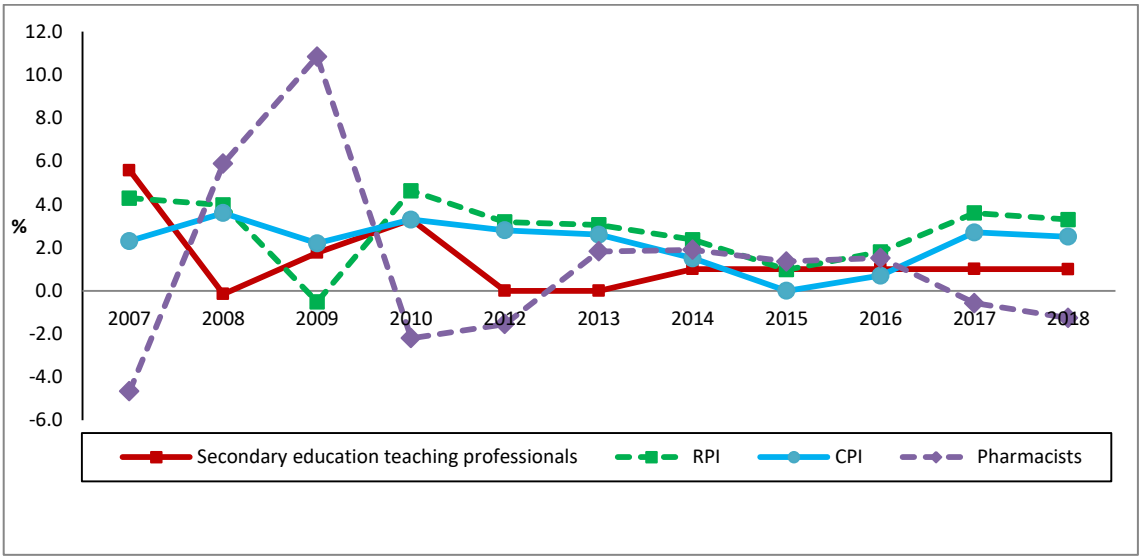
Source: IDR/ASHE

Graph 37: Percentage change in average basic earnings for health professionals and secondary school teachers in England against RPI 2007 to 2018



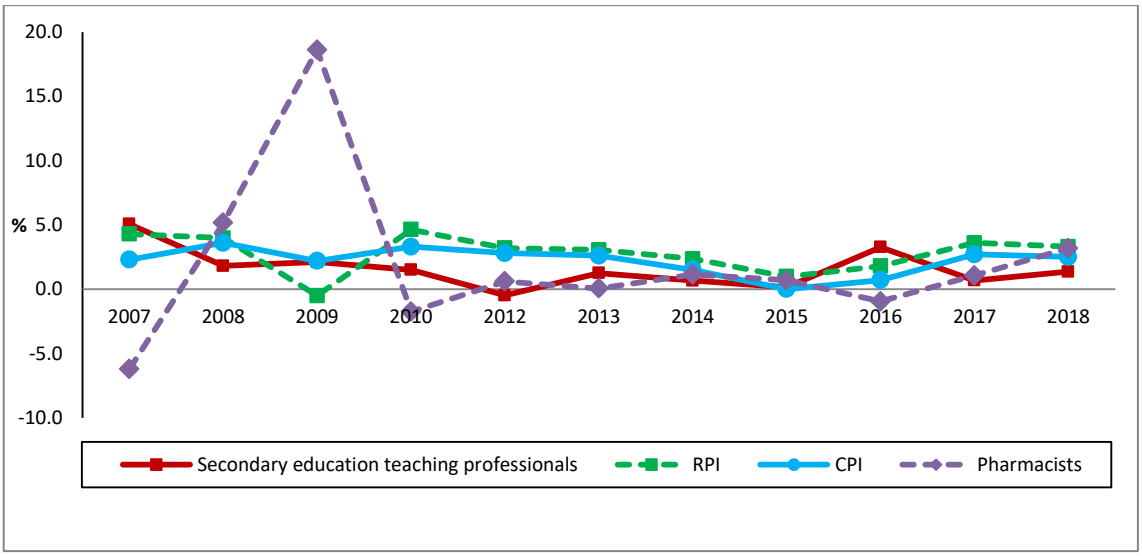
Source: IDR/ASHE

Graph 38: Percentage change in median basic earnings for pharmacists and secondary school teachers in England against RPI 2007 to 2018



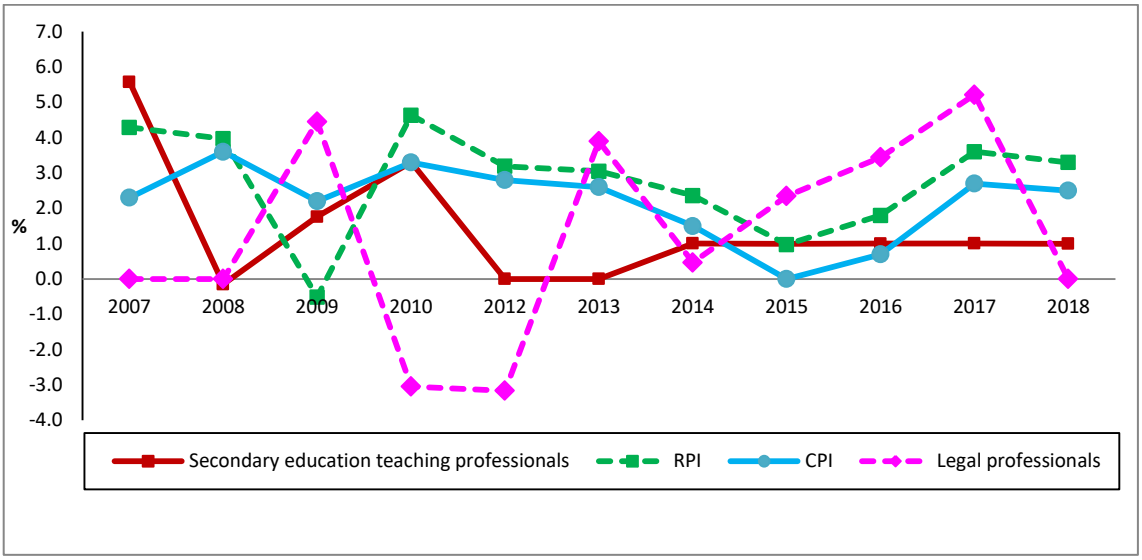
Source: IDR/ASHE

Graph 39: Percentage change in average basic earnings for pharmacists and secondary school teachers in England against RPI 2007 to 2018



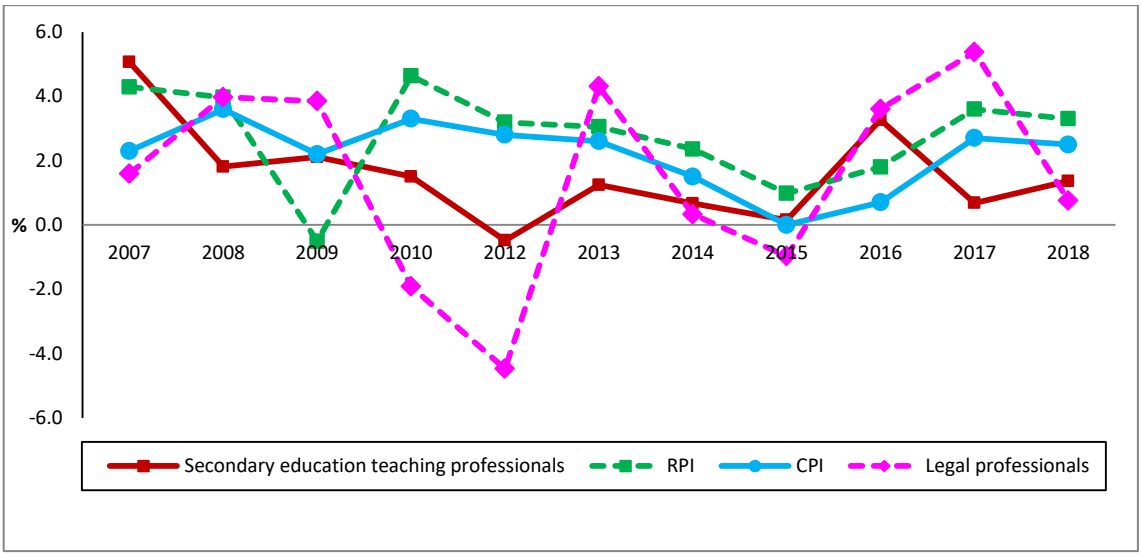
Source: IDR/ASHE

Graph 40: Percentage change in median basic earnings for legal professionals and teachers in England against RPI 2007 to 2018



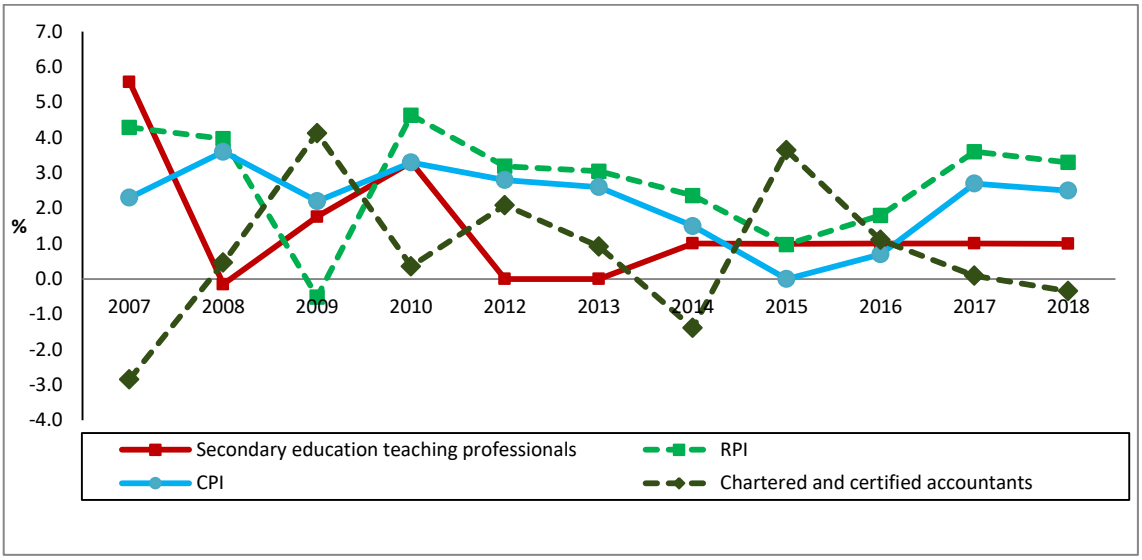
Source: IDR/ASHE

Graph 41: Percentage change in average basic earnings for legal professionals and teachers in England against RPI 2007 to 2018



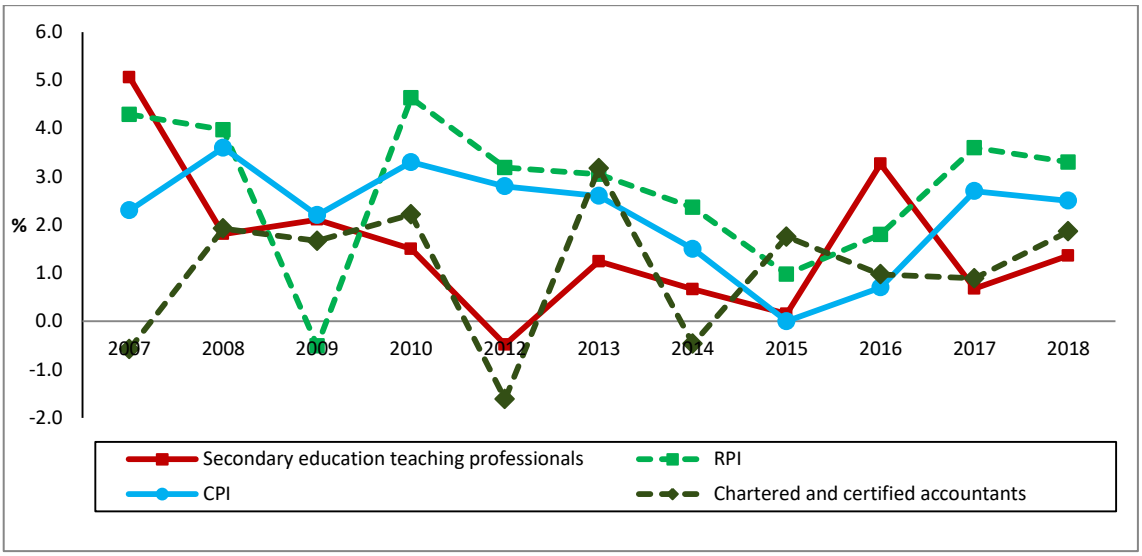
Source: IDR/ASHE

Graph 42: Percentage change in median basic earnings for chartered and certified accountants and teachers in England against RPI 2007 to 2018



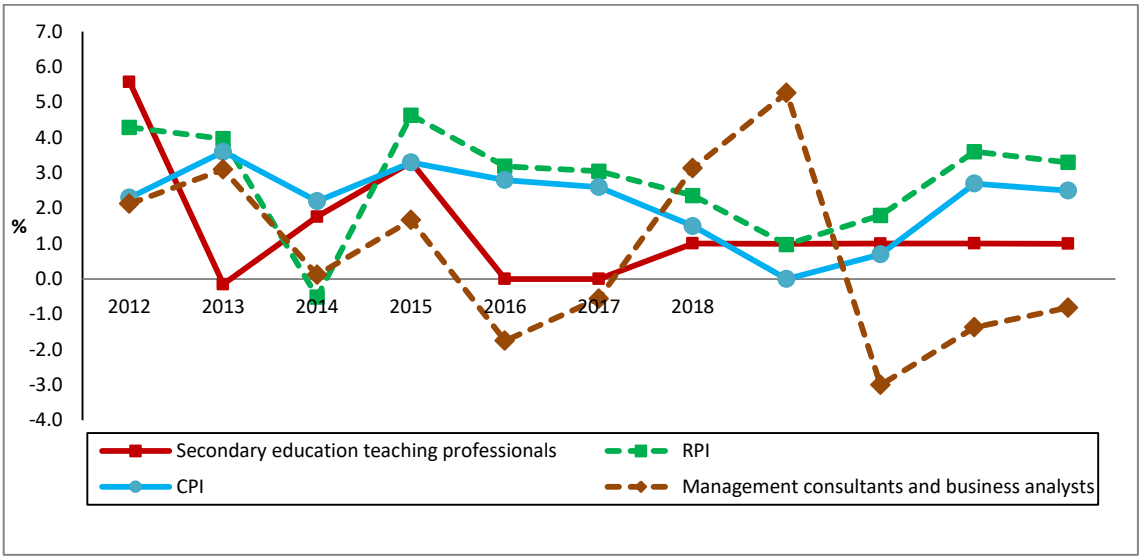
Source: IDR/ASHE

Graph 43: Percentage change in average basic earnings for chartered and certified accountants and teachers in England against RPI 2007 to 2018



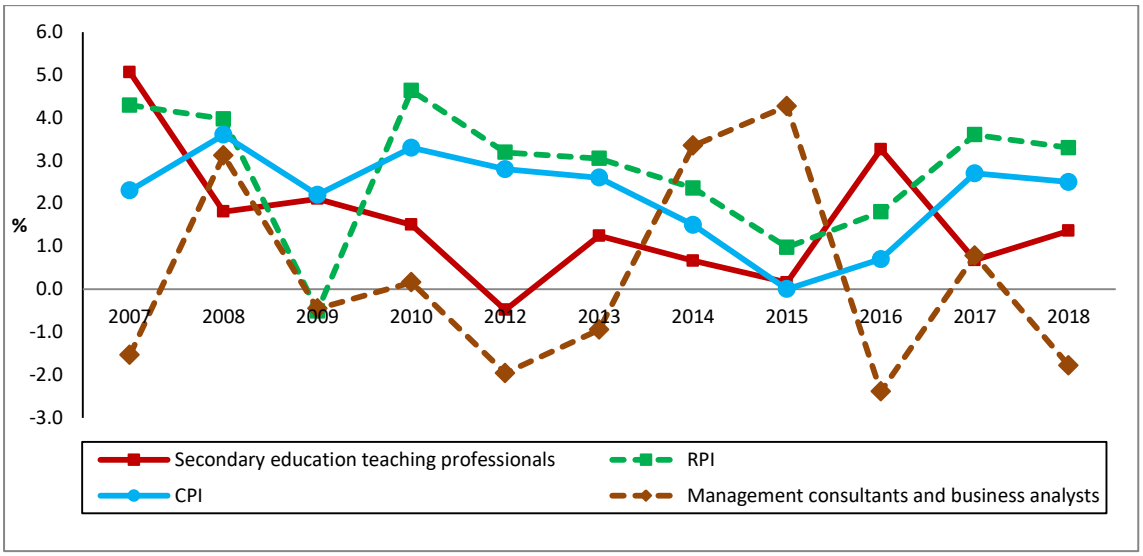
Source: IDR/ASHE

Graph 44: Percentage change in median basic earnings for management consultants and business analysts and teachers in England against RPI 2007 to 2018



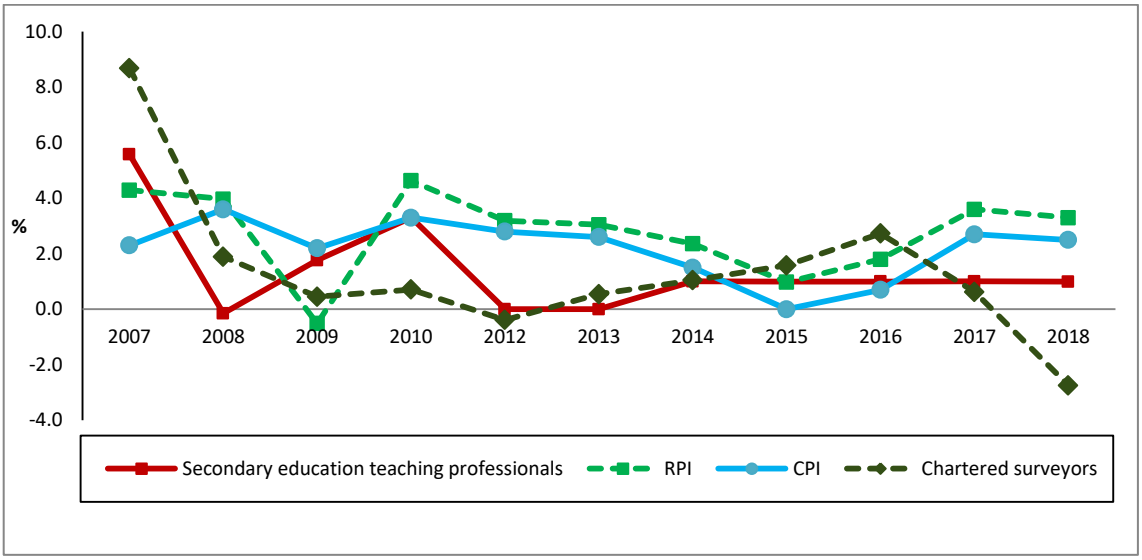
Source: IDR/ASHE

Graph 45: Percentage change in average basic earnings for management consultants and business analysts and teachers in England against RPI 2007 to 2018



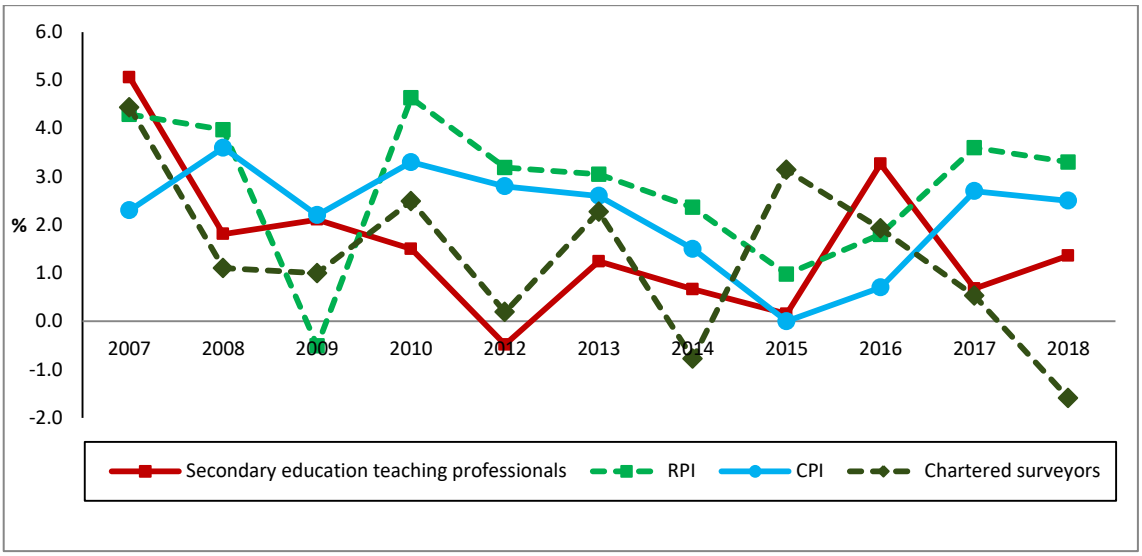
Source: IDR/ASHE

Graph 46: Percentage change in median basic earnings for chartered surveyors and teachers in England against RPI 2007 to 2018



Source: IDR/ASHE

Graph 47: Percentage change in average basic earnings for chartered surveyors and teachers in England against RPI 2007 to 2018

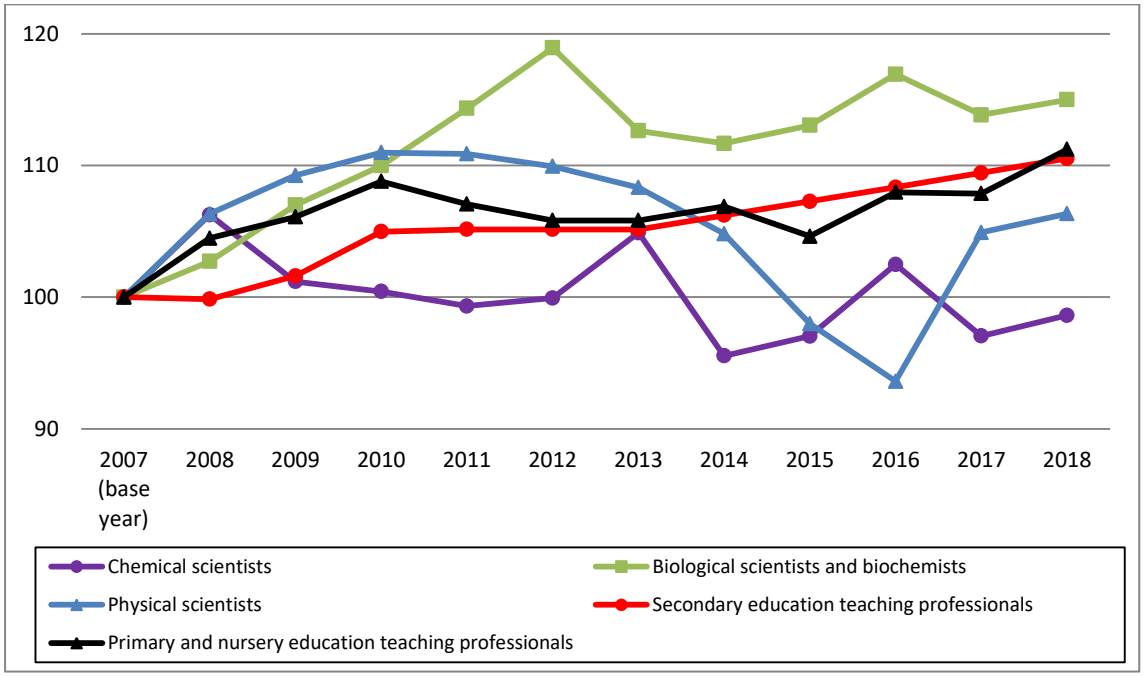


Source: IDR/ASHE

Appendix 1: Indexed median basic weekly earnings 2007-2018

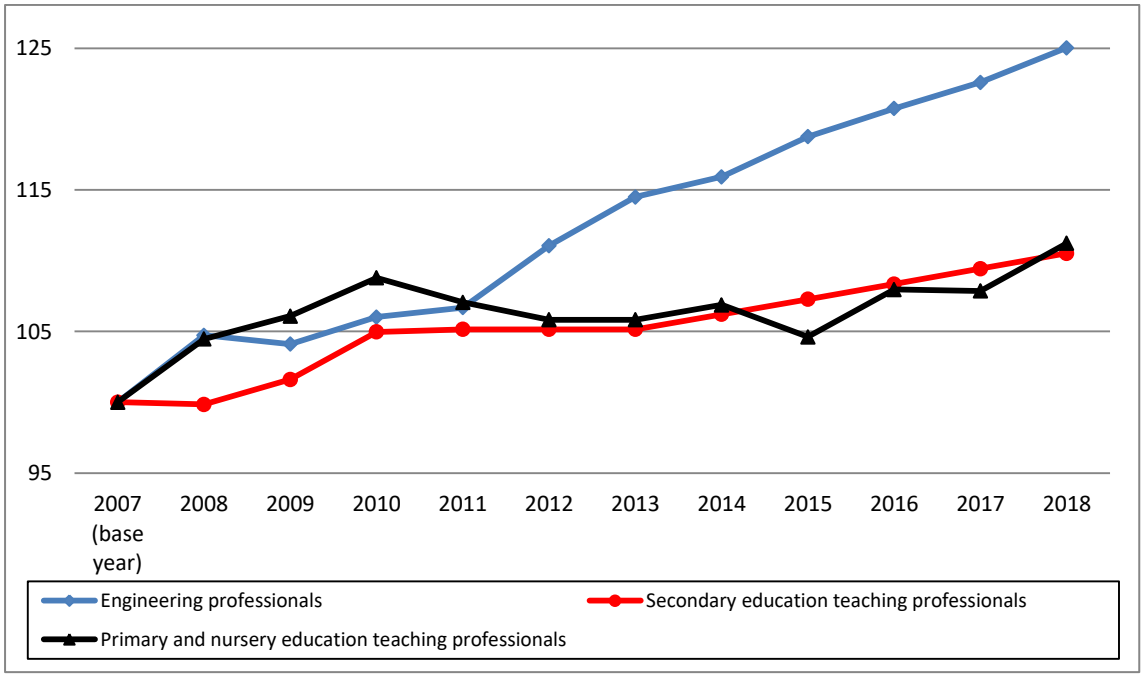
A Science, Research, Engineering and Technology professionals

Occupational groups	Chemical scientists	Biological scientists and biochemists	Physical scientists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0	100.0
2008	106.3	102.7	106.3	99.9	104.5
2009	101.2	107.0	109.2	101.6	106.1
2010	100.4	110.0	111.0	105.0	108.8
2011	99.3	114.3	110.9	105.2	107.1
2012	99.9	118.9	109.9	105.2	105.8
2013	104.9	112.6	108.3	105.2	105.8
2014	95.5	111.7	104.8	106.2	106.9
2015	97.0	113.0	98.0	107.3	104.6
2016	102.5	116.9	93.6	108.3	108.0
2017	97.1	113.8	104.9	109.4	107.9
2018	98.6	115.0	106.3	110.5	111.2



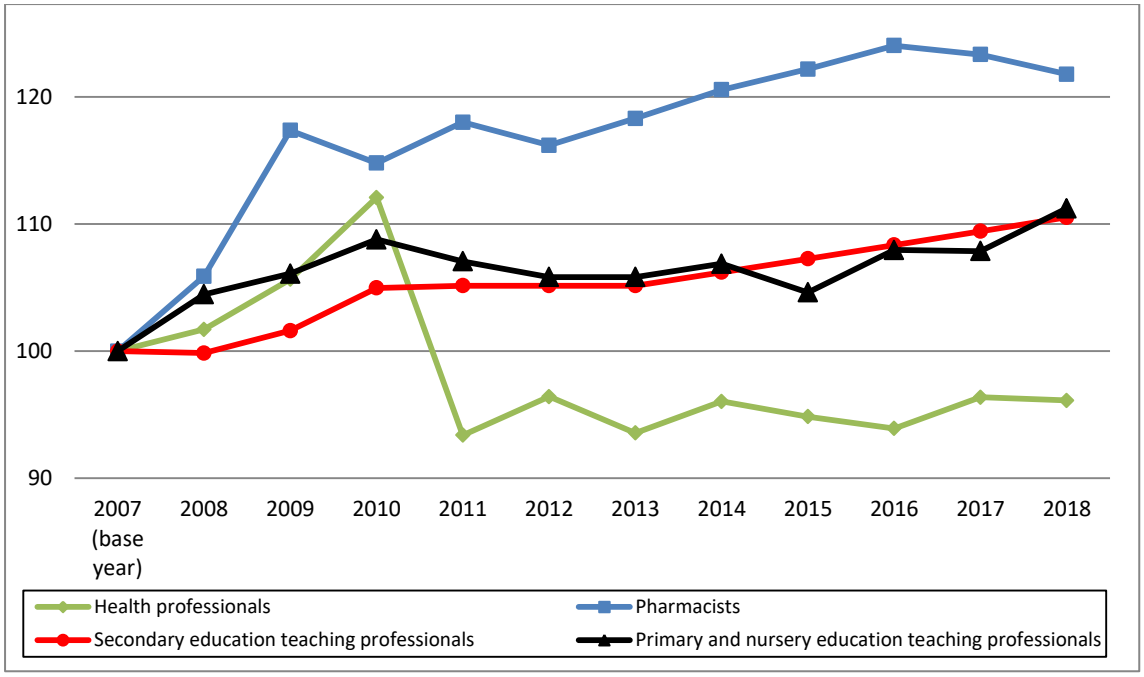
B Engineering professionals

Occupational groups	Engineering professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	104.7	99.9	104.5
2009	104.1	101.6	106.1
2010	106.0	105.0	108.8
2011	106.7	105.2	107.1
2012	111.1	105.2	105.8
2013	114.5	105.2	105.8
2014	115.9	106.2	106.9
2015	118.8	107.3	104.6
2016	120.7	108.3	108.0
2017	122.6	109.4	107.9
2018	125.0	110.5	111.2



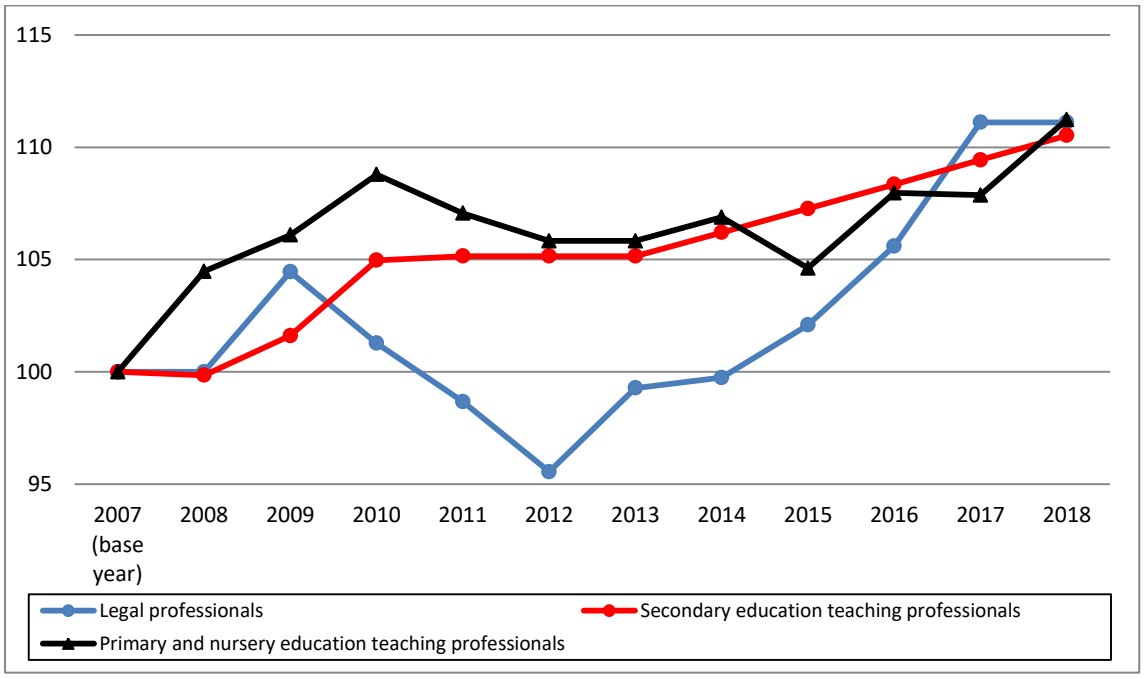
C Health professionals

Occupational groups	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0
2008	101.7	105.9	99.9	104.5
2009	105.7	117.4	101.6	106.1
2010	112.1	114.8	105.0	108.8
2011	93.4	118.0	105.2	107.1
2012	96.4	116.2	105.2	105.8
2013	93.6	118.3	105.2	105.8
2014	96.1	120.6	106.2	106.9
2015	94.9	122.2	107.3	104.6
2016	93.9	124.0	108.3	108.0
2017	96.4	123.3	109.4	107.9
2018	96.1	121.8	110.5	111.2


120
110
100
90
2007 (base year)
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Health professionals
Pharmacists
Secondary education teaching professionals
Primary and nursery education teaching professionals

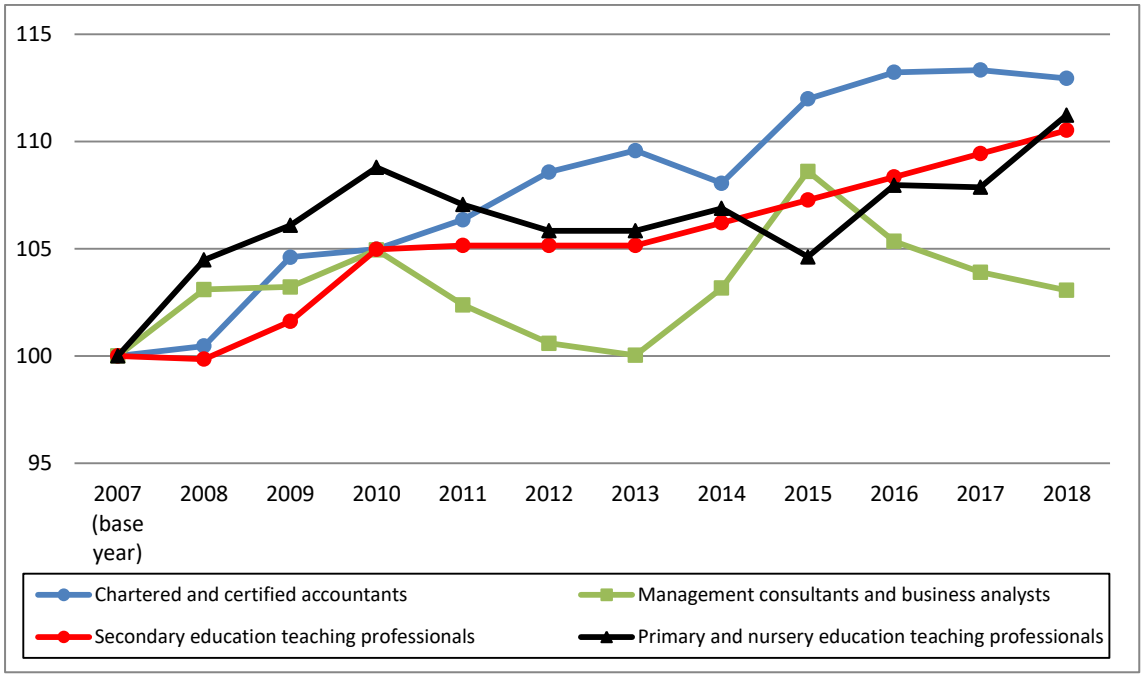
D Legal professionals

Occupational groups	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	100.0	99.9	104.5
2009	104.5	101.6	106.1
2010	101.3	105.0	108.8
2011	98.7	105.2	107.1
2012	95.6	105.2	105.8
2013	99.3	105.2	105.8
2014	99.7	106.2	106.9
2015	102.1	107.3	104.6
2016	105.6	108.3	108.0
2017	111.1	109.4	107.9
2018	111.1	110.5	111.2



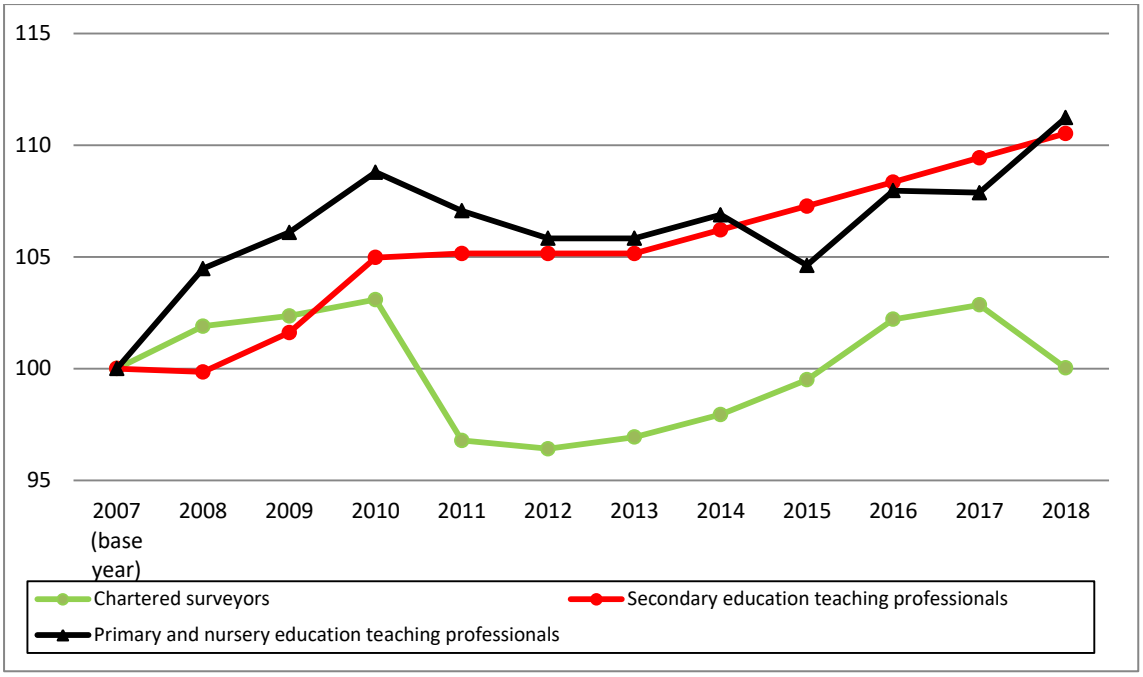
E Business, Research and Administrative Professionals

Occupational groups	Chartered and certified accountants	Management consultants and business analysts	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0
2008	100.5	103.1	99.9	104.5
2009	104.6	103.2	101.6	106.1
2010	105.0	104.9	105.0	108.8
2011	106.4	102.4	105.2	107.1
2012	108.6	100.6	105.2	105.8
2013	109.6	100.0	105.2	105.8
2014	108.1	103.2	106.2	106.9
2015	112.0	108.6	107.3	104.6
2016	113.2	105.3	108.3	108.0
2017	113.3	103.9	109.4	107.9
2018	112.9	103.1	110.5	111.2



F Chartered surveyors

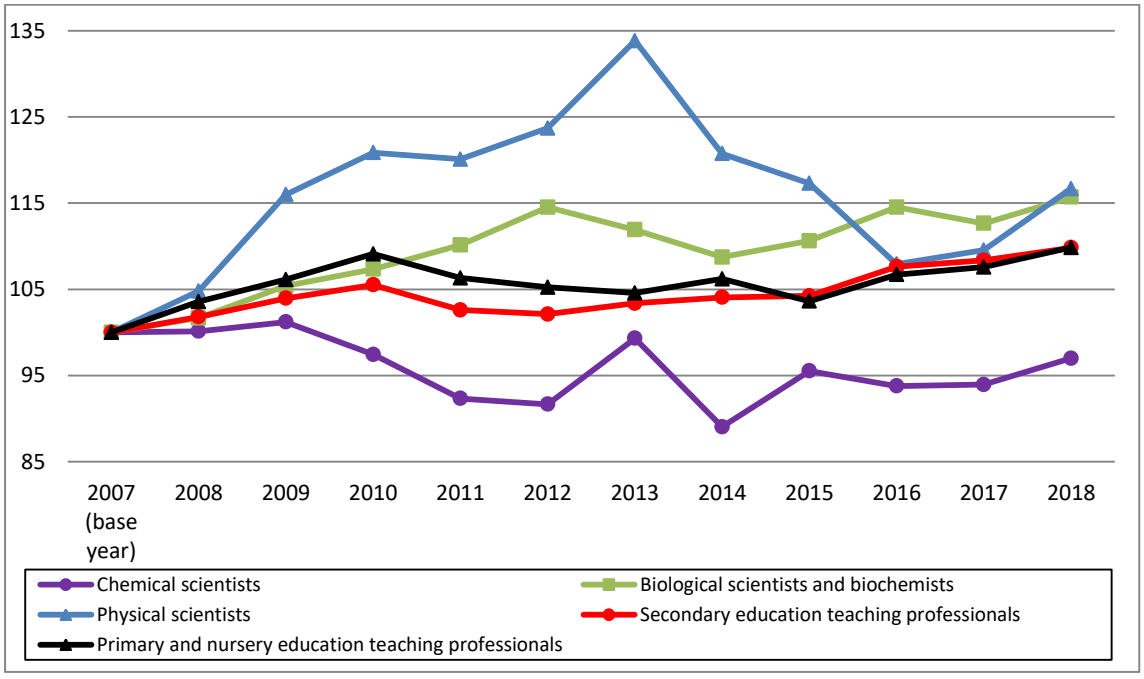
Occupational groups	Chartered surveyors	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	101.9	99.9	104.5
2009	102.4	101.6	106.1
2010	103.1	105.0	108.8
2011	96.8	105.2	107.1
2012	96.4	105.2	105.8
2013	96.9	105.2	105.8
2014	97.9	106.2	106.9
2015	99.5	107.3	104.6
2016	102.2	108.3	108.0
2017	102.8	109.4	107.9
2018	100.0	110.5	111.2


115
110
105
100
95
2007 (base year)
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Chartered surveyors
Secondary education teaching professionals
Primary and nursery education teaching professionals

Appendix 2: Indexed average basic weekly earnings 2007 to 2018

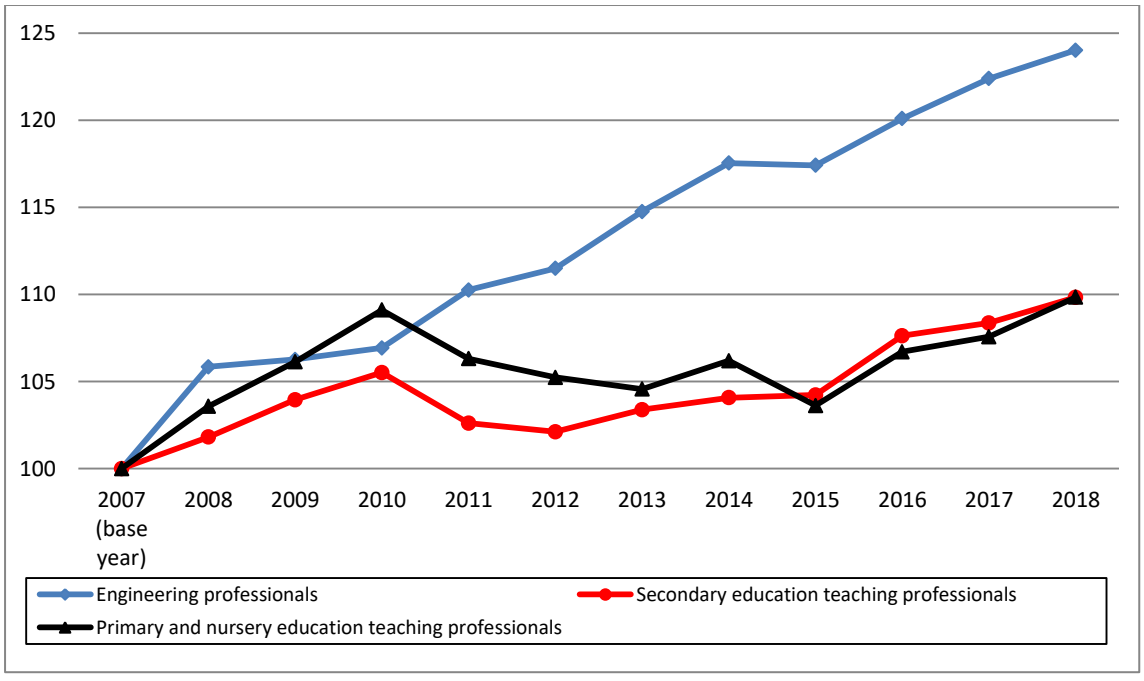
A Science, Research, Engineering and Technology professionals

Occupational groups	Chemical scientists	Biological scientists and biochemists	Physical scientists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0	100.0
2008	100.1	101.7	104.8	101.8	103.6
2009	101.2	105.4	116.0	104.0	106.1
2010	97.4	107.3	120.9	105.5	109.1
2011	92.3	110.1	120.1	102.6	106.3
2012	91.7	114.5	123.7	102.1	105.2
2013	99.3	111.9	133.8	103.4	104.6
2014	89.0	108.7	120.7	104.1	106.2
2015	95.5	110.6	117.3	104.2	103.6
2016	93.8	114.5	107.9	107.6	106.7
2017	94.0	112.6	109.5	108.4	107.6
2018	97.0	115.7	116.7	109.8	109.8



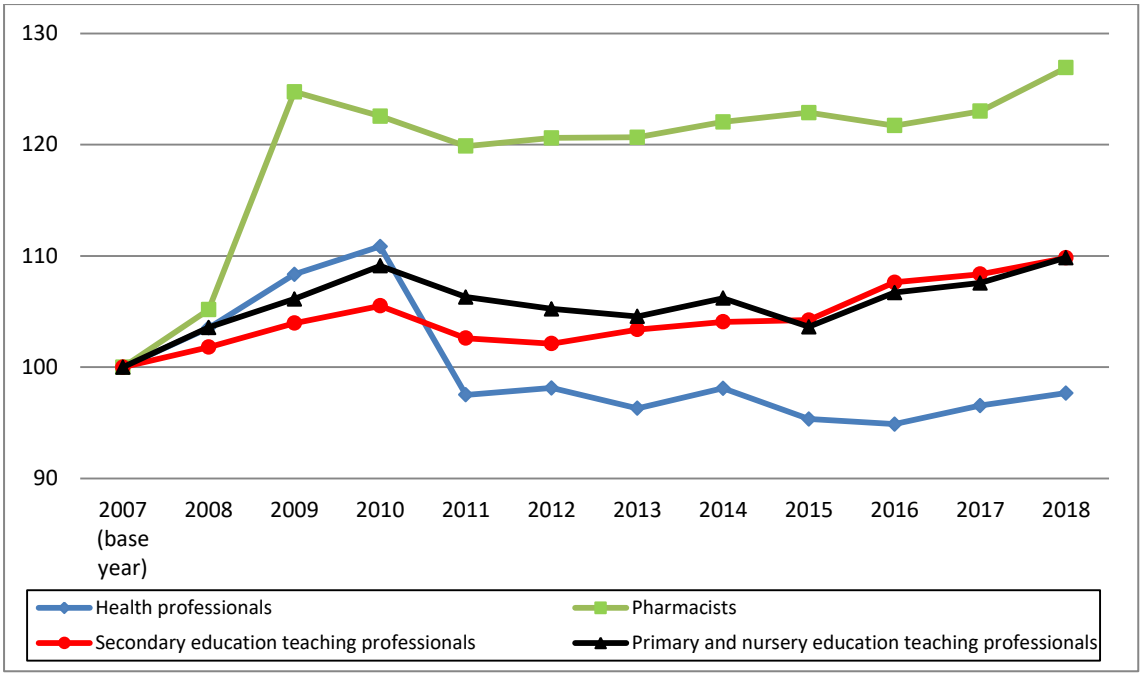
B Engineering professionals

Occupational groups	Engineering professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	105.8	101.8	103.6
2009	106.3	104.0	106.1
2010	106.9	105.5	109.1
2011	110.3	102.6	106.3
2012	111.5	102.1	105.2
2013	114.8	103.4	104.6
2014	117.5	104.1	106.2
2015	117.4	104.2	103.6
2016	120.1	107.6	106.7
2017	122.4	108.4	107.6
2018	124.0	109.8	109.8



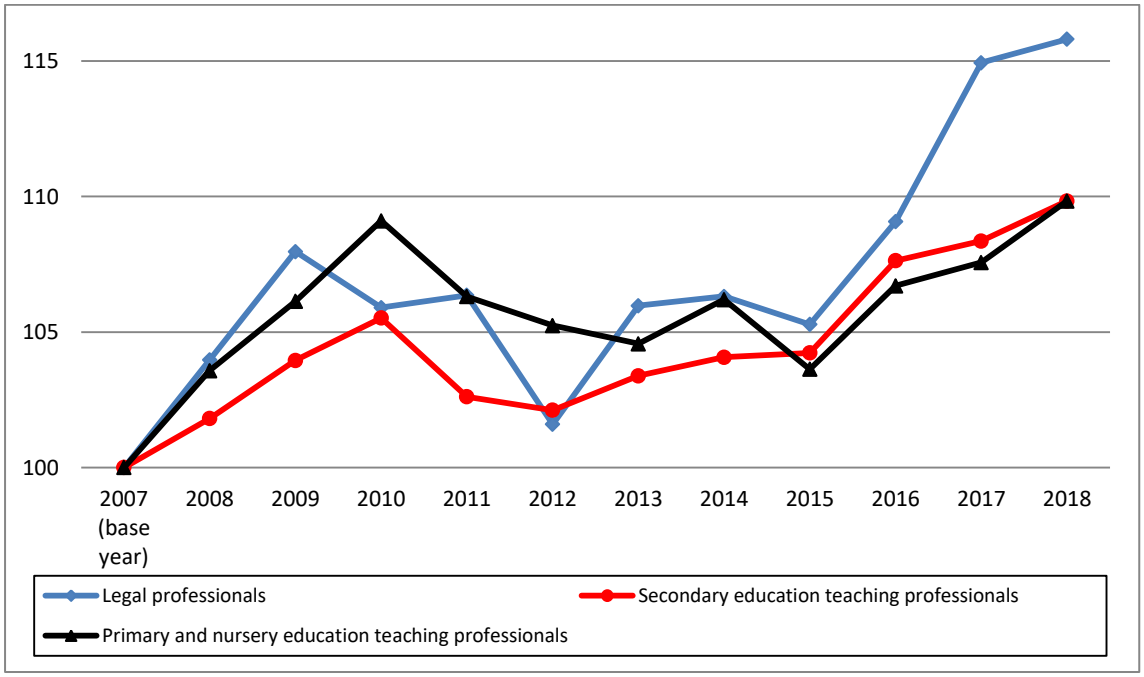
C Health professionals

Occupational groups	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0
2008	103.5	105.2	101.8	103.6
2009	108.4	124.7	104.0	106.1
2010	110.8	122.6	105.5	109.1
2011	97.5	119.9	102.6	106.3
2012	98.1	120.6	102.1	105.2
2013	96.3	120.7	103.4	104.6
2014	98.1	122.0	104.1	106.2
2015	95.3	122.9	104.2	103.6
2016	94.9	121.7	107.6	106.7
2017	96.5	123.0	108.4	107.6
2018	97.7	126.9	109.8	109.8


130
120
110
100
90
2007 (base year)
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Health professionals
Pharmacists
Secondary education teaching professionals
Primary and nursery education teaching professionals

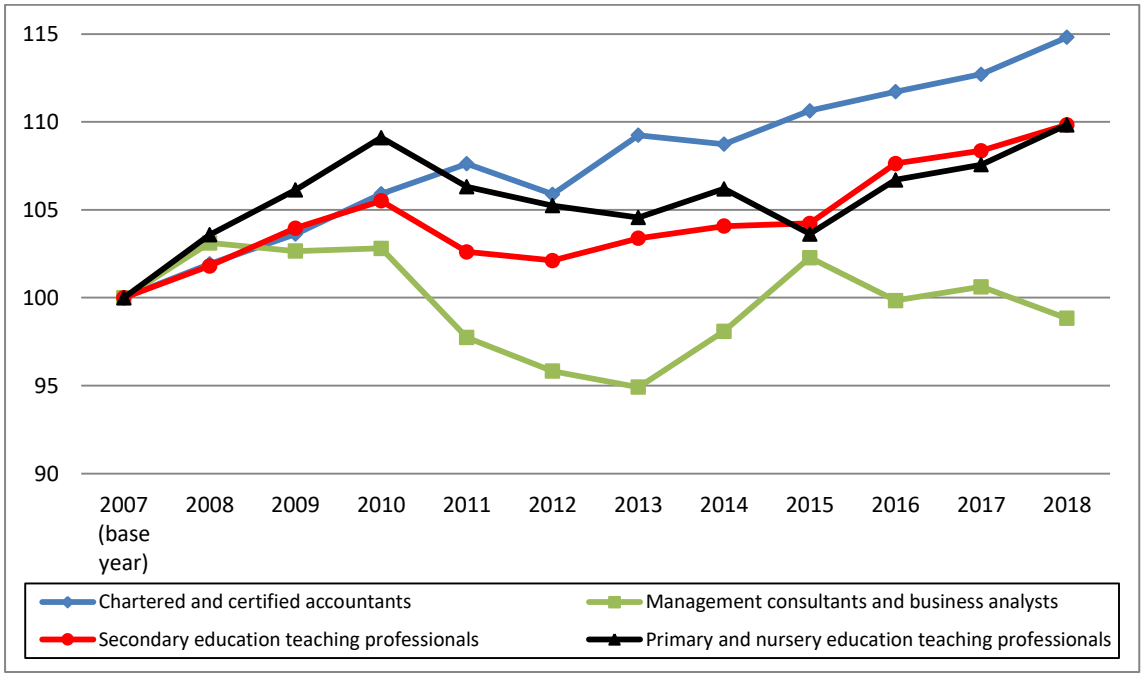
D Legal professionals

Occupational groups	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	104.0	101.8	103.6
2009	108.0	104.0	106.1
2010	105.9	105.5	109.1
2011	106.4	102.6	106.3
2012	101.6	102.1	105.2
2013	106.0	103.4	104.6
2014	106.3	104.1	106.2
2015	105.3	104.2	103.6
2016	109.1	107.6	106.7
2017	114.9	108.4	107.6
2018	115.8	109.8	109.8



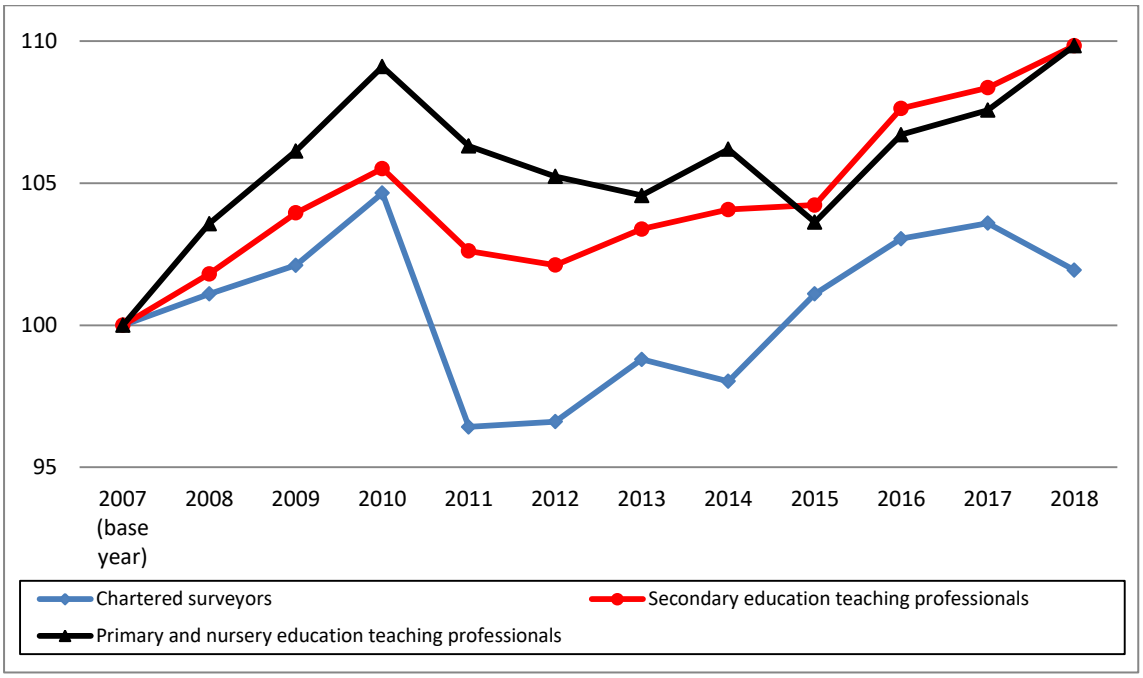
E Business, Research and Administrative professionals

Occupational groups	Chartered and certified accountants	Management consultants and business analysts	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0
2008	101.9	103.1	101.8	103.6
2009	103.6	102.7	104.0	106.1
2010	105.9	102.8	105.5	109.1
2011	107.6	97.7	102.6	106.3
2012	105.9	95.8	102.1	105.2
2013	109.2	94.9	103.4	104.6
2014	108.7	98.1	104.1	106.2
2015	110.6	102.3	104.2	103.6
2016	111.7	99.8	107.6	106.7
2017	112.7	100.6	108.4	107.6
2018	114.8	98.8	109.8	109.8



F Chartered Surveyors

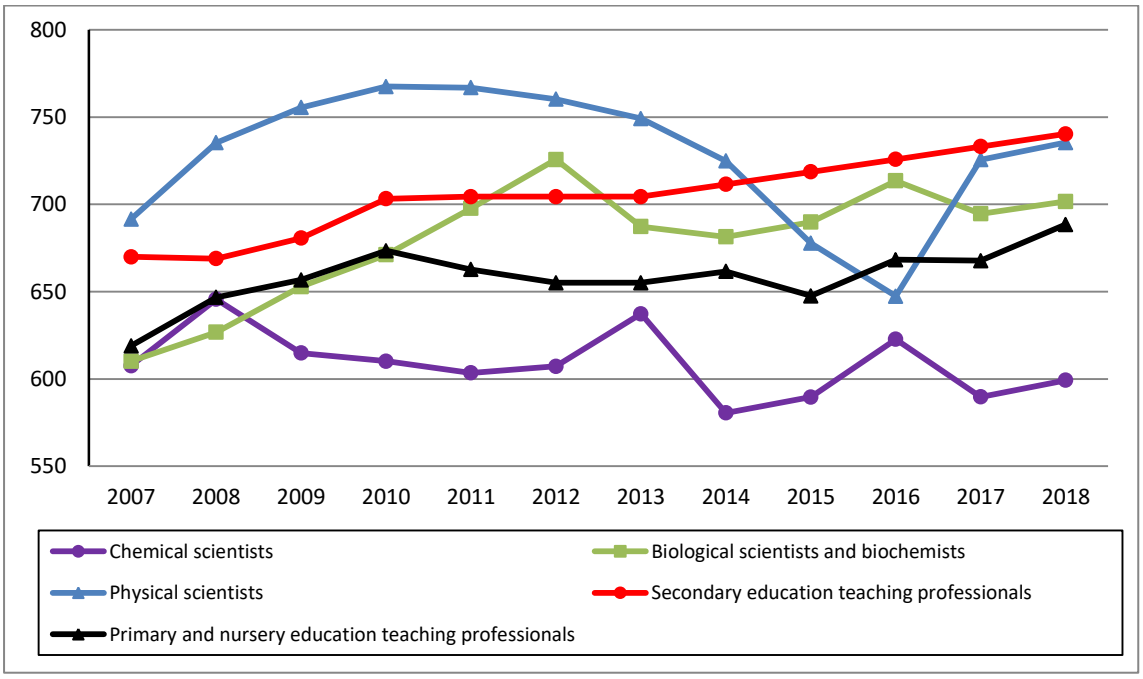
Occupational groups	Chartered surveyors	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	101.1	101.8	103.6
2009	102.1	104.0	106.1
2010	104.7	105.5	109.1
2011	96.4	102.6	106.3
2012	96.6	102.1	105.2
2013	98.8	103.4	104.6
2014	98.0	104.1	106.2
2015	101.1	104.2	103.6
2016	103.0	107.6	106.7
2017	103.6	108.4	107.6
2018	101.9	109.8	109.8



Appendix 3: Median basic weekly earnings (ASHE)

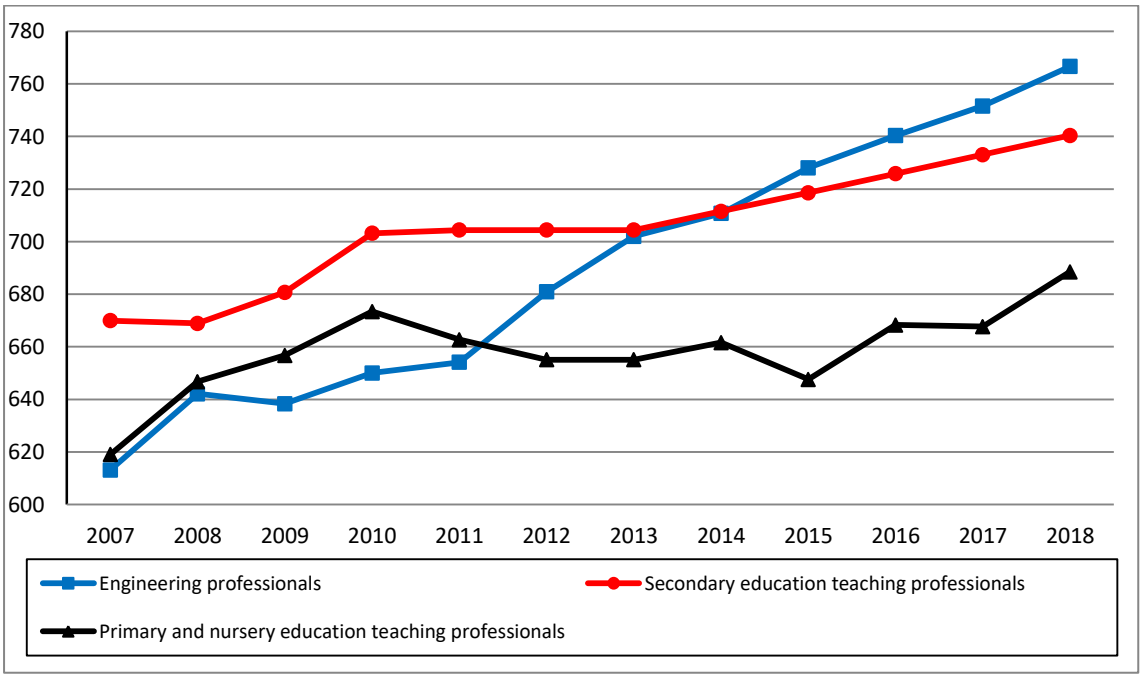
A Science, Research, Engineering and Technology professionals (median basic pay £pw)

Occupational groups	Chemical scientists	Biological scientists and biochemists	Physical scientists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	607.6	610.2	691.6	669.9	619.0
2008	645.6	626.8	735.3	668.9	646.7
2009	614.8	652.9	755.5	680.7	656.7
2010	610.2	671.1	767.5	703.2	673.4
2011	603.5	697.7	766.9	704.4	662.7
2012	607.2	725.7	760.3	704.4	655.1
2013	637.3	687.3	749.2	704.4	655.1
2014	580.5	681.4	724.9	711.5	661.6
2015	589.6	689.8	677.7	718.6	647.6
2016	622.7	713.5	647.4	725.8	668.3
2017	589.7	694.6	725.6	733.1	667.7
2018	599.2	701.7	735.4	740.4	688.5



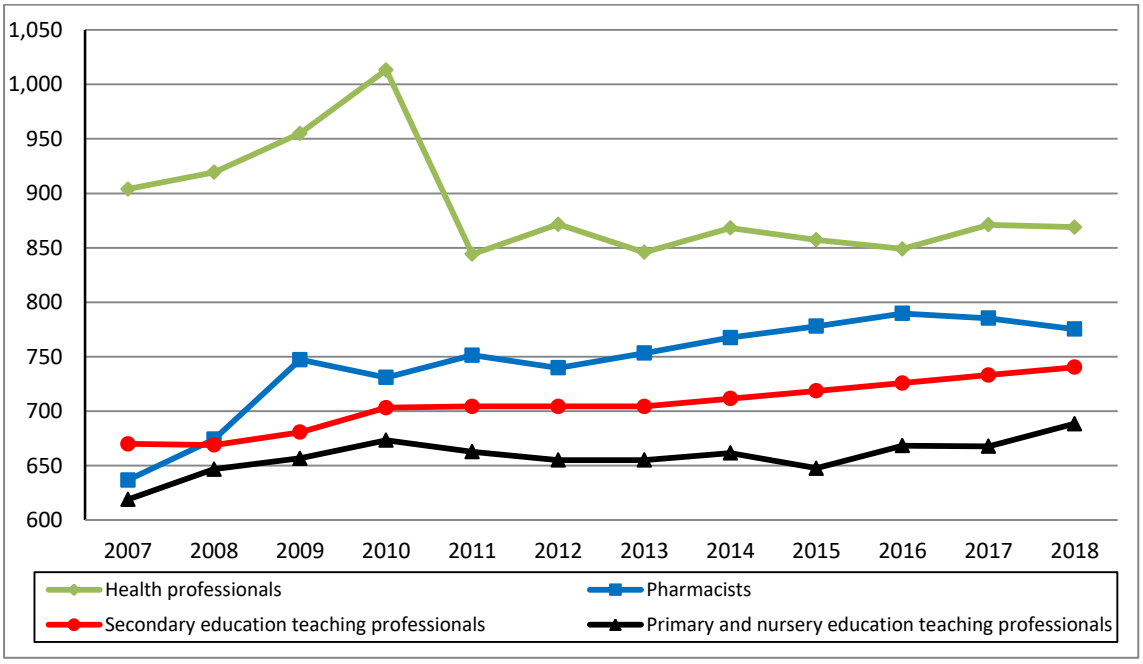
B Engineering professionals (median basic pay £pw)

Occupational groups	Engineering professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	613.1	669.9	619.0
2008	642.1	668.9	646.7
2009	638.3	680.7	656.7
2010	650.0	703.2	673.4
2011	654.1	704.4	662.7
2012	680.9	704.4	655.1
2013	702.0	704.4	655.1
2014	710.7	711.5	661.6
2015	728.1	718.6	647.6
2016	740.3	725.8	668.3
2017	751.6	733.1	667.7
2018	766.6	740.4	688.5



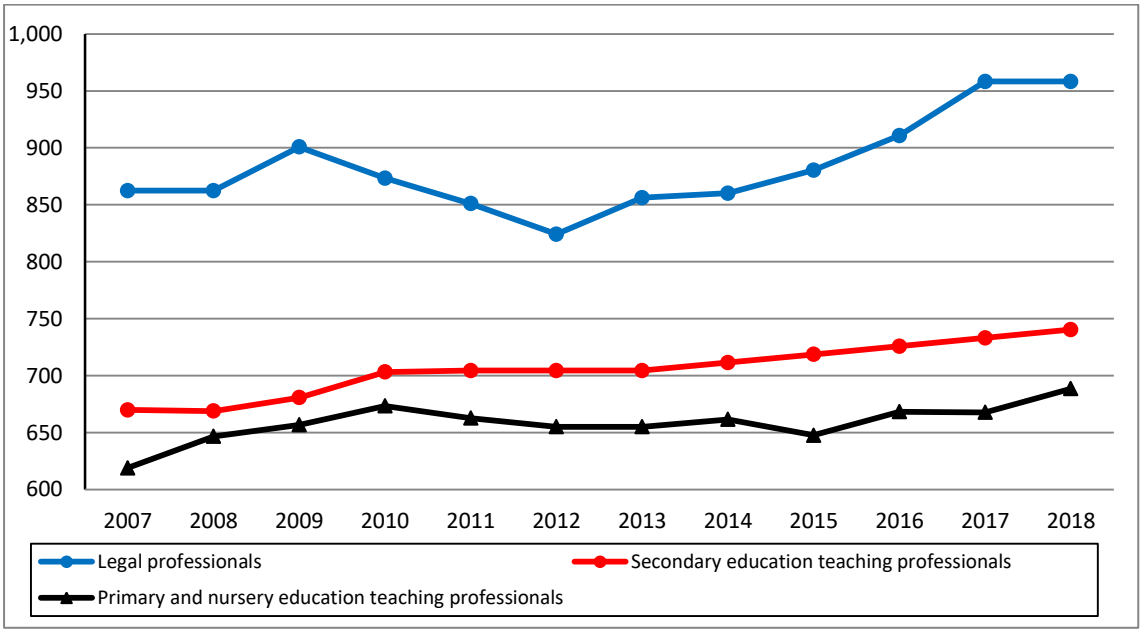
C Health professionals (median basic pay £pw)

Occupational groups	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	903.9	636.7	669.9	619.0
2008	919.4	674.2	668.9	646.7
2009	955.0	747.3	680.7	656.7
2010	1,013.2	730.9	703.2	673.4
2011	844.1	751.4	704.4	662.7
2012	871.6	739.8	704.4	655.1
2013	845.8	753.3	704.4	655.1
2014	868.2	767.6	711.5	661.6
2015	857.4	778.0	718.6	647.6
2016	848.9	789.8	725.8	668.3
2017	871.1	785.3	733.1	667.7
2018	868.9	775.4	740.4	688.5



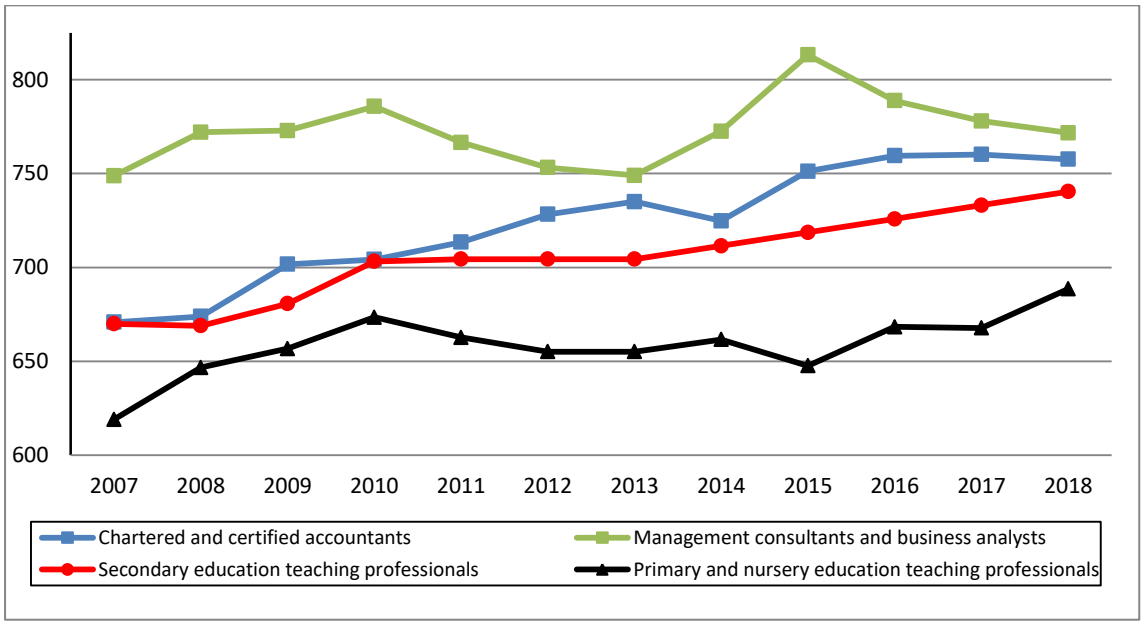
D Legal professionals (median basic pay £pw)

Occupational groups	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	862.4	669.9	619.0
2008	862.4	668.9	646.7
2009	900.8	680.7	656.7
2010	873.4	703.2	673.4
2011	851.0	704.4	662.7
2012	824.1	704.4	655.1
2013	856.2	704.4	655.1
2014	860.2	711.5	661.6
2015	880.4	718.6	647.6
2016	910.7	725.8	668.3
2017	958.2	733.1	667.7
2018	958.2	740.4	688.5



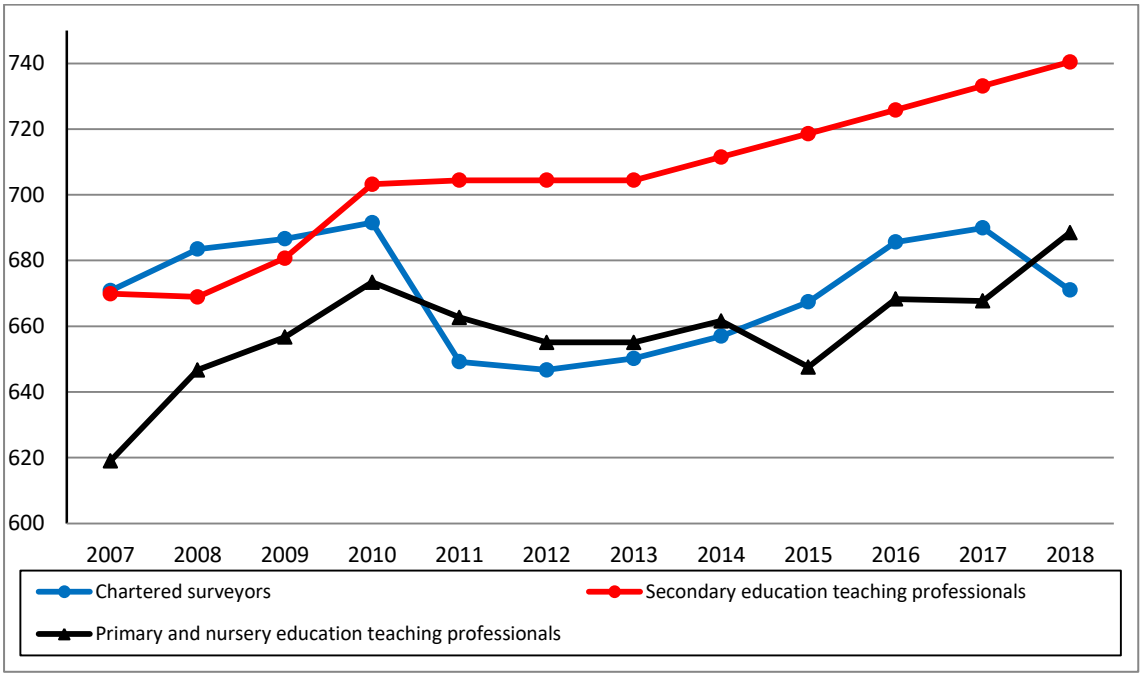
E Business, Research and Administrative professionals (median basic pay £pw)

Occupational groups	Chartered and certified accountants	Management consultants and business analysts	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	670.8	748.8	669.9	619.0
2008	673.9	772.0	668.9	646.7
2009	701.7	772.9	680.7	656.7
2010	704.2	785.8	703.2	673.4
2011	713.4	766.6	704.4	662.7
2012	728.3	753.2	704.4	655.1
2013	735.0	749.0	704.4	655.1
2014	724.8	772.5	711.5	661.6
2015	751.2	813.2	718.6	647.6
2016	759.5	788.8	725.8	668.3
2017	760.2	778.0	733.1	667.7
2018	757.6	771.7	740.4	688.5



F Chartered surveyors (median basic pay £pw)

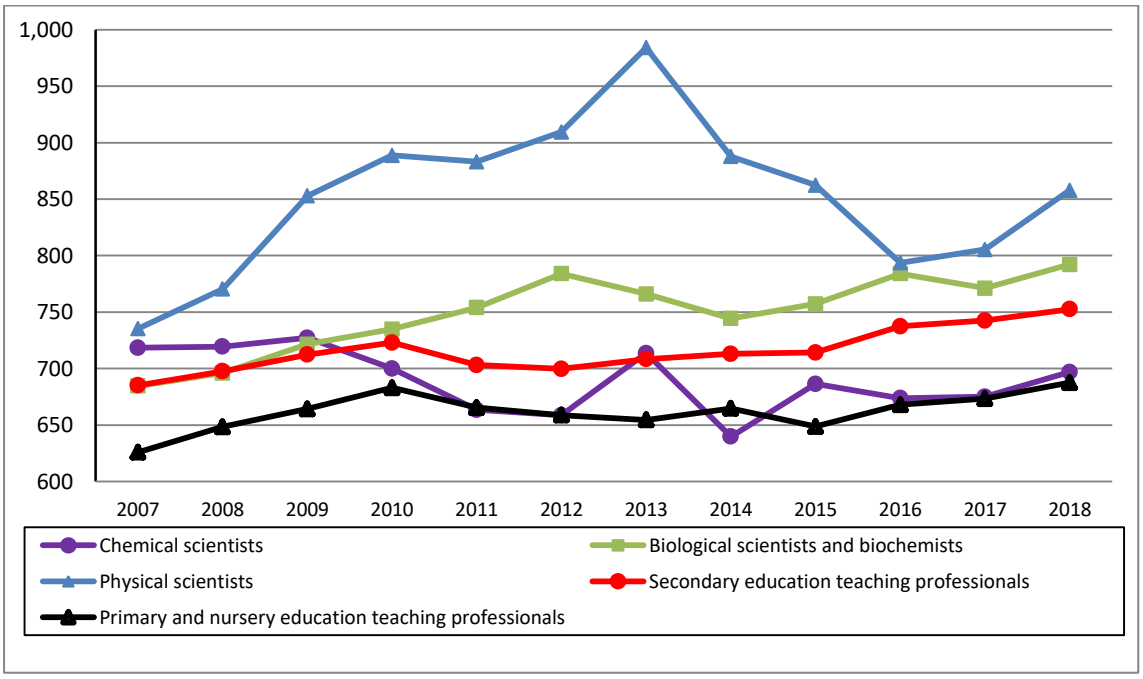
Occupational groups	Chartered surveyors	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	670.8	669.9	619.0
2008	683.5	668.9	646.7
2009	686.6	680.7	656.7
2010	691.5	703.2	673.4
2011	649.2	704.4	662.7
2012	646.7	704.4	655.1
2013	650.2	704.4	655.1
2014	657.0	711.5	661.6
2015	667.4	718.6	647.6
2016	685.6	725.8	668.3
2017	689.9	733.1	667.7
2018	671.0	740.4	688.5



Appendix 4: Average basic weekly earnings (ASHE)

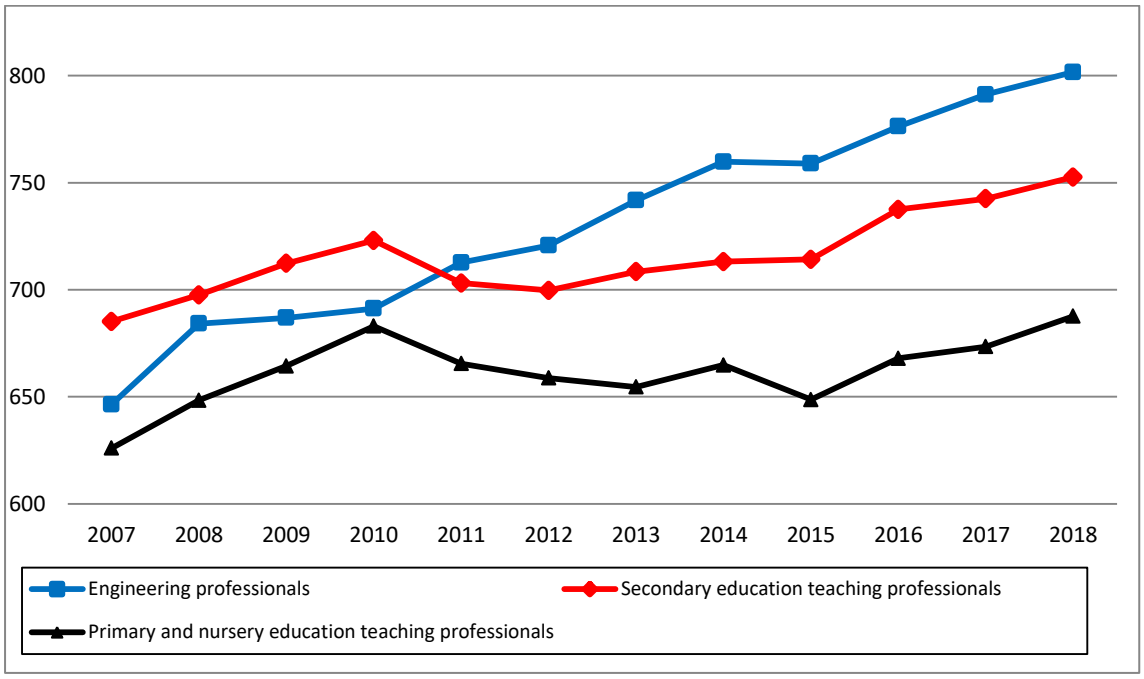
A Science, Research, Engineering and Technology professionals (average basic pay £pw)

Occupational groups	Chemical scientists	Biological scientists and biochemists	Physical scientists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	718.5	684.6	735.3	685.2	626.0
2008	719.5	696.1	770.5	697.6	648.4
2009	727.2	721.5	852.9	712.3	664.4
2010	700.1	734.9	888.7	723.0	683.0
2011	663.5	754.0	883.1	703.1	665.5
2012	658.6	784.0	909.5	699.7	658.8
2013	713.6	766.1	984.1	708.4	654.6
2014	639.8	744.4	887.8	713.1	664.8
2015	686.4	757.3	862.4	714.2	648.7
2016	673.8	784.0	793.7	737.5	668.0
2017	675.1	771.2	805.5	742.5	673.4
2018	696.9	792.1	857.9	752.6	687.6



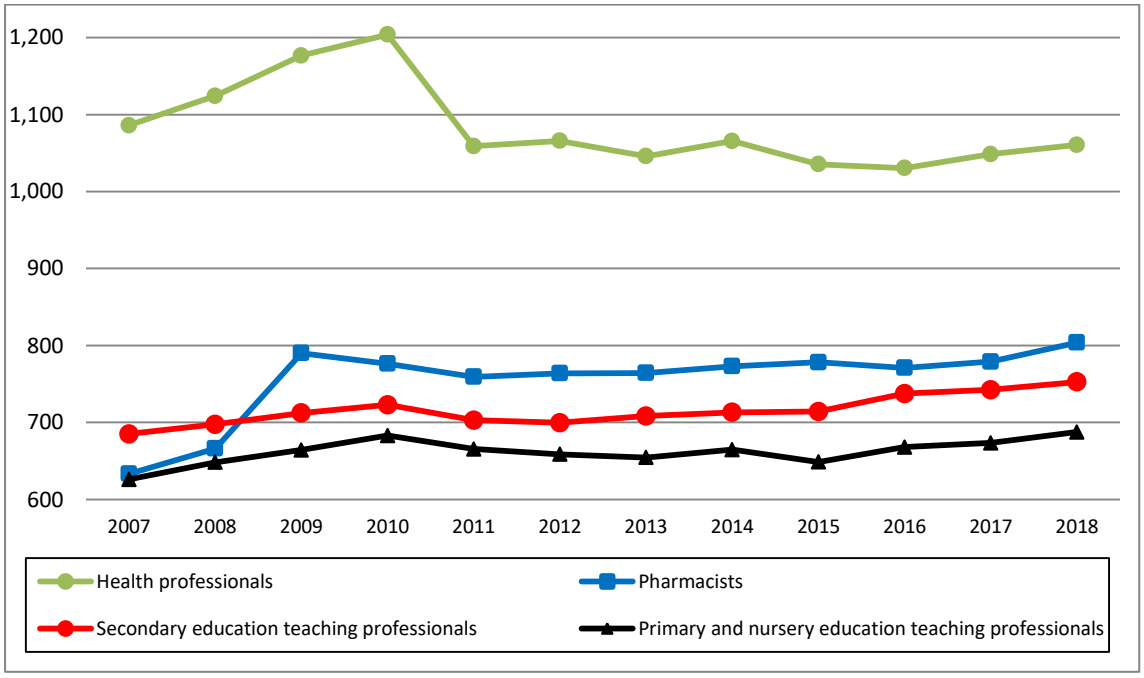
B Engineering professionals (average basic pay £pw)

Occupational groups	Engineering professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	646.4	685.2	626.0
2008	684.2	697.6	648.4
2009	686.9	712.3	664.4
2010	691.2	723.0	683.0
2011	712.7	703.1	665.5
2012	720.7	699.7	658.8
2013	741.8	708.4	654.6
2014	759.8	713.1	664.8
2015	759.0	714.2	648.7
2016	776.3	737.5	668.0
2017	791.2	742.5	673.4
2018	801.7	752.6	687.6



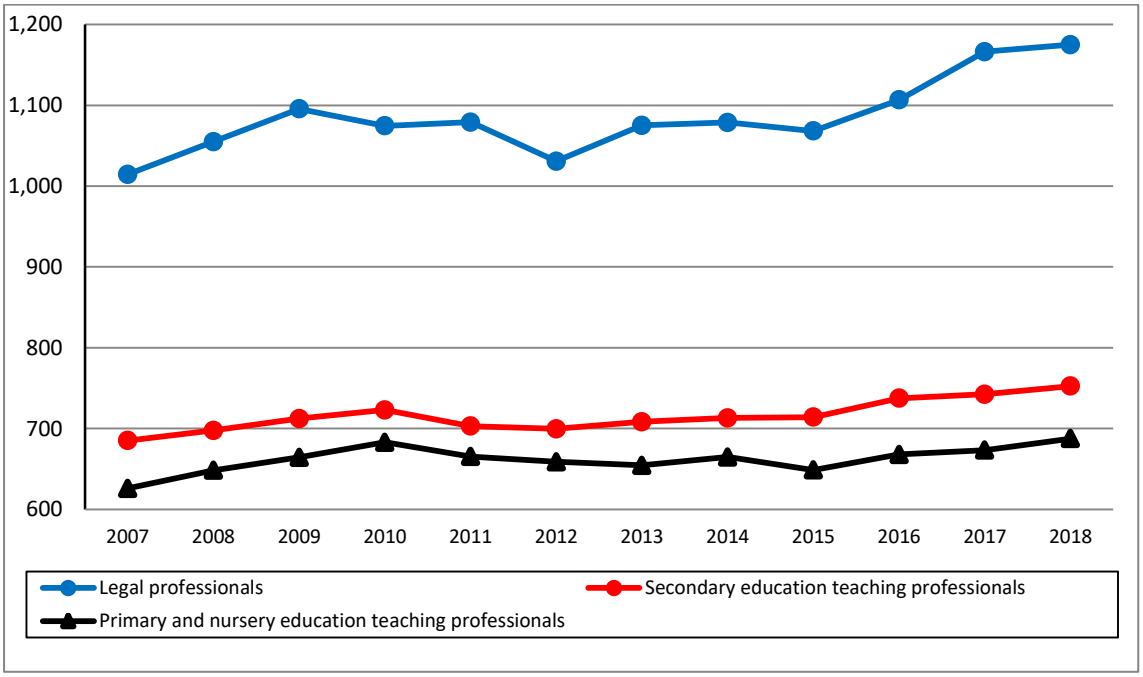
C Health professionals (average basic pay £pw)

Occupational groups	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	1,086.0	633.4	685.2	626.0
2008	1,124.3	666.1	697.6	648.4
2009	1,176.7	790.1	712.3	664.4
2010	1,203.8	776.3	723.0	683.0
2011	1,059.0	759.3	703.1	665.5
2012	1,065.7	763.9	699.7	658.8
2013	1,045.9	764.3	708.4	654.6
2014	1,065.5	773.0	713.1	664.8
2015	1,035.5	778.3	714.2	648.7
2016	1,030.5	770.9	737.5	668.0
2017	1,048.5	779.1	742.5	673.4
2018	1,060.7	803.9	752.6	687.6



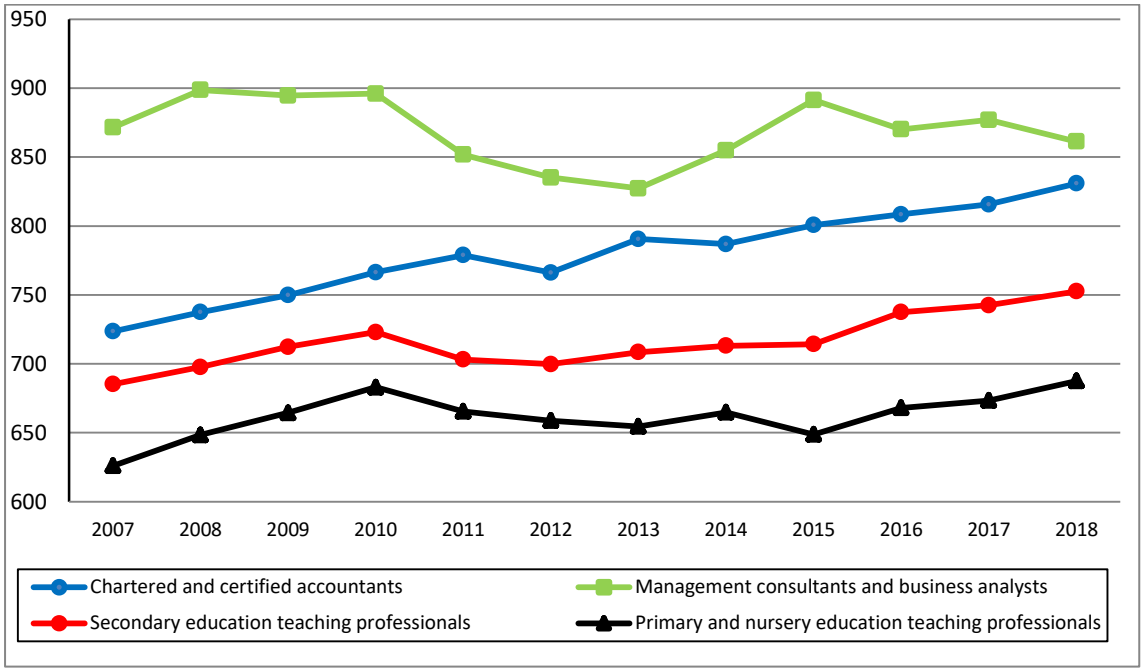
D Legal professionals (average basic pay £pw)

Occupational groups	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	1,014.6	685.2	626.0
2008	1,054.9	697.6	648.4
2009	1,095.5	712.3	664.4
2010	1,074.5	723.0	683.0
2011	1,079.1	703.1	665.5
2012	1,030.8	699.7	658.8
2013	1,075.2	708.4	654.6
2014	1,078.7	713.1	664.8
2015	1,068.2	714.2	648.7
2016	1,106.7	737.5	668.0
2017	1,166.2	742.5	673.4
2018	1,175.0	752.6	687.6



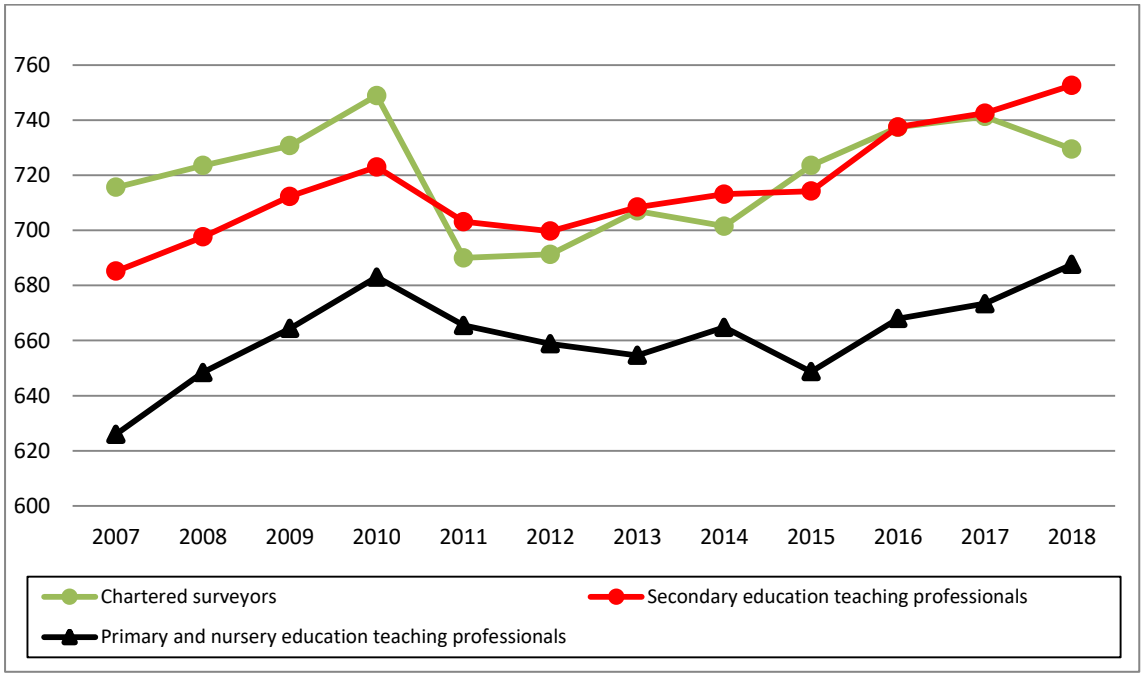
E Business, Research and Administrative professionals ((average basic pay £pw)

Occupational groups	Chartered and certified accountants	Management consultants and business analysts	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	723.6	871.5	685.2	626.0
2008	737.5	898.7	697.6	648.4
2009	749.8	894.6	712.3	664.4
2010	766.4	896.0	723.0	683.0
2011	778.8	851.8	703.1	665.5
2012	766.2	835.1	699.7	658.8
2013	790.5	827.2	708.4	654.6
2014	786.8	854.9	713.1	664.8
2015	800.6	891.4	714.2	648.7
2016	808.4	870.1	737.5	668.0
2017	815.6	876.9	742.5	673.4
2018	830.8	861.3	752.6	687.6



F Chartered Surveyors (average basic pay £pw)

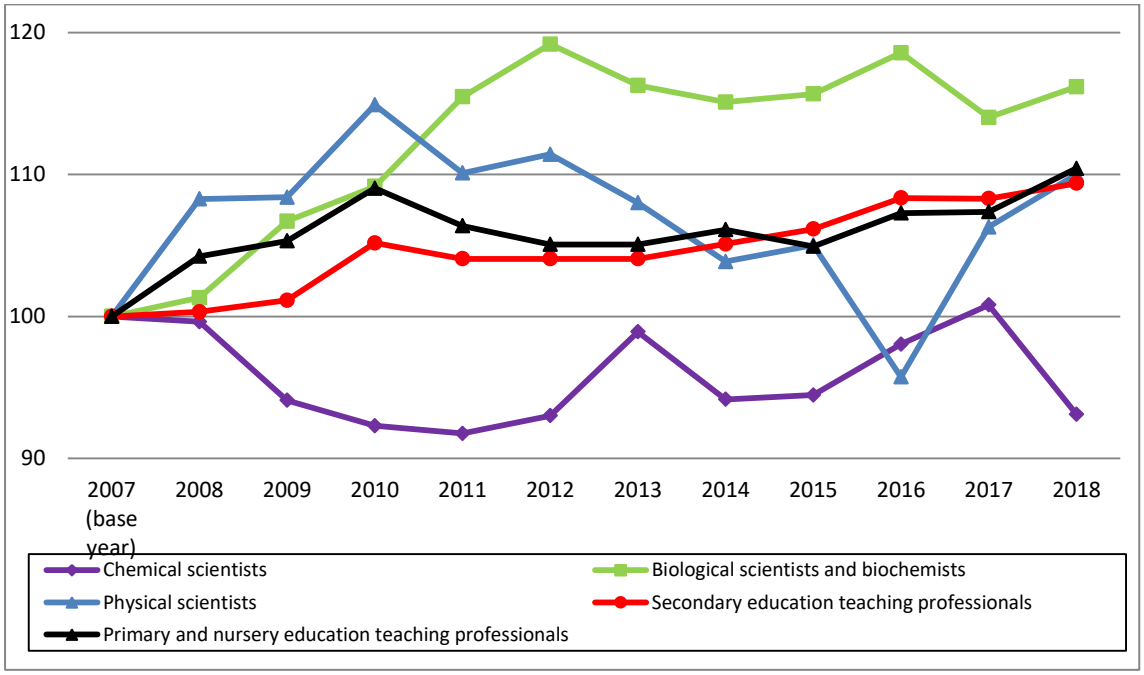
Occupational groups	Chartered surveyors	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	715.6	685.2	626.0
2008	723.5	697.6	648.4
2009	730.7	712.3	664.4
2010	748.9	723.0	683.0
2011	690.0	703.1	665.5
2012	691.3	699.7	658.8
2013	707.0	708.4	654.6
2014	701.5	713.1	664.8
2015	723.5	714.2	648.7
2016	737.4	737.5	668.0
2017	741.3	742.5	673.4
2018	729.5	752.6	687.6



Appendix 5: Indexed median gross weekly earnings 2007 to 2018

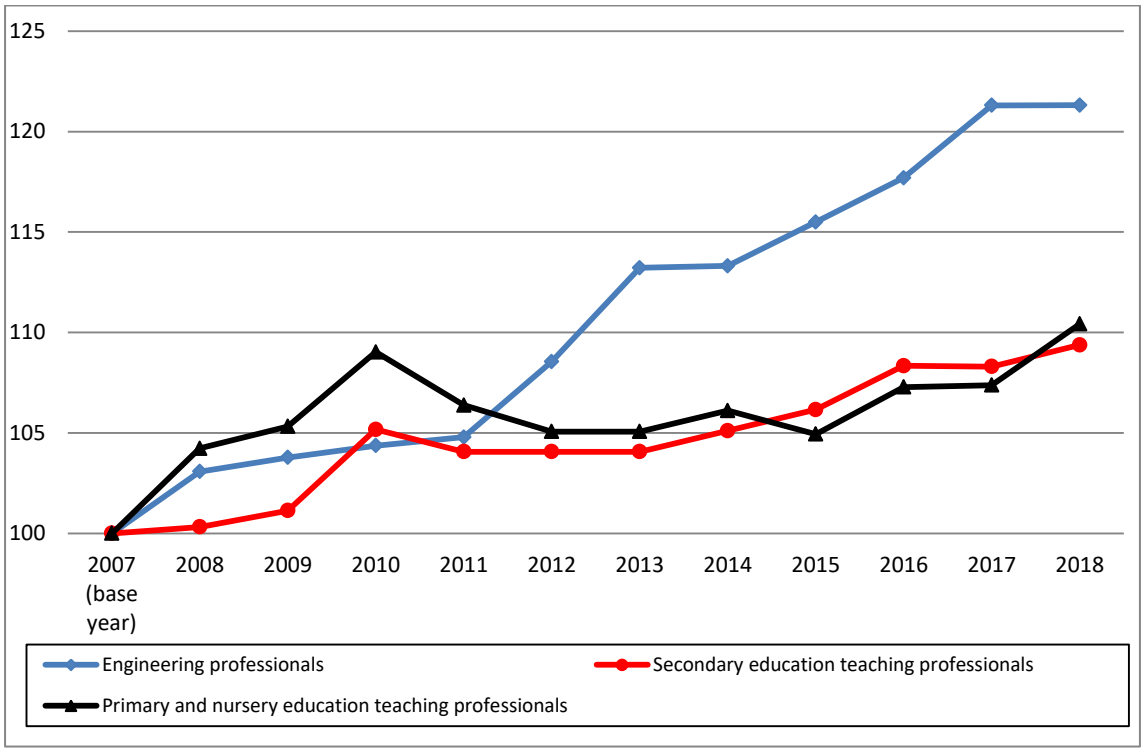
A Science, Research, Engineering and Technology professionals

Occupational groups	Chemical scientists	Biological scientists and biochemists	Physical scientists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0	100.0
2008	99.6	101.3	108.3	100.3	104.2
2009	94.1	106.7	108.4	101.1	105.3
2010	92.3	109.1	114.9	105.2	109.0
2011	91.8	115.5	110.1	104.1	106.4
2012	93.0	119.2	111.4	104.1	105.1
2013	98.9	116.3	108.0	104.1	105.1
2014	94.2	115.1	103.9	105.1	106.1
2015	94.5	115.7	105.0	106.2	104.9
2016	98.0	118.6	95.7	108.3	107.3
2017	100.8	114.0	106.3	108.3	107.4
2018	93.1	116.2	110.0	109.4	110.4



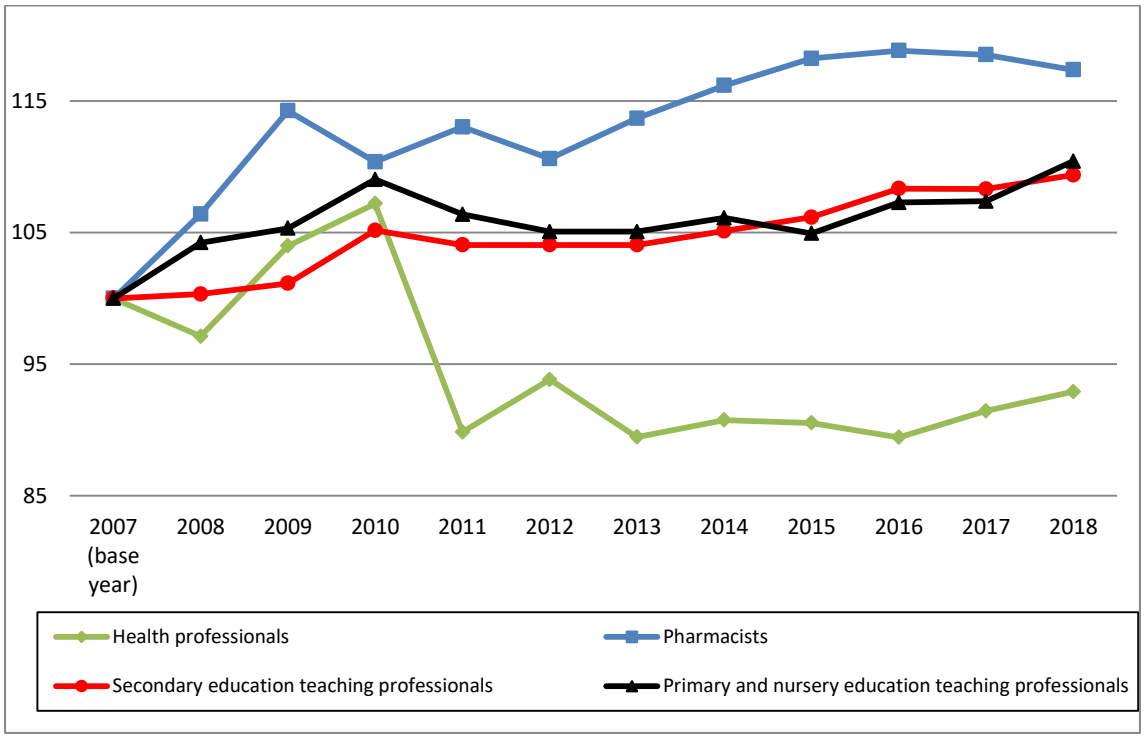
B Engineering professionals

Occupational groups	Engineering professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	103.1	100.3	104.2
2009	103.8	101.1	105.3
2010	104.4	105.2	109.0
2011	104.8	104.1	106.4
2012	108.6	104.1	105.1
2013	113.2	104.1	105.1
2014	113.3	105.1	106.1
2015	115.5	106.2	104.9
2016	117.7	108.3	107.3
2017	121.3	108.3	107.4
2018	121.3	109.4	110.4



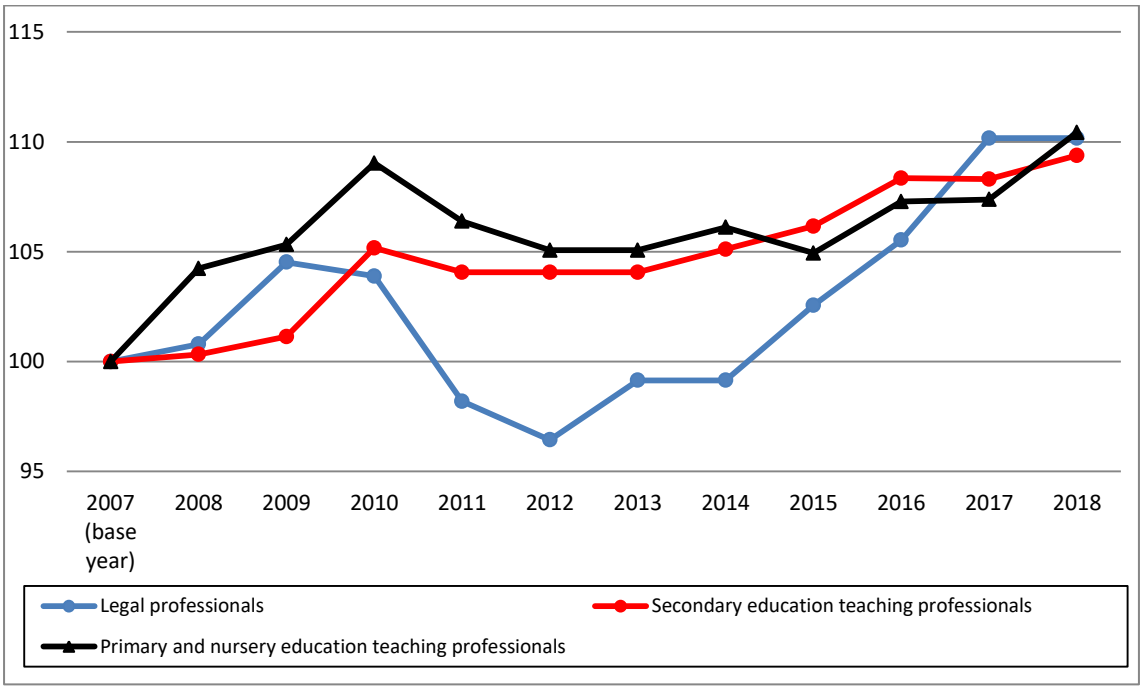
C Health professionals

Occupational groups	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0
2008	97.1	106.4	100.3	104.2
2009	104.0	114.3	101.1	105.3
2010	107.2	110.4	105.2	109.0
2011	89.8	113.0	104.1	106.4
2012	93.8	110.6	104.1	105.1
2013	89.5	113.7	104.1	105.1
2014	90.8	116.2	105.1	106.1
2015	90.5	118.2	106.2	104.9
2016	89.4	118.8	108.3	107.3
2017	91.4	118.5	108.3	107.4
2018	92.9	117.4	109.4	110.4



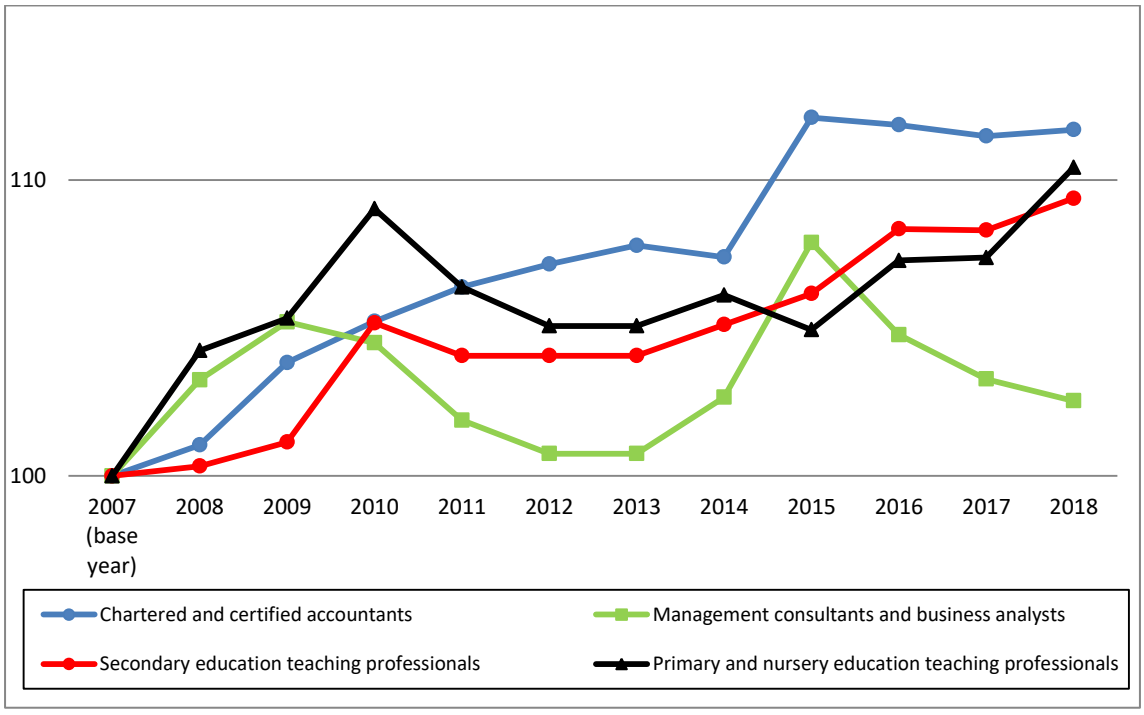
D Legal professionals

Occupational groups	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	100.8	100.3	104.2
2009	104.5	101.1	105.3
2010	103.9	105.2	109.0
2011	98.2	104.1	106.4
2012	96.4	104.1	105.1
2013	99.1	104.1	105.1
2014	99.1	105.1	106.1
2015	102.6	106.2	104.9
2016	105.5	108.3	107.3
2017	110.2	108.3	107.4
2018	110.2	109.4	110.4



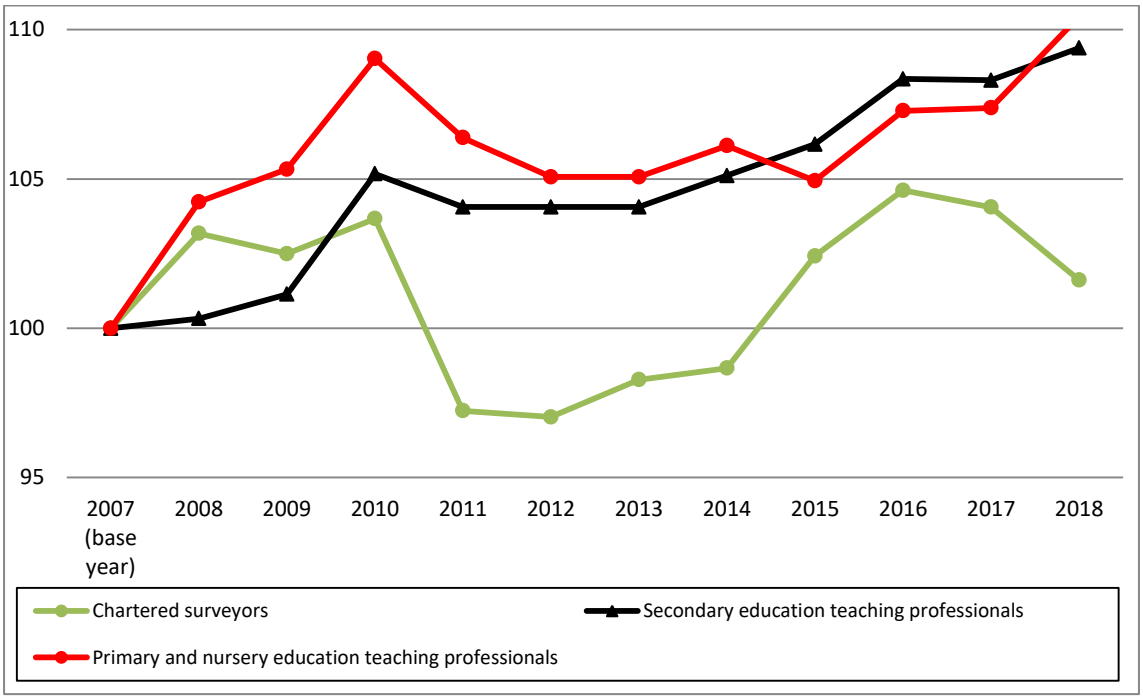
E Business, Research and Administrative professionals

Occupational groups	Chartered and certified accountants	Management consultants and business analysts	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0
2008	101.0	103.2	100.3	104.2
2009	103.8	105.2	101.1	105.3
2010	105.2	104.5	105.2	109.0
2011	106.4	101.9	104.1	106.4
2012	107.2	100.7	104.1	105.1
2013	107.8	100.7	104.1	105.1
2014	107.4	102.7	105.1	106.1
2015	112.1	107.9	106.2	104.9
2016	111.9	104.8	108.3	107.3
2017	111.5	103.3	108.3	107.4
2018	111.7	102.5	109.4	110.4



F Chartered Surveyors

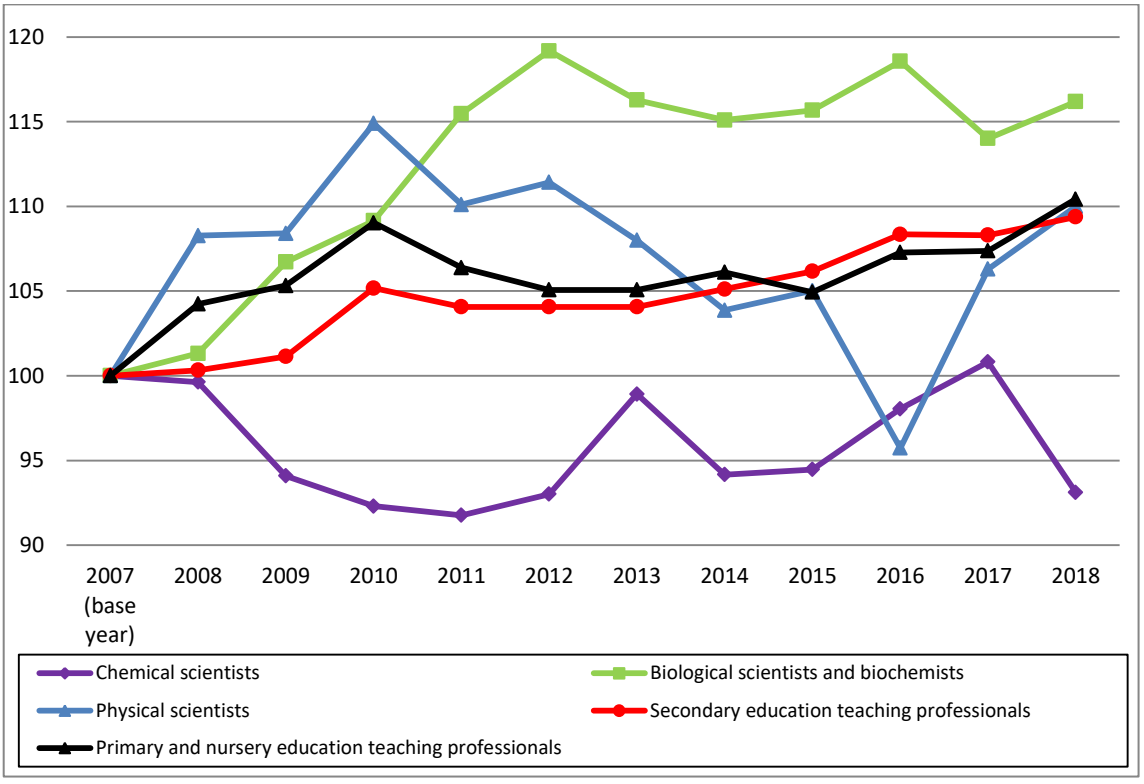
Occupational groups	Chartered surveyors	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	103.2	100.3	104.2
2009	102.5	101.1	105.3
2010	103.7	105.2	109.0
2011	97.2	104.1	106.4
2012	97.0	104.1	105.1
2013	98.3	104.1	105.1
2014	98.7	105.1	106.1
2015	102.4	106.2	104.9
2016	104.6	108.3	107.3
2017	104.1	108.3	107.4
2018	101.6	109.4	110.4



Appendix 6: Indexed average gross weekly earnings 1998 to 2015

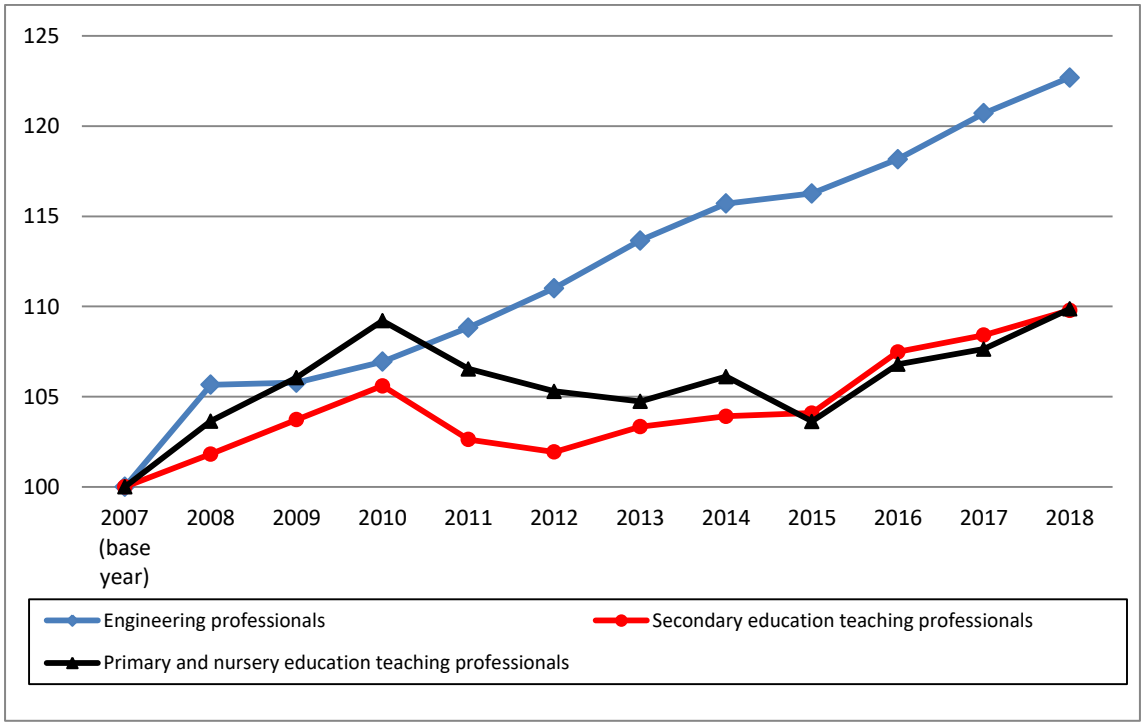
A Science, Research, Engineering and Technology professionals

Occupational groups	Chemical scientists	Biological scientists and biochemists	Physical scientists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0	100.0
2008	99.6	101.2	106.2	101.8	103.6
2009	98.4	104.8	115.9	103.7	106.1
2010	94.8	106.6	120.8	105.6	109.2
2011	92.0	109.9	120.1	102.6	106.5
2012	91.2	113.7	124.6	101.9	105.3
2013	96.6	111.6	132.2	103.3	104.7
2014	89.3	109.6	119.3	103.9	106.1
2015	94.5	110.6	116.9	104.1	103.6
2016	94.1	114.7	108.6	107.5	106.8
2017	95.2	113.8	109.1	108.4	107.6
2018	97.9	117.1	117.0	109.8	109.9



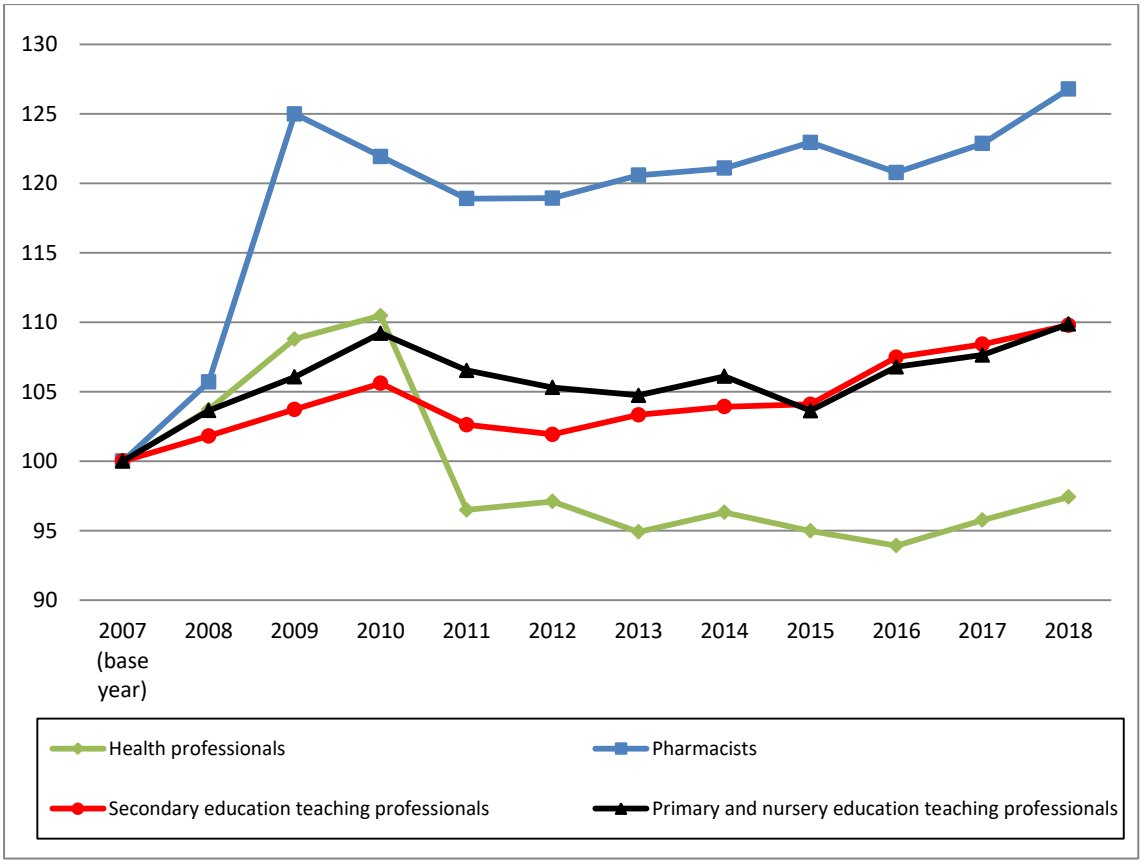
B Engineering professionals

Occupational groups	Engineering professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	105.7	101.8	103.6
2009	105.8	103.7	106.1
2010	106.9	105.6	109.2
2011	108.8	102.6	106.5
2012	111.0	101.9	105.3
2013	113.7	103.3	104.7
2014	115.7	103.9	106.1
2015	116.3	104.1	103.6
2016	118.2	107.5	106.8
2017	120.7	108.4	107.6
2018	122.7	109.8	109.9



C Health professionals

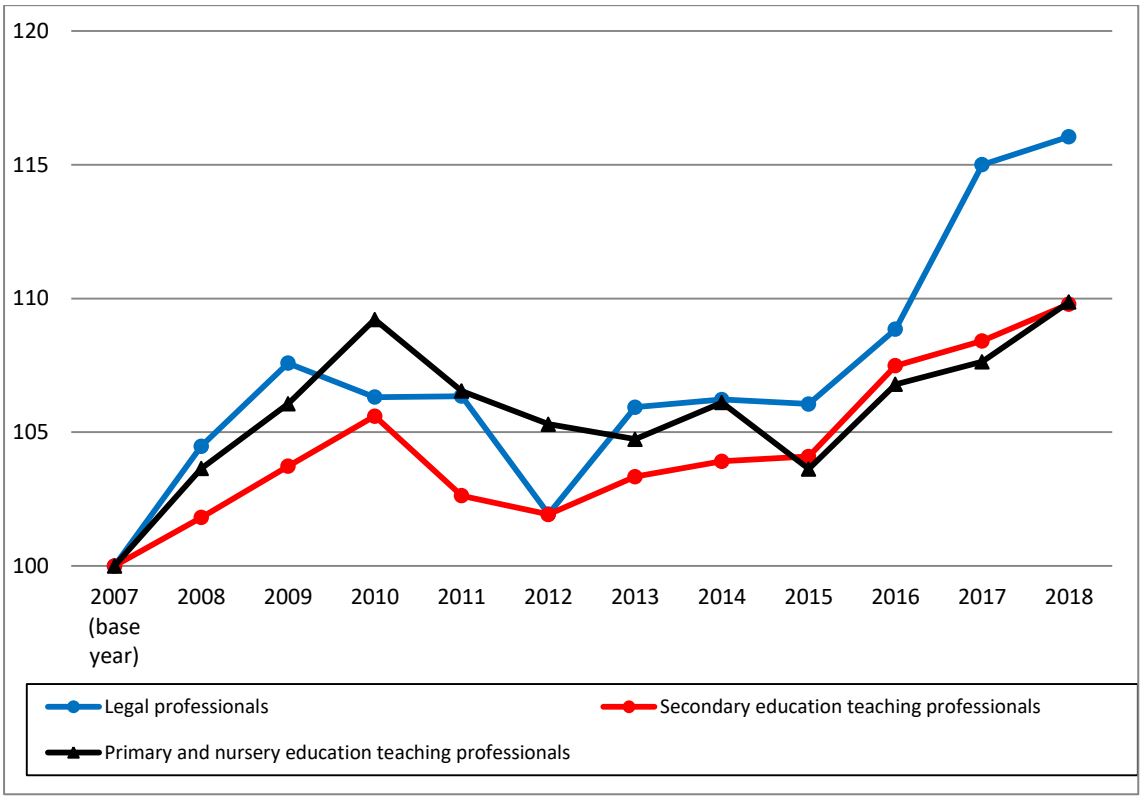
Occupational groups	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0
2008	103.7	105.7	101.8	103.6
2009	108.8	125.0	103.7	106.1
2010	110.5	121.9	105.6	109.2
2011	96.5	118.9	102.6	106.5
2012	97.1	118.9	101.9	105.3
2013	94.9	120.6	103.3	104.7
2014	96.3	121.1	103.9	106.1
2015	95.0	122.9	104.1	103.6
2016	93.9	120.8	107.5	106.8
2017	95.8	122.9	108.4	107.6
2018	97.4	126.8	109.8	109.9



D Legal professionals

Occupational groups	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	104.5	101.8	103.6
2009	107.6	103.7	106.1
2010	106.3	105.6	109.2
2011	106.3	102.6	106.5
2012	101.9	101.9	105.3
2013	105.9	103.3	104.7
2014	106.2	103.9	106.1
2015	106.1	104.1	103.6
2016	108.8	107.5	106.8

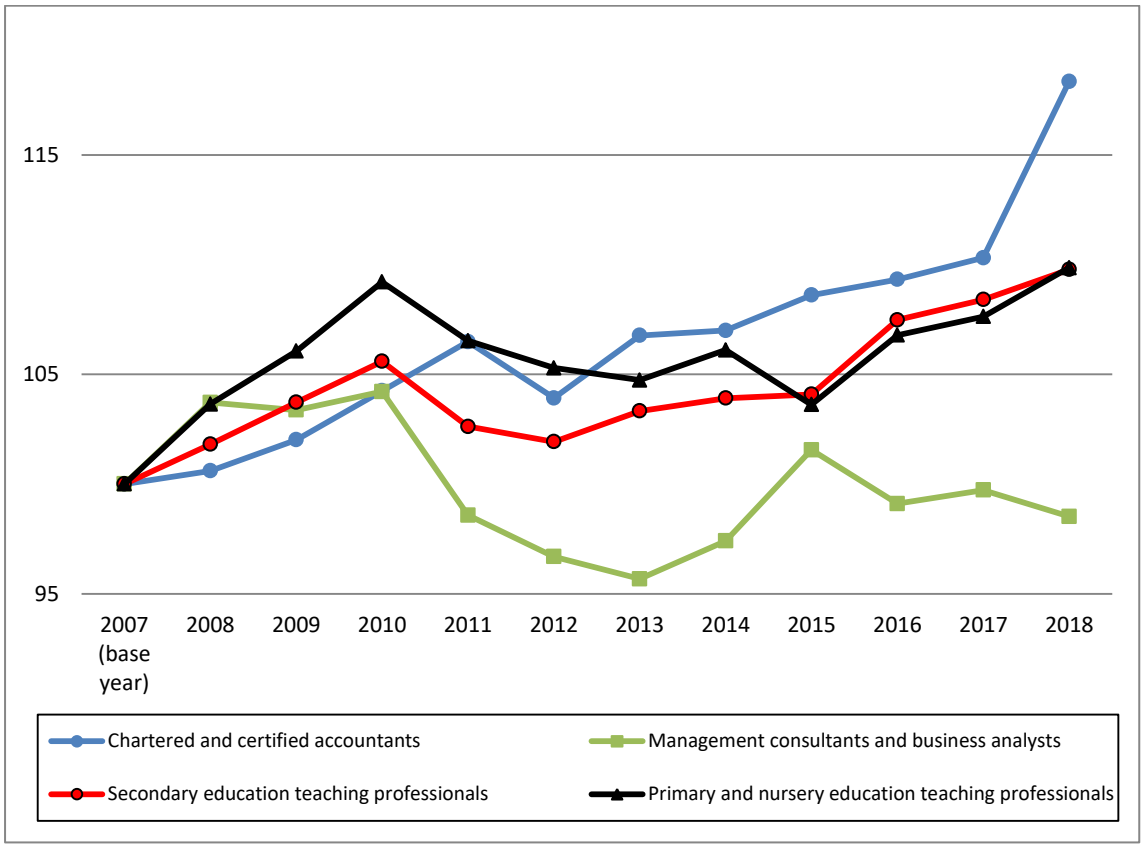
2017	115.0	108.4	107.6
2018	116.0	109.8	109.9



E Business, Research and Administrative professionals

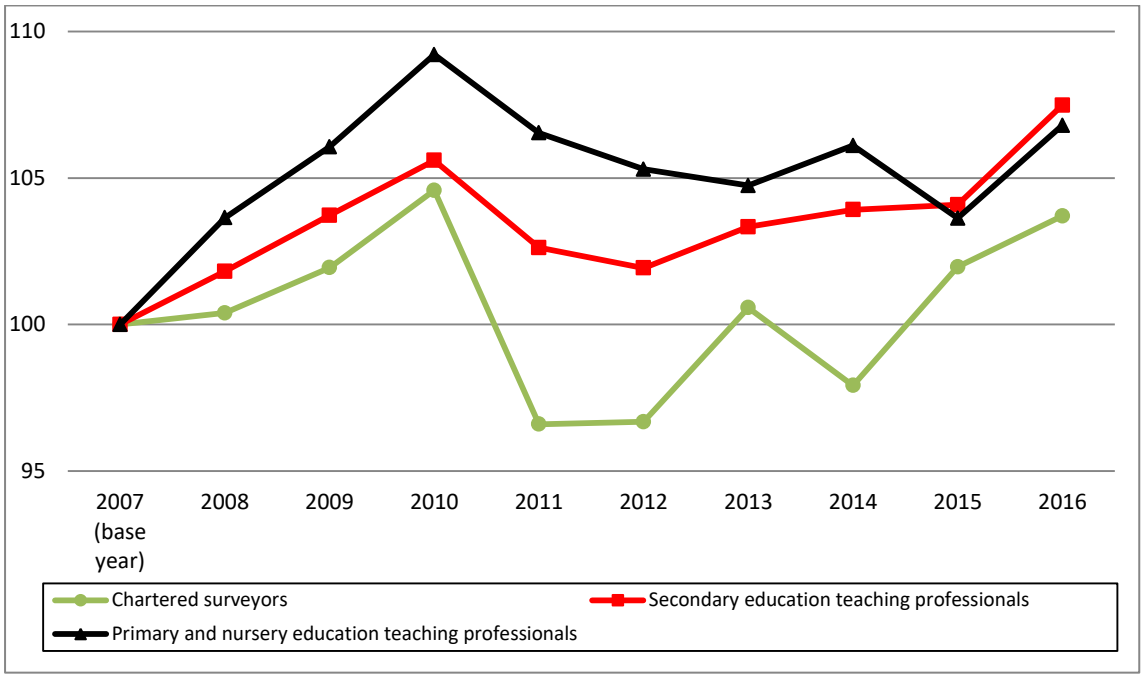
Occupational groups	Chartered and certified accountants	Management consultants and business analysts	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0
2008	100.6	103.7	101.8	103.6
2009	102.0	103.4	103.7	106.1
2010	104.2	104.2	105.6	109.2
2011	106.5	98.6	102.6	106.5
2012	103.9	96.7	101.9	105.3
2013	106.8	95.7	103.3	104.7

2014	107.0	97.4	103.9	106.1
2015	108.6	101.6	104.1	103.6
2016	109.3	99.1	107.5	106.8
2017	110.3	99.7	108.4	107.6
2018	118.4	98.5	109.8	109.9



F Chartered Surveyors

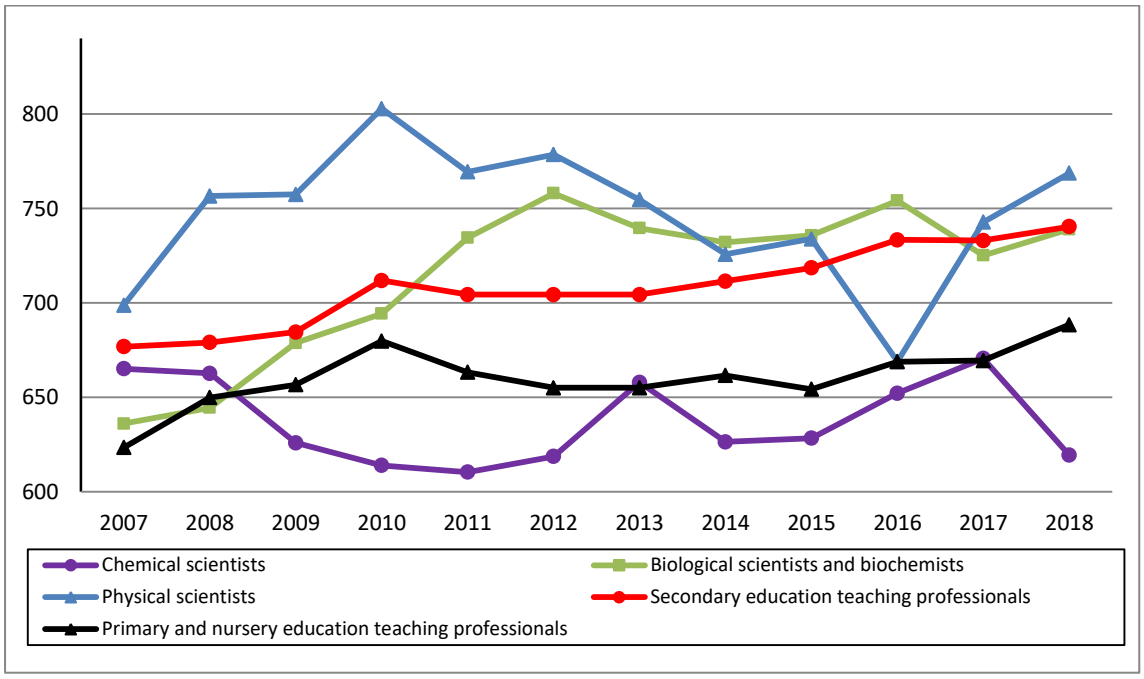
Occupational groups	Chartered surveyors	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	100.4	101.8	103.6
2009	101.9	103.7	106.1
2010	104.6	105.6	109.2
2011	96.6	102.6	106.5
2012	96.7	101.9	105.3
2013	100.6	103.3	104.7
2014	97.9	103.9	106.1
2015	102.0	104.1	103.6
2016	103.7	107.5	106.8
2017	104.3	108.4	107.6
2018	102.8	109.8	109.9



Appendix 7: Median gross weekly earnings 2007 to 2018 (ASHE)

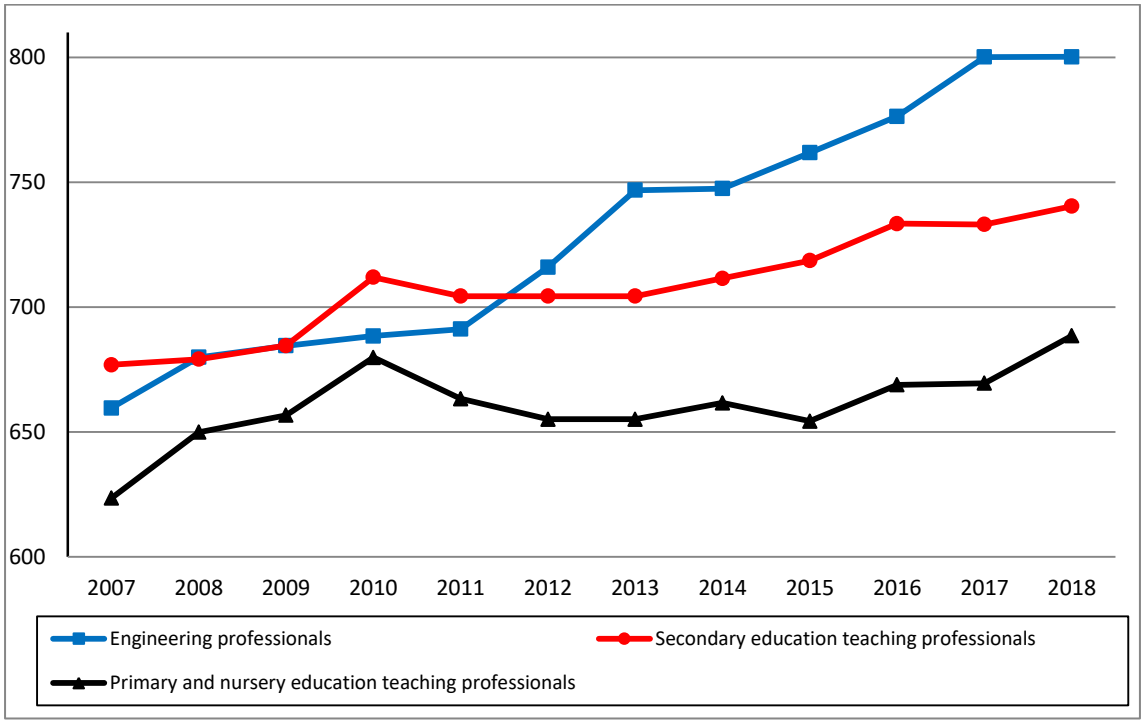
A Science, Research, Engineering and Technology professionals (median gross earnings £pw)

Occupational groups	Chemical scientists	Biological scientists and biochemists	Physical scientists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	665.2	636.1	698.8	676.9	623.5
2008	662.7	644.5	756.6	679.1	649.9
2009	625.9	678.8	757.5	684.6	656.7
2010	614.0	694.3	802.9	711.9	679.8
2011	610.4	734.5	769.4	704.4	663.3
2012	618.7	758.1	778.6	704.4	655.1
2013	658.0	739.6	754.7	704.4	655.1
2014	626.4	732.1	725.8	711.5	661.6
2015	628.4	735.8	733.9	718.6	654.3
2016	652.2	754.2	669.0	733.4	668.9
2017	670.6	725.2	742.8	733.1	669.5
2018	619.4	739.0	768.7	740.4	688.5



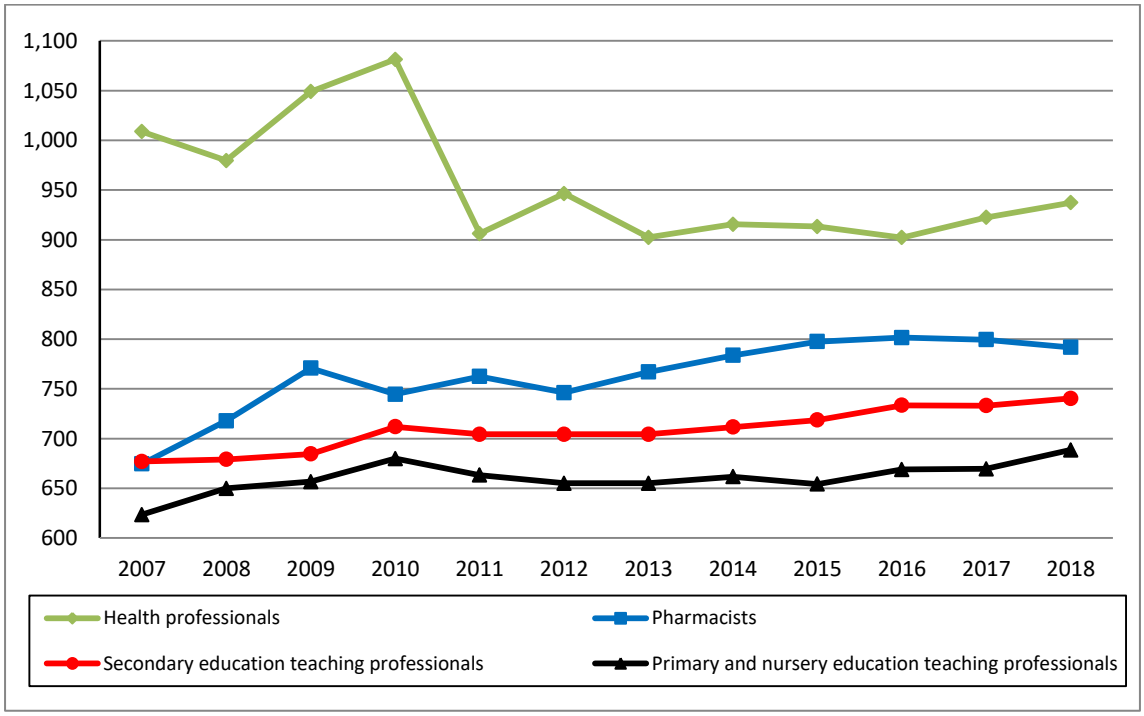
B Engineering professionals (median gross earnings £pw)

Occupational groups	Engineering professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	659.6	676.9	623.5
2008	679.9	679.1	649.9
2009	684.5	684.6	656.7
2010	688.4	711.9	679.8
2011	691.2	704.4	663.3
2012	716.0	704.4	655.1
2013	746.8	704.4	655.1
2014	747.4	711.5	661.6
2015	761.8	718.6	654.3
2016	776.3	733.4	668.9
2017	800.1	733.1	669.5
2018	800.2	740.4	688.5



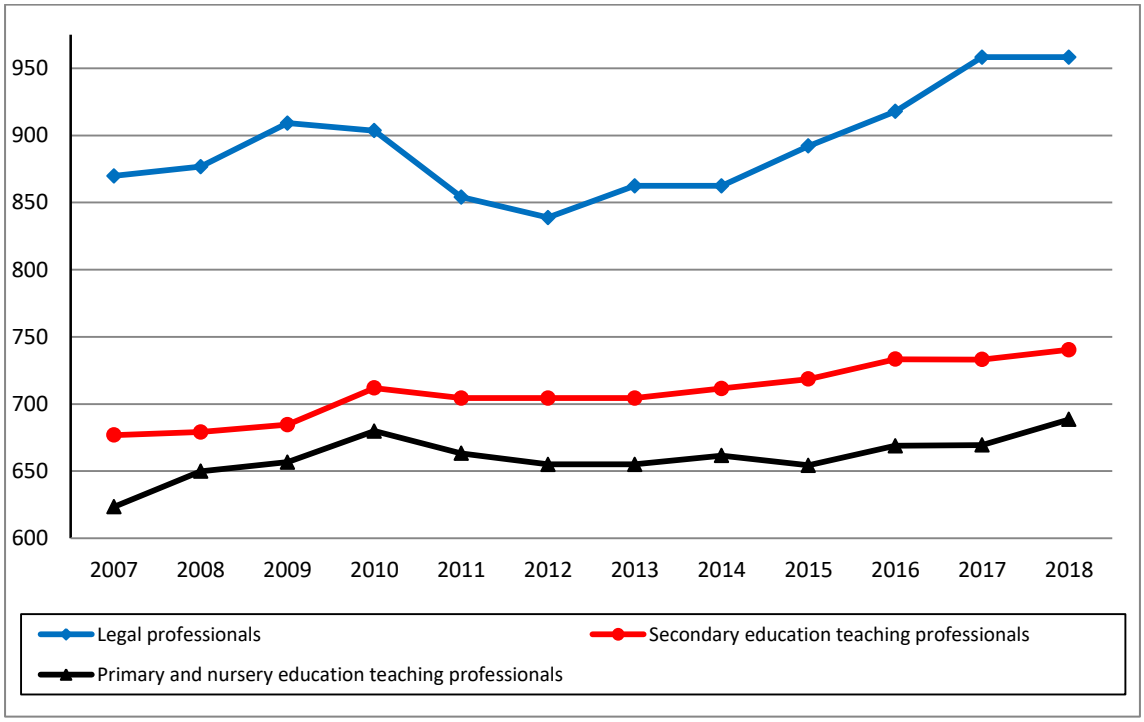
C Health professionals (median gross earnings £pw)

Occupational groups	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	1,008.8	674.6	676.9	623.5
2008	979.7	717.8	679.1	649.9
2009	1,049.0	770.8	684.6	656.7
2010	1,081.4	744.6	711.9	679.8
2011	906.2	762.5	704.4	663.3
2012	946.5	746.2	704.4	655.1
2013	902.4	766.9	704.4	655.1
2014	915.5	783.7	711.5	661.6
2015	913.3	797.6	718.6	654.3
2016	902.2	801.6	733.4	668.9
2017	922.4	799.5	733.1	669.5
2018	937.2	791.8	740.4	688.5



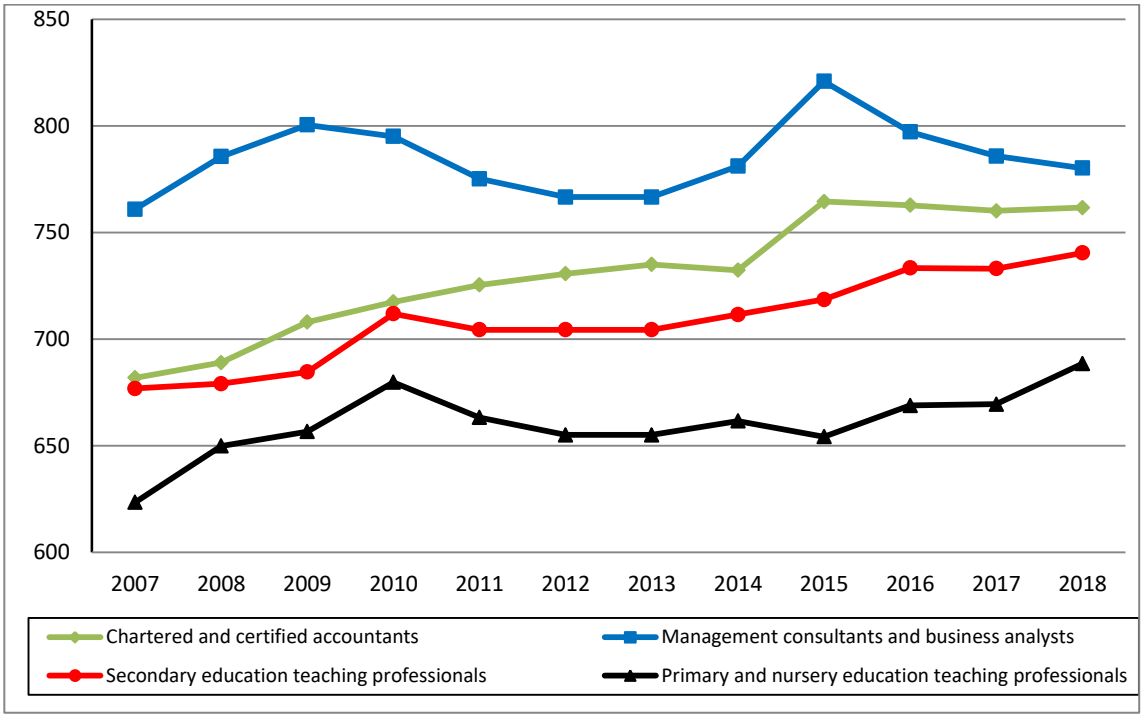
D Legal professionals (median gross earnings £pw)

Occupational groups	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	869.8	676.9	623.5
2008	876.7	679.1	649.9
2009	909.1	684.6	656.7
2010	903.6	711.9	679.8
2011	854.1	704.4	663.3
2012	838.8	704.4	655.1
2013	862.4	704.4	655.1
2014	862.4	711.5	661.6
2015	892.1	718.6	654.3
2016	917.9	733.4	668.9
2017	958.2	733.1	669.5
2018	958.2	740.4	688.5



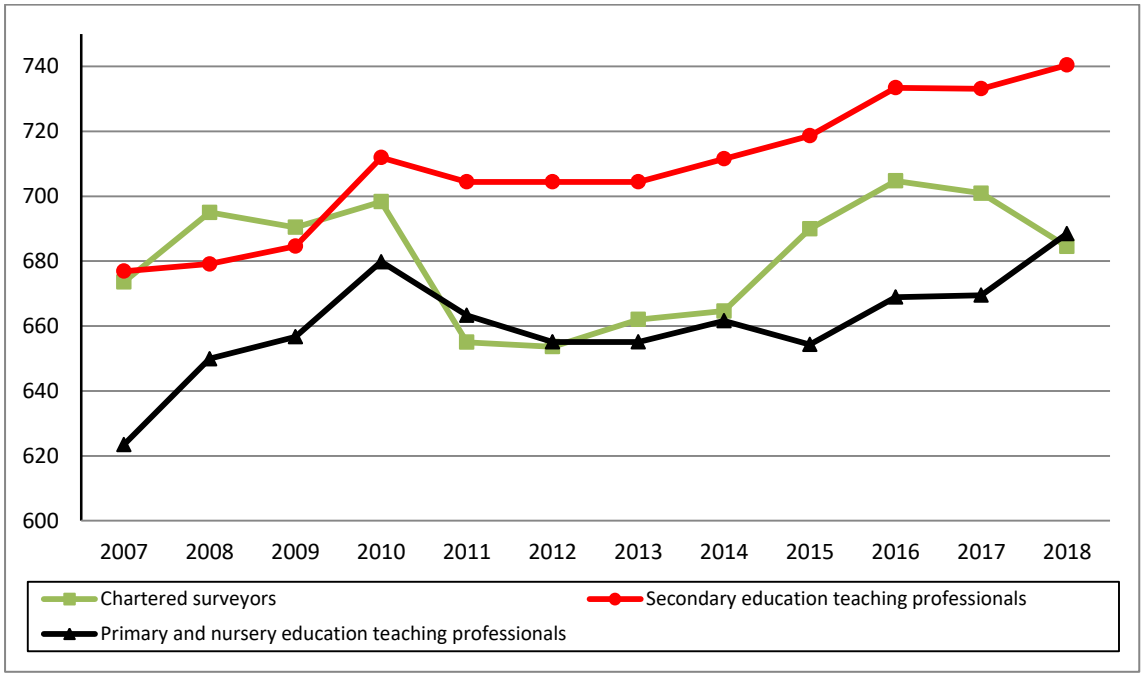
E Business, Research and Administrative professions (median gross earnings £pw)

Occupational groups	Chartered and certified accountants	Management consultants and business analysts	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	681.9	760.9	676.9	623.5
2008	689.0	785.6	679.1	649.9
2009	708.0	800.5	684.6	656.7
2010	717.5	795.1	711.9	679.8
2011	725.4	775.2	704.4	663.3
2012	730.7	766.6	704.4	655.1
2013	735.0	766.6	704.4	655.1
2014	732.3	781.1	711.5	661.6
2015	764.5	820.9	718.6	654.3
2016	762.8	797.2	733.4	668.9
2017	760.2	785.8	733.1	669.5
2018	761.7	780.2	740.4	688.5



F Chartered Surveyors (median gross earnings £pw)

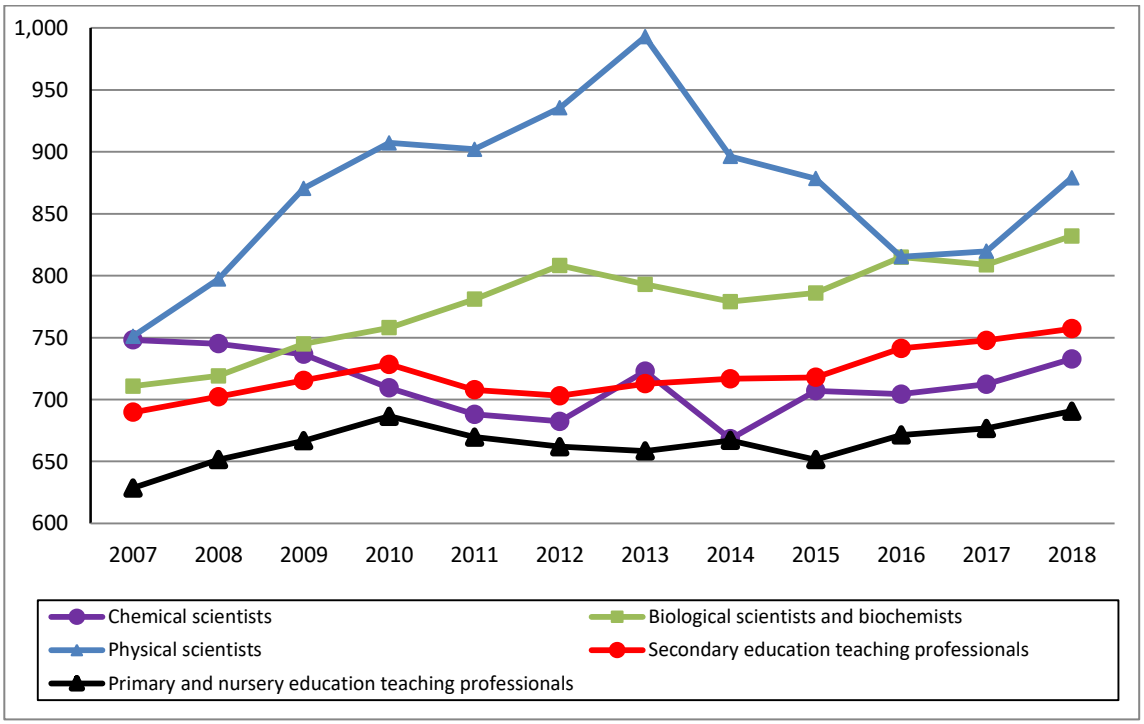
Occupational groups	Chartered surveyors	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	673.6	676.9	623.5
2008	695.0	679.1	649.9
2009	690.4	684.6	656.7
2010	698.3	711.9	679.8
2011	655.0	704.4	663.3
2012	653.6	704.4	655.1
2013	662.0	704.4	655.1
2014	664.6	711.5	661.6
2015	689.9	718.6	654.3
2016	704.7	733.4	668.9
2017	700.9	733.1	669.5
2018	684.5	740.4	688.5



Appendix 8: Average gross weekly earnings 2007 to 2018 (ASHE)

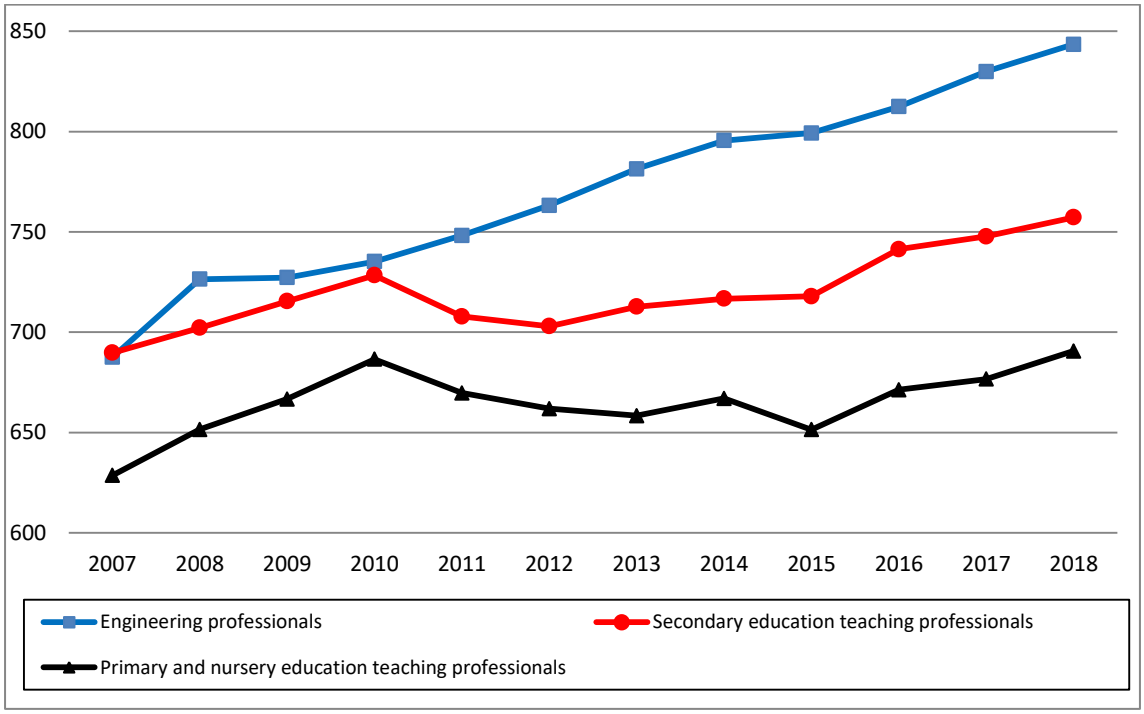
A Science, Research, Engineering and Technology professionals (average gross earnings £pw)

Occupational groups	Chemical scientists	Biological scientists and biochemists	Physical scientists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	748.2	710.8	751.1	689.7	628.6
2008	745.0	719.0	797.3	702.2	651.5
2009	736.5	744.9	870.6	715.4	666.7
2010	709.3	757.9	907.3	728.3	686.5
2011	688.0	781.0	902.1	707.8	669.7
2012	682.3	808.3	935.5	703.0	661.9
2013	722.8	793.0	993.0	712.7	658.4
2014	668.2	779.0	896.3	716.7	667.0
2015	707.0	786.0	878.4	717.9	651.4
2016	704.3	815.0	815.4	741.3	671.3
2017	712.3	808.7	819.7	747.7	676.6
2018	732.8	832.0	879.1	757.2	690.6



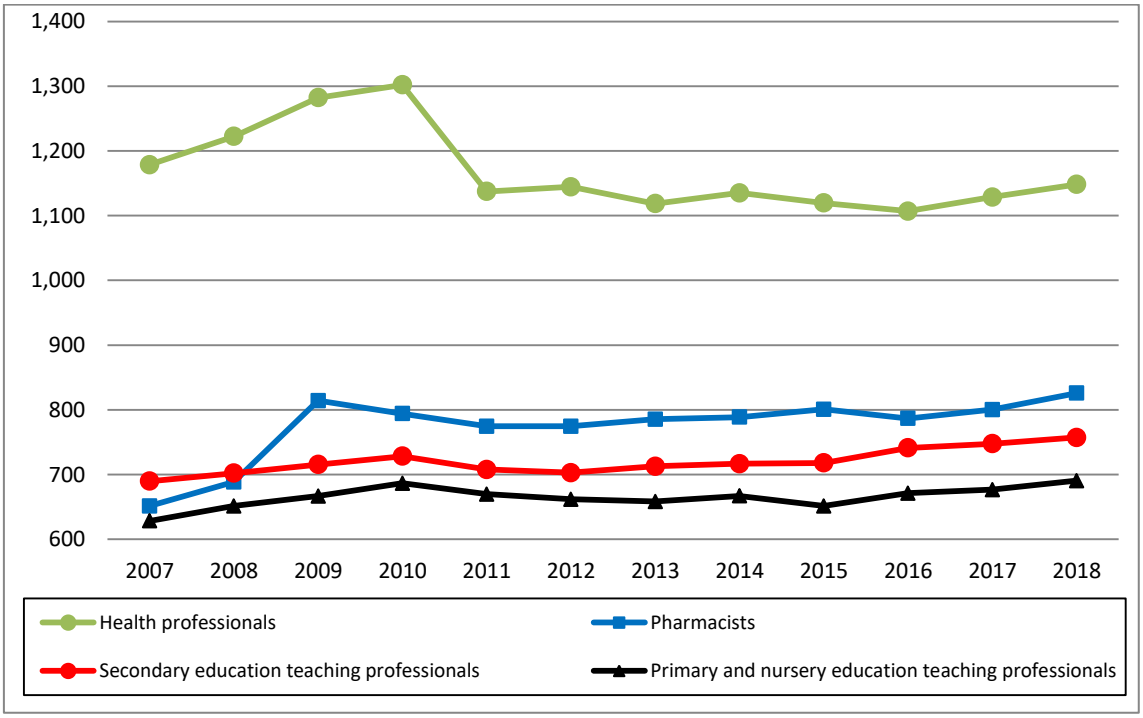
B Engineering professionals (average gross earnings £pw)

Occupational groups	Engineering professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	687.5	689.7	628.6
2008	726.4	702.2	651.5
2009	727.2	715.4	666.7
2010	735.2	728.3	686.5
2011	748.2	707.8	669.7
2012	763.2	703.0	661.9
2013	781.4	712.7	658.4
2014	795.5	716.7	667.0
2015	799.3	717.9	651.4
2016	812.4	741.3	671.3
2017	829.9	747.7	676.6
2018	843.5	757.2	690.6



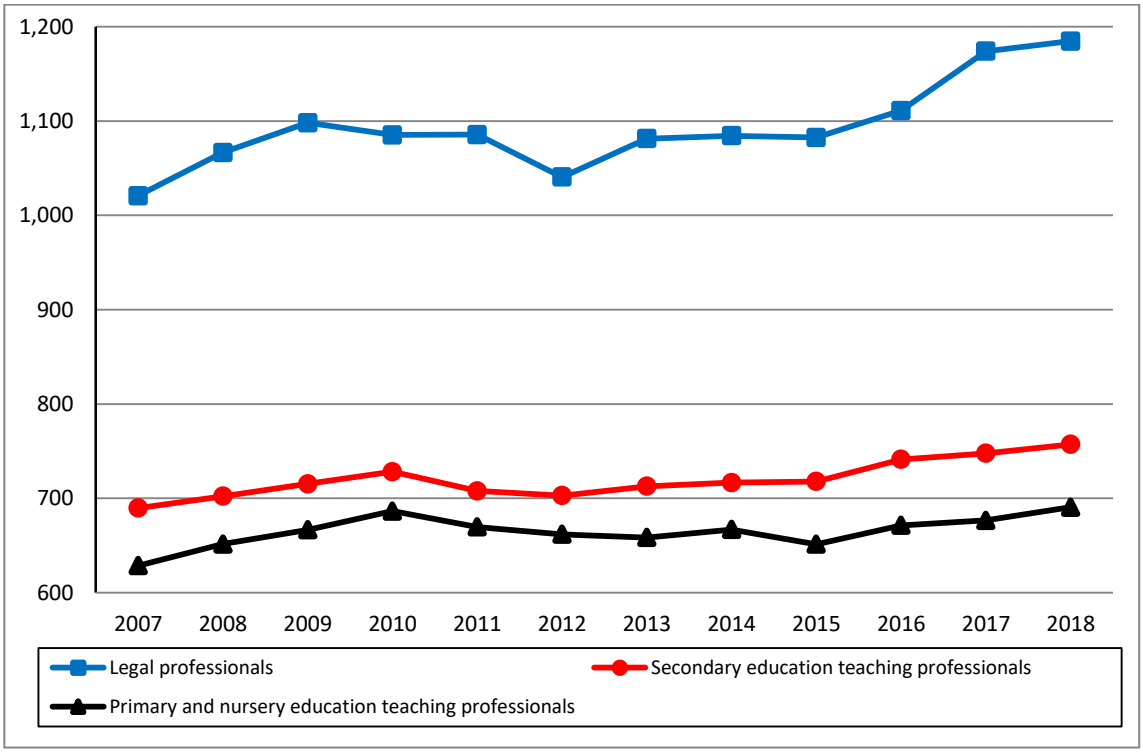
C Health professionals (average gross earnings £pw)

Occupational groups	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	1,178.6	651.4	689.7	628.6
2008	1,222.4	688.5	702.2	651.5
2009	1,282.2	814.2	715.4	666.7
2010	1,302.0	794.2	728.3	686.5
2011	1,137.3	774.5	707.8	669.7
2012	1,144.5	774.7	703.0	661.9
2013	1,118.6	785.4	712.7	658.4
2014	1,135.2	788.7	716.7	667.0
2015	1,119.5	800.8	717.9	651.4
2016	1,107.0	786.7	741.3	671.3
2017	1,128.7	800.3	747.7	676.6
2018	1,148.3	825.8	757.2	690.6



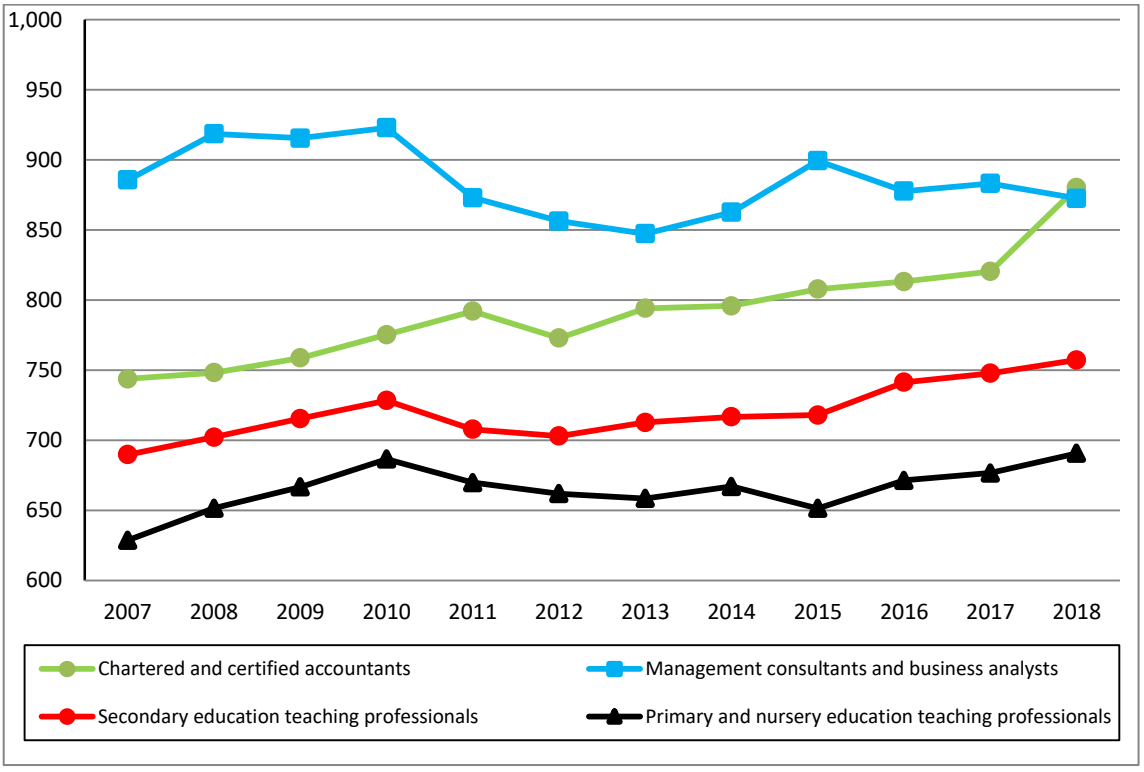
D Legal professionals (average gross earnings £pw)

Occupational groups	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	1,020.8	689.7	628.6
2008	1,066.5	702.2	651.5
2009	1,098.2	715.4	666.7
2010	1,085.2	728.3	686.5
2011	1,085.6	707.8	669.7
2012	1,040.6	703.0	661.9
2013	1,081.4	712.7	658.4
2014	1,084.3	716.7	667.0
2015	1,082.6	717.9	651.4
2016	1,111.1	741.3	671.3
2017	1,173.9	747.7	676.6
2018	1,184.6	757.2	690.6



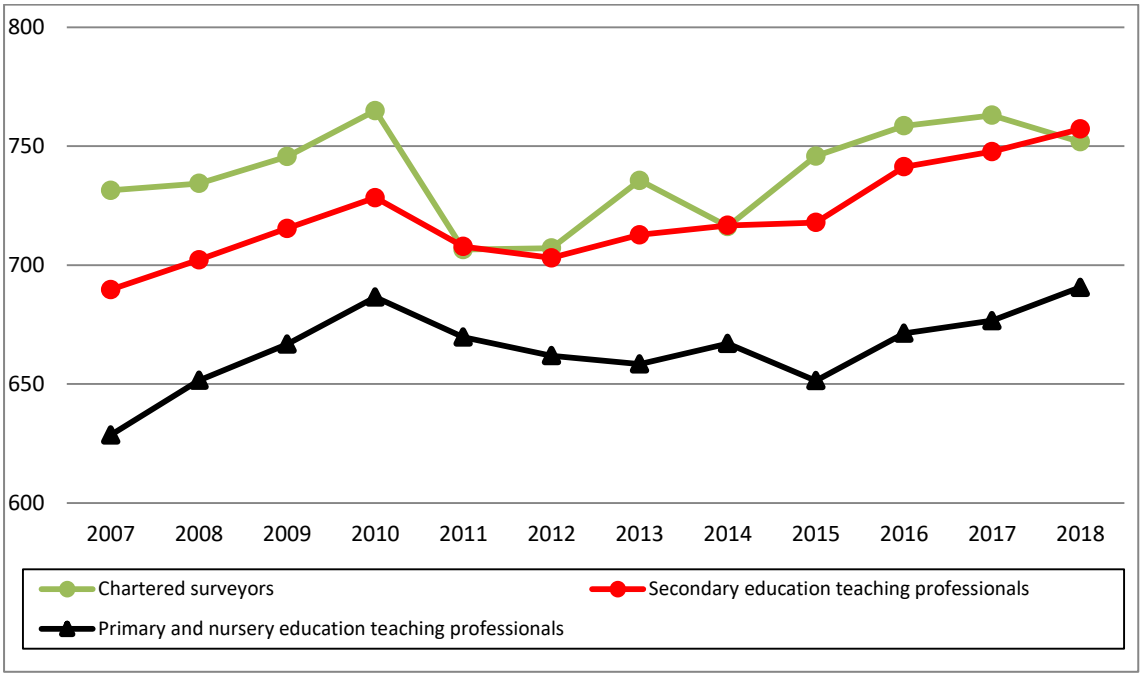
E Business, Research and Administrative professionals (average gross earnings £pw)

Occupational groups	Chartered and certified accountants	Management consultants and business analysts	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	743.7	885.6	689.7	628.6
2008	748.2	918.5	702.2	651.5
2009	758.7	915.5	715.4	666.7
2010	775.3	922.9	728.3	686.5
2011	792.0	873.0	707.8	669.7
2012	772.9	856.3	703.0	661.9
2013	794.1	847.3	712.7	658.4
2014	795.8	862.6	716.7	667.0
2015	807.8	899.4	717.9	651.4
2016	813.1	877.7	741.3	671.3
2017	820.4	883.2	747.7	676.6
2018	880.2	872.5	757.2	690.6



F Chartered Surveyors (average gross earnings £pw)

Occupational groups	Chartered surveyors	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	731.4	689.7	628.6
2008	734.3	702.2	651.5
2009	745.6	715.4	666.7
2010	764.9	728.3	686.5
2011	706.5	707.8	669.7
2012	707.1	703.0	661.9
2013	735.6	712.7	658.4
2014	716.2	716.7	667.0
2015	745.8	717.9	651.4
2016	758.5	741.3	671.3
2017	763.0	747.7	676.6
2018	751.8	757.2	690.6



Appendix 9: Use of ASHE data

For the purposes of our analysis we have used full-time basic weekly and gross weekly earnings data from the Annual Survey of Hours and Earnings (ASHE), produced by the Office for National Statistics (ONS). As far as possible, we have tried to be consistent in collating occupational data for the period 2007 to 2018.

The Standard Occupational Classification (SOC) codes have also changed once since 2007. As a result, our analysis incorporates codes from SOC 2000 and 2010. This means that some of the occupational definitions featured in this report have changed in the last 8 years, although we do not think this detracts from the overall robustness of the datasets. Details of changes to some of the occupational definitions over time are shown below.

SOC	Applies to the years	Occupational definition variations	Definitions used in current report
2000	2002-2010	Physicists, geologists and meteorologists	Physical scientists
		Pharmacists/pharmacologists	Pharmacist
		Management consultants, actuaries, economists and statisticians	Management consultants and business analysts

Factors to bear in mind when interpreting results

The ONS provides guidance on data validation and quality assurance including sections on accuracy, sampling and non-sampling errors as well as the likely effect of data revisions. It points out that in terms of accuracy – The degree of closeness between an estimate and the true value – its estimates are subject to various sources of error. Total error consists of two elements, the sampling error and the non-sampling error.

Sampling error

Sampling error occurs because estimates are based on a sample rather than a census. ASHE estimates this error through coefficients of variation (CV) which are published alongside all ASHE outputs. The CV is the ratio of the standard error (SE) of an estimate to the estimate itself, expressed as a percentage. Generally speaking, when all other factors are constant, the smaller the CV value, the higher the quality of the estimate.

In published tables, ASHE uses colour coding as a quick reference guide to the CV of the estimates; estimates with CVs less than or equal to 5% are published with no colour fill; estimates with CVs between 5% and 10% are published with a light green background; estimates with CVs between 10% and 20% are published with a dark green background; cells for which estimates have been suppressed on quality or disclosure grounds are also filled in dark green as shown here.

Key	Statistical robustness
CV <= 5%	Estimates are considered precise
CV > 5% and <= 10%	Estimates are considered reasonably precise
CV > 10% and <= 20%	Estimates are considered acceptable
x = CV > 20%	Estimates are considered unreliable for practical purposes

It should be noted that at low levels of disaggregation, high coefficients of variation imply estimates of low quality. For example, for an estimate of £400 with a CV of 10%, the true value is likely to lie between £321.60 and £478.40. This range is given by the estimate +/- 1.96 x the standard error. Where these ranges for different estimates overlap, interpretation of differences between the relevant domains becomes more difficult.

Non-sampling error

ASHE statistics are also subject to non-sampling errors. For example, there are known differences between the coverage of the ASHE sample and the target population (that is, all employee jobs). Jobs that are not registered on PAYE schemes are not surveyed. These jobs are known to be different from the PAYE population in the sense that they typically have low levels of pay. Consequently, ASHE estimates of average pay are likely to be biased upwards with respect to the actual average pay of the employee population.

Non-response bias may also affect ASHE estimates. This may happen if the jobs for which respondents do not provide information are different from the jobs for which respondents do provide information. For ASHE, this is likely to be a downward bias on earnings estimates since non-response is known to affect high-paying occupations more than low-paying occupations.

Finally, ASHE results tables do not account for differences in the composition of different 'slices' of the employee workforce. For example, figures for the public and private sectors include all jobs in

those sectors and are not adjusted to account for differences in the age, qualifications or seniority of the employees or the nature of their jobs, all factors which may affect how much employees earn.

Various procedures are in place to minimise errors in returned data. Returns undergo a range of checks which include validation against previous returns and expected values, selective editing (a technique for prioritising suspicious values for follow-up based on their impact on published results) and re-contacting businesses for verification. Similar checks are also made at the aggregate level for key results.

Revisions

Provisional results are published in the November following the survey reference date. Revised results are then published one year later alongside the following year's provisional results. The revised results take account of late returns to the survey and amendments to data resulting from validating returns to the current year's survey.

Revisions are usually quite small, with revision at the UK level typically around 0.1%. However, estimates for domains with smaller sample sizes are susceptible to larger revisions.