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

A Report for NASUWT

This report was researched and written by Incomes Data Research (IDR) for the NASUWT.

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1. Overview

1.1. Background and what the report covers

Each year that we examine the situation facing the teaching profession, the issues surrounding pay, recruitment and retention appear to worsen and 2019 is no exception. In fact, often we start by providing some background by considering the findings of the most recent School Teachers' Review Body (STRB) report and this year, the arguments in favour of significant pay rises for teachers have been made more forcefully than at any time in the last decade or more . In previous years, the Review Body has emphasised the growing problems facing teaching but has always tempered its recommendations because of the proviso from Government that any pay increases must align with set financial constraints and affordability.

This year, reading the STRB report one can sense a change in tone to one of greater urgency. For example, the STRB pay recommendation of 2.75% was above the Government's limit of 2%. According to the STRB, 'The Department did not make any specific proposals on the level of pay uplift for teachers but stated that a 2% increase in per teacher pay was affordable nationally. The Secretary of State told us that we should not assume that any additional funding would be provided to schools by the Government for teachers' pay from September 2019.'

The Review Body appeared to be addressing this when it said in its recommendations that: "Any assessment of affordability needs to take into account the costs imposed on the system of not recruiting and retaining enough teachers". It added that restraint may lead to "financial savings in the short term, but these are likely to be outweighed by additional costs and reduced productivity across the education system in the longer term".

It added that failure to act effectively so that the pay framework is allowed to decline further relative to the wider labour market could mean that more radical, and potentially more expensive, action needs to be taken in the future. In conclusion it stated that its latest pay recommendation represents a cautious improvement in the competitiveness of the teachers' pay framework and that the September 2019 increase can only be a step in a multi-year process.

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.

Last year, the study included a change in the period under focus compared to previous reports, examining the years since 2007 rather than 1998. One reason for the change was that the economic and working environments had 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 more difficult. This year, the shorter period, from 2007 to the present year, continues to be our focus.

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 13-year period from 2007 to 2019. 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 2019.

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.

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. For this reason they are excluded from the analysis of quartile levels.

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 professionals fell between 2010 and 2011.

The final caveat is that while the job groups examined have been chosen specifically because they are well-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 an 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 2019 graduate recruitment and salary survey 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 13 years – 2007, 2013 and 2019 – 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 13 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, in most years between the recession of 2009/10 and 2018, teachers in England did not receive significant real-terms pay increases. The exceptions were during the recession in 2009 and 2010 when teachers received pay awards under a previously negotiated long-term deal resulting in increases of 2.3%, ahead of the median pay awards for the whole economy at 1.8% (2009) and 2% (2010).

Last year, a shift occurred with some teachers receiving a real-terms increase. At that point, the main pay range in England was uplifted by 3.5%, affecting around two-fifths of English teachers. Those on the upper and leadership ranges were awarded lower increases of 2% and 1.5% respectively. The Government continued to insist that, except for teachers and leaders on the minima of their respective ranges or group ranges, schools must determine – in accordance with their own pay policy – how to take account of the uplift to the national framework in making individual pay progression decisions.

. This year, the increase to all ranges was 2.75%, above both the CPI and RPI levels which, at the time, were around 1.6% and 2.5% respectively.

Over the period since 2011, as well as an overall real-terms erosion of pay, increases for teachers in England have also mostly trailed those received by other occupational groups. 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 (although teachers on the upper range only received 1%).

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, a significant departure from the previous pay system.

1.4. Pay rankings

The latest available NASUWT survey of English members' views from 2019 showed that 74% of teachers were seriously considering leaving their jobs while 67% 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. These results are based on individual 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 in England is comparatively low.

Table 1 below, 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 year. In 2019, for instance, secondary teachers were ranked eighth (out of twelve) while primary and nursery school teachers were positioned eleventh.

Table 1 Ranking of median gross earnings levels of selected graduate professions in England 2007, 2013 and 2019

Group	2007 rank	2013 rank	2019 rank
Secondary education teachers	6	9	8
Primary and nursery education teachers	12	12	11

Source: ASHE

Table 2 shows average earnings, and measured in this way the teachers' rankings were even lower. In 2019, for instance, secondary teachers were placed tenth 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 twelfth and tenth respectively based on median figures, and eleventh and ninth 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 2019

Group	2007 rank	2013 rank	2019 rank
Secondary education teachers	9	11	10
Primary and nursery education teachers	12	12	12

Source: ASHE

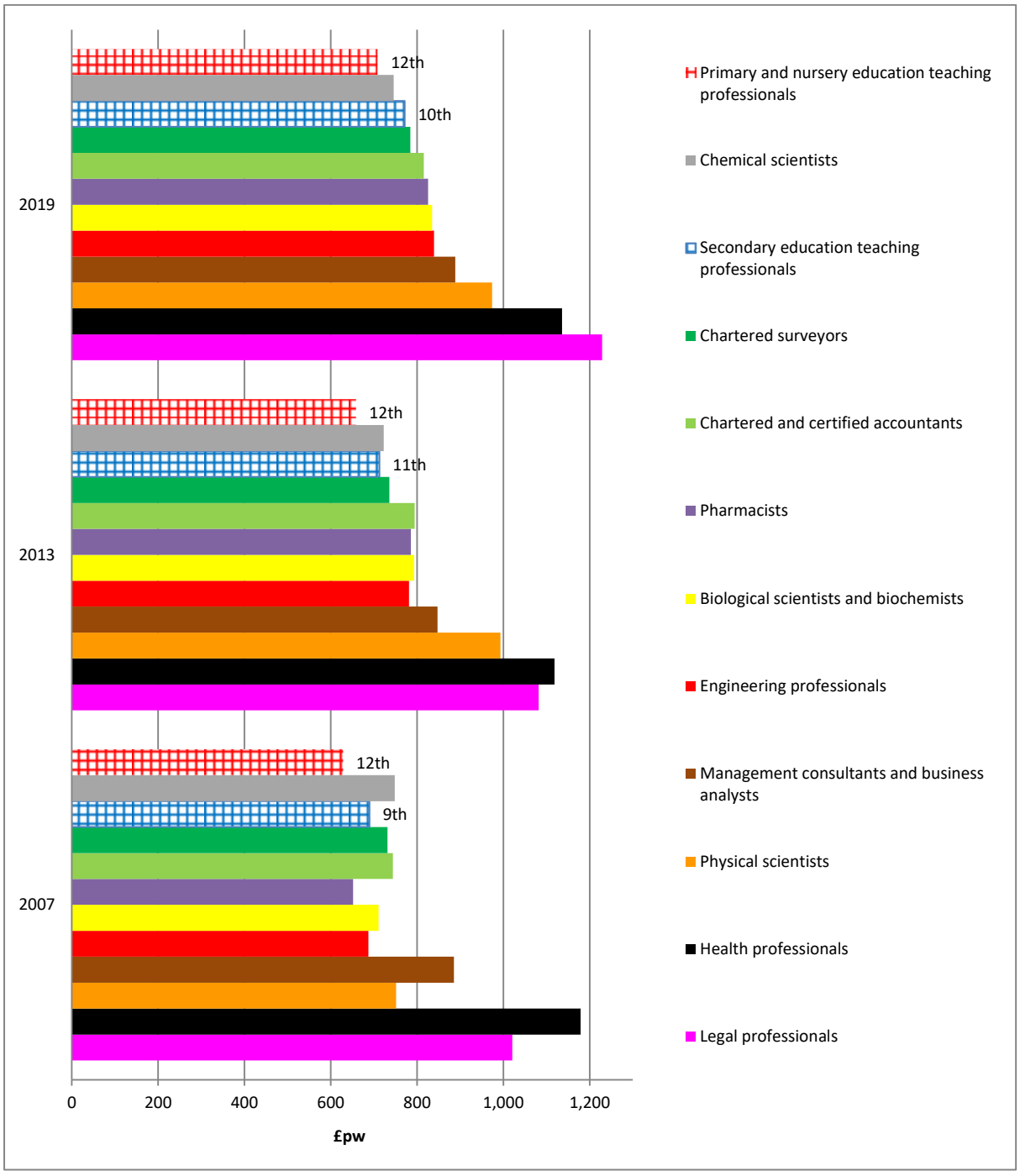
When analysing pay data, for most professional and managerial occupations, average pay figures usually exceed medians because, in comparison to non-professionals, such groups often contain a higher proportion of senior employees with longer job tenure and therefore comparatively higher pay levels. This is also true for the two teaching groups in England although the differences are very small. For example, the primary teacher 2019 average gross earnings figure is only 0.9% greater than the corresponding median while the equivalent differential for secondary school teachers is just 2.2%. By contrast, the average-median differentials for nine of the other 10 professions ranged from 4.5% for engineers to 28% for legal professionals. The only exception was the pharmacist group where the average was 0.8% lower than the corresponding median.

These differences mean that it is clear that while median earnings for teachers in England are relatively uncompetitive compared to those for other professions, an analysis of averages produces an even less favourable picture from a teaching perspective. The pay rankings based on average gross earnings for secondary and primary teachers, positioned at tenth and last place, are lower than the corresponding placings, eighth and eleventh, when measured according to median gross earnings.

1.5. Magnitude of pay gaps

Ranking pay levels as in the tables above provides some indication of where teaching pay is positioned relative to other graduate professions but it does not provide any insight into the differentials that currently exist between all the groups examined.

Graph 1 Comparison of average gross earnings of all comparator graduate professions including school teachers in England: 2007, 2013 and 2019



Source: ASHE

Graph 1 above demonstrates the pattern of differentials and shows that for certain professions they 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 professions were followed by two other professions – physical scientists and management consultants – that featured near the top end of the pay table. Slightly below these were earnings for engineers, biological scientists,

pharmacists and accountants with secondary teachers, chartered surveyors, chemical scientists and primary and nursery teachers at the bottom of the earnings rankings for 2019.

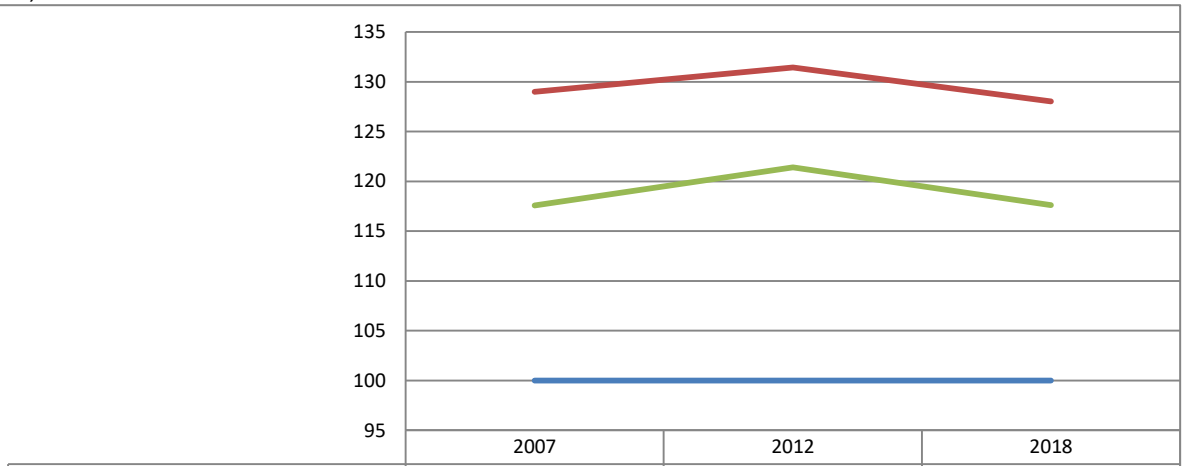
1.6. Teachers' earnings persistently lag behind

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

The results show very significant differentials between earnings for both teaching groups and those for the combined professions group. In 2019, for example, average gross earnings for all comparator professions were 17.6% above those for secondary school teachers and 28% ahead of average earnings for primary school teachers.

Between 2007 and 2013 there was a widening in the gap between both teaching groups and those for the combined comparator group. In contrast, since 2013, the trend has reversed somewhat with a slight narrowing of the earnings differentials. Despite this, throughout the period since 2007, i both teaching groups have persistently lagged behind their comparators over the full 13-year period.

Graph 2 Indexed average gross earnings lead of all comparator graduate professions over school teachers: 2007, 2013 and 2019



	2007	2012	2018
School teachers	100	100	100
Average position of other professions versus primary and nursery school teachers	129.0	131.4	128.0
Average position of other professions versus secondary school teachers	117.6	121.4	117.6

Source: ASHE

This type of analysis has its weaknesses, however, because combining all the earnings data for the other occupations into one aggregate figure risks the resulting amount being heavily influenced by particularly high or low earnings. 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.

Table 3 below addresses this by presenting the individual pay differentials between the two teaching groups and each of the other graduate professions in 2019. It illustrates that median and average gross weekly earnings for teachers in England trailed those for almost all the other graduate professions.

To provide 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 – 87.5% – and also that, in many cases, the differentials are significant, especially when the average levels are considered.

Table 3 Median and average gross weekly earnings differentials of 10 graduate professions versus teachers in England 2019

Group	Average gross weekly pay £pw	Differential with secondary teachers %	Differential with primary and nursery teachers %	Median gross weekly pay £pw	Differential with secondary teachers %	Differential with primary and nursery teachers %
Legal professionals	1,228.5	59.2	73.4	959.4	27.0	36.6
Health professionals	1,136.0	47.2	60.3	932.3	23.5	32.7
Physical scientists	973.7	26.2	37.4	872.8	15.6	24.3
Management consultants and business analysts	888.7	15.2	25.4	815.7	8.0	16.1
Engineering professionals	839.0	8.7	18.4	802.9	6.3	14.3
Biological scientists and biochemists	834.8	8.2	17.8	756.9	0.2	7.8
Pharmacists	825.8	7.0	16.5	832.7	10.3	18.6
Chartered and certified accountants	815.8	5.7	15.1	753.2	-0.3	7.2
Chartered surveyors	784.2	1.6	10.7	732.9	-3.0	4.4
Chemical scientists	746.1	-3.3	5.3	632.5	-16.2	-9.9
Secondary education teaching professionals	771.5			755.2		
Primary and nursery education teaching professionals	708.6			702.3		

Source: ASHE

Taking a look at the median amounts, there were just three professions that had gross median earnings that were lower than at least one of the teaching groups. These were chartered accountants, surveyors and chemical scientists where median gross earnings were lower than those of secondary teachers. For each, the differentials stood at 0.3%, 3% and 16.2% respectively in favour of the teaching group.

When amounts are compared with the median gross earnings of primary and nursery teachers it was only the chemical scientist group that had lower pay levels, with a negative differential of 9.9% in 2019. It should be noted however, of all the 2019 figures, the chemical scientist median fell into the ONS' least robust statistical category due to a small sample size.

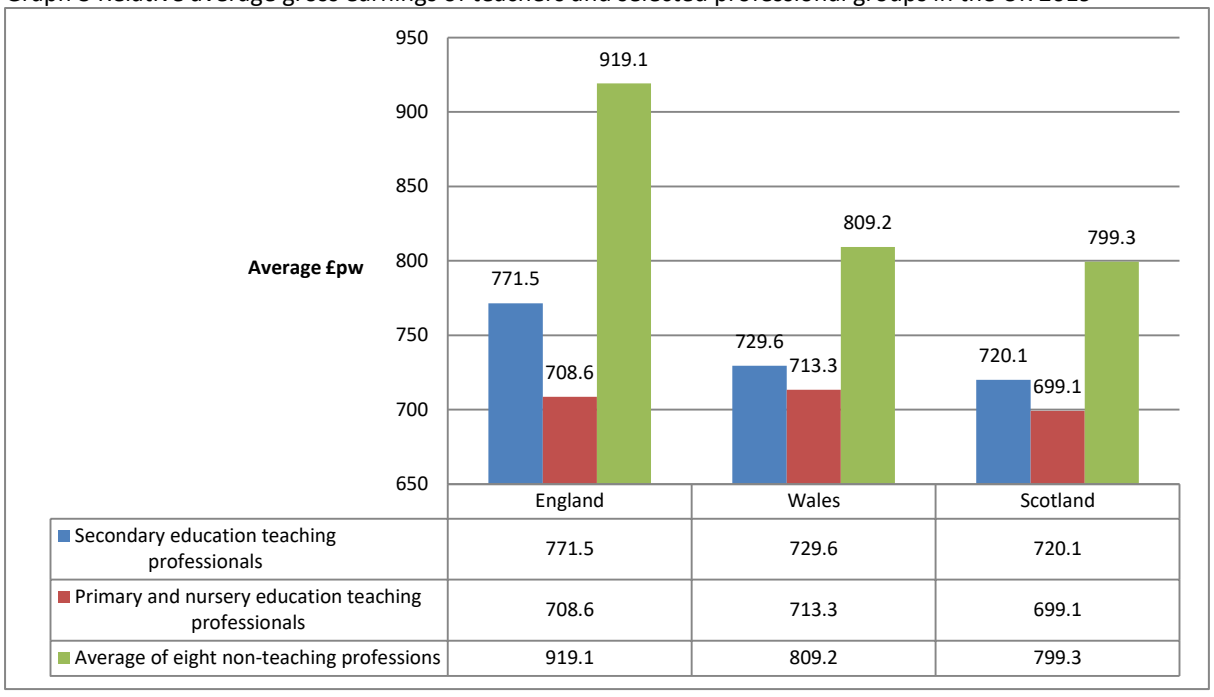
An analysis of averages presents a different picture with the two teacher gross earnings figures trailing every non-teaching profession with the exception of chemical scientists where secondary teachers had a lead of 3.3% in 2019. For primary teachers, the chemical science figure was still 5.3% above the corresponding teachers' figure.

The differentials in favour of many of the non-teaching groups were substantial. For instance, the average for legal professionals was nearly 60% higher than that of secondary teachers and over 70% higher than the equivalent primary and nursery school figure. Similarly, the other notably high-earning group, health professionals, had a lead of 47.2% over secondary school teachers and over 60% above the corresponding primary and nursery school amount.

1.7. 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 3 Relative average gross earnings of teachers and selected professional groups in the UK 2019



	England	Wales	Scotland
Secondary education teaching professionals	771.5	729.6	720.1
Primary and nursery education teaching professionals	708.6	713.3	699.1
Average of eight non-teaching professions	919.1	809.2	799.3

Source: ASHE

Graph 3 above 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 2019.

The graph illustrates that average gross earnings of both teaching groups are significantly below those of the non-teaching ones in England, Scotland and Wales. In addition, the figure for secondary teachers in England was greater than the corresponding amounts for Wales and Scotland. In contrast, the highest primary and nursery figure was found in Wales, marginally ahead of England and then Scotland. Despite these differentials, owing to the much higher non-teaching pay levels in England, the gap between teachers' and non-teachers' earnings is most stark in England.

1.8. Analysis of quartiles

A narrow focus on median and average amounts is useful in understanding the degree of disparity between typical pay levels in the teaching and non-teaching groups but to gain a better idea of the broader picture it is helpful to look at other statistics. The fact that for almost every job, the average amounts were higher than the equivalent medians implies that each of the professions' earnings distributions contain a greater proportion of relatively higher-paid employees. Beyond this, however, we do not know the full extent or shape of the earnings ranges for each profession.

Thankfully, where sample sizes permit, the ONS provides various other statistics that do allow a greater insight into the earnings of teachers and other professionals at the lower and higher ends of their respective pay distributions. Last year, to explore further the earnings situations faced by employees at either ends of the earnings scales we extended our analysis to include lower and upper quartile gross earnings levels and this year we do so again.

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 more senior roles at higher salary levels are considered. Chapter 6 provides the full quartile analysis but a summary of the main findings is presented here.

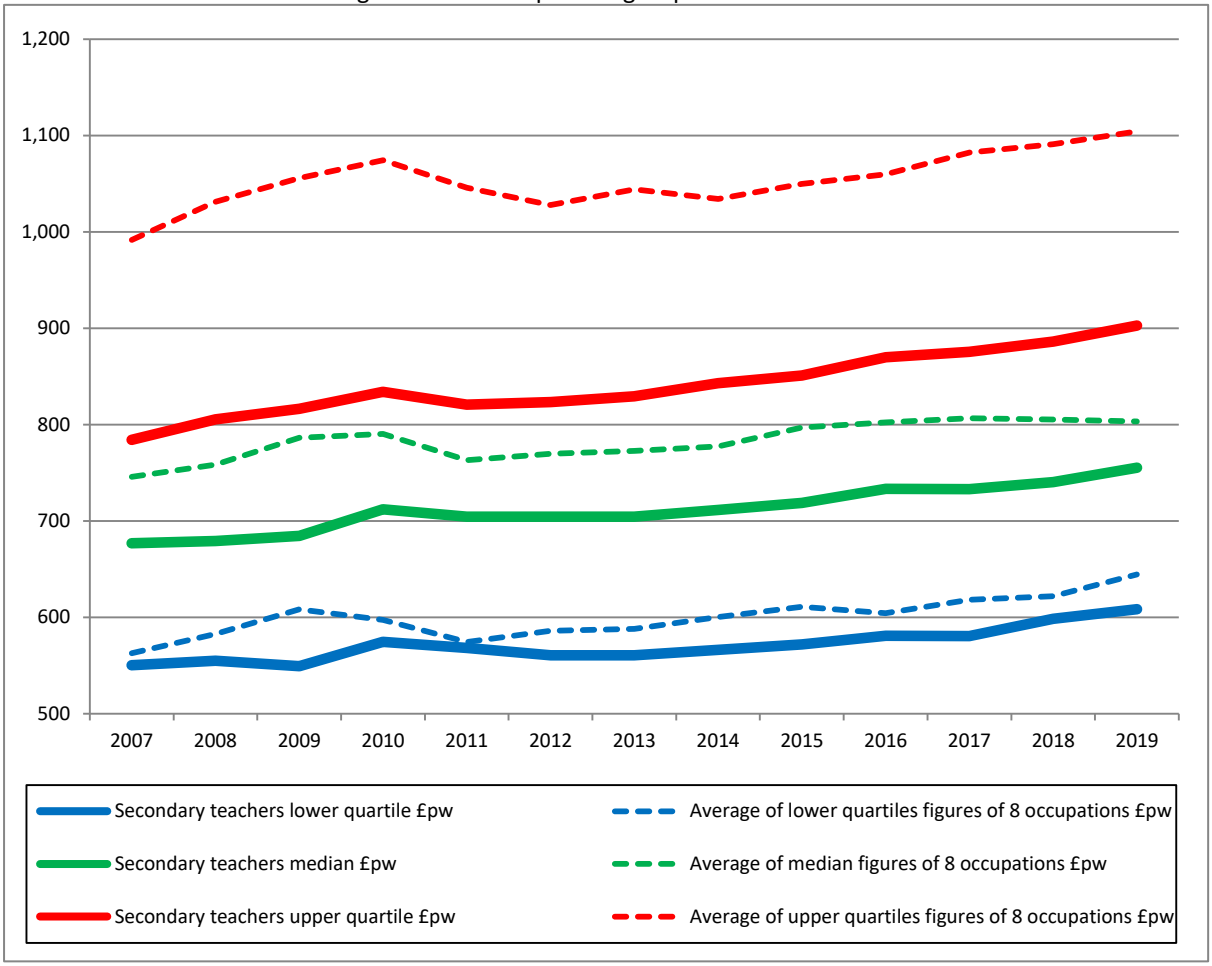
Graph 3 below demonstrates the aggregate picture by plotting the difference between the lower quartile, median and upper quartile gross earnings levels for secondary school teachers from 2007 to 2019 against the combined aggregate equivalent figures for the eight non-teaching comparators that had quartile data available in every year. The combined figures are calculated by taking the averages of each profession's lower quartile, median and upper quartile which, in the absence of knowing the whole distribution of data for each job, provide a broad indication of the trends found towards the top and bottom of the combined earnings ranges over the period.

In parallel with what we also found last year, the graph shows that all three figures – lower quartile, median and upper quartile – were greater for the combined non-teaching comparator group than for secondary school teachers throughout the period. More notable, perhaps, is that the gap between the teacher and combined group levels widens as we travel higher up the earnings range.

For example, in 2019 the non-teaching lower quartile figure, at £644.50 per week, was only 6% higher than the equivalent teaching figure of £608.30. By contrast, the gaps for the medians and

upper quartiles were larger, standing at 6.4% and 22.4% respectively in favour of the non-teaching groups. At the median, the non-teaching combined figure was £803.30 while the equivalent for teaching was £755.20. At the upper quartile, the difference was over £200 per week with the figures standing at £1,104.40 and £902.6 respectively.

Graph 4 Comparison of lower quartile, median and upper quartiles gross earnings per week for secondary school teachers and non-teaching combined comparator group 2007 to 2019

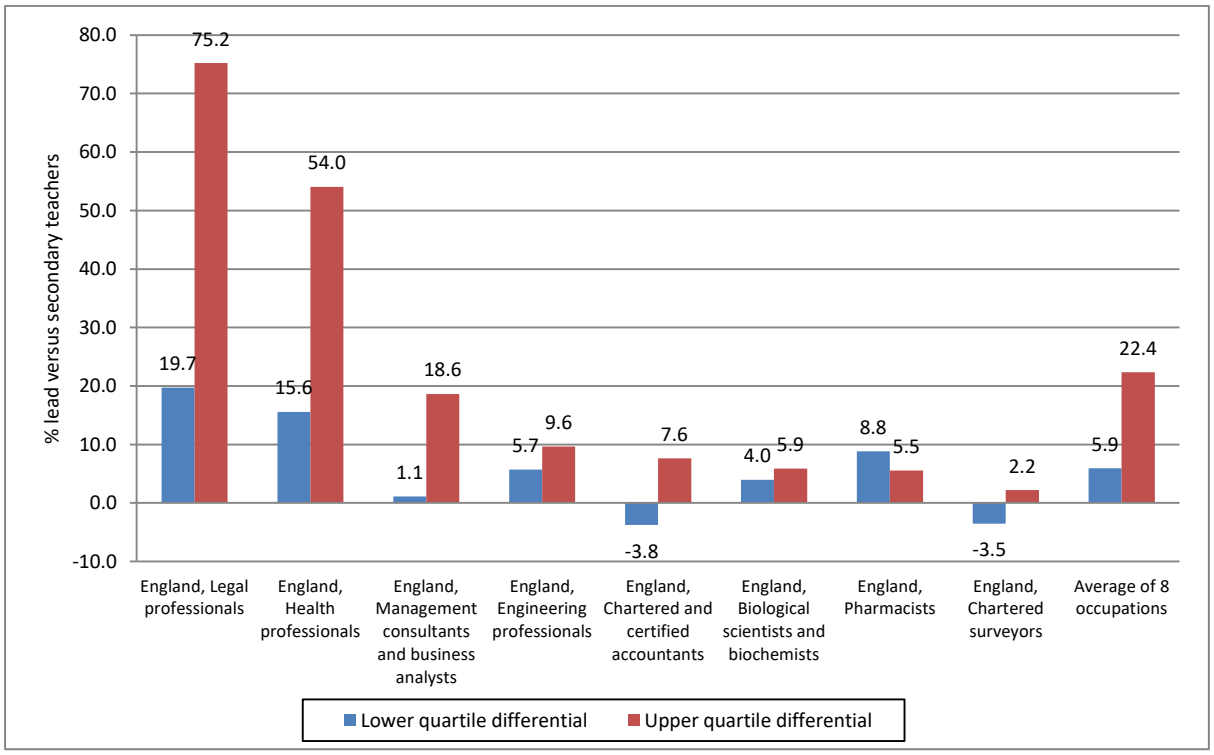


Source: ASHE

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 engineers – and the two highest-earning – legal and health 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 of one profession – chartered surveyors – where the upper quartiles for both professions were very similar. For all the other non-teaching jobs, secondary teachers' 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 75% and 50% for legal and health professionals as shown below in Graph 5.

Graph 5 Comparison of lower and upper quartile gross earnings for eight professions with secondary school teachers 2019



Source: ASHE

The graph plots the lower and upper quartile differentials for each of the eight non-teaching professions for which data was available against the equivalent secondary teacher figures in 2019. It shows that the secondary school teacher lower quartile was smaller than the equivalent figures for

six of the comparator professions and higher in the case of two, most notably chartered accountants, where the differential was greatest at 3.8%. Variations were greater when the upper quartile figures were examined, however, with differences ranging between 2.2% in favour of chartered surveyors and 75.2% for legal roles.

The pattern exhibited by the combined occupational quartile analysis is not overly influenced by the earnings of 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 at this level are proportionately greater than those at lower quartile levels where teachers' earnings nonetheless also tend to trail those of most of the other professions.

1.8 Decile and further analysis

The ONS also provides statistics showing the earnings levels at different points on the pay scale for each professional group. For example, as well as medians, averages and quartiles, ONS data shows earnings of individuals placed at 10% intervals throughout the whole pay range. As a result, it is possible to extend the analysis further by examining some of these points.

As with the quartile analysis, the full findings are outlined in Chapter 6 but the findings are summarised in Table 4. What the table shows is the relative positions of primary and secondary school teachers for all the statistical points above the median in 10 percentage point intervals (and the upper quartile). This demonstrates that both teaching groups fall predominantly at the bottom of the comparator table in each percentile. Moreover, if we only consider the highest-paid members of each profession – the top 25% – the two teaching groups are the lowest-paid in every case

Table 4 Position of both teaching groups when measured by gross earnings at upper pay levels

	60th percentile pay level	70th percentile pay level	75th percentile pay level	80th percentile pay level	90th percentile pay level (highest shown)
Primary and nursey teacher position	9th	12th	10th	10th	5th
Primary and nursery teacher earnings (£pw)	£751	£785	£810	£855	£977
Secondary teacher position	11th	10th	9th	9th	4th
Secondary teacher earnings (£pw)	£808	£866	£903	£940	£1,040
Number of jobs providing data	12	12	10	10	5
Range of earnings values in non-teaching (£pw)	£684 to £1,200	£845 to £1,448	£923 to £1,581	£977 to £1,725	£1,188 to £2,062

Source: ONS

Based on these and the quartile findings, it is clear that while differences in earnings between teachers and other professions are a source of concern at average and median levels, the differences are even greater at higher earnings levels. These findings have important implications because in the past, the review body's focus has often been on issues at the bottom end of the teaching pay range with recent and proposed pay awards focused specifically on new joiners. While issues at the lower end of the pay scale persist, this analysis shows that relatively low gross earnings in teaching exist at all levels of the pay range and the greatest differentials are actually found in the upper echelons, a point that the STRB itself mentioned in its latest evidence.

1.9. Key findings

School teachers' earnings

- As found in previous years, based on ONS data, earnings for teachers in England compare unfavourably with those for other graduate occupations.
- The differentials are significant at median levels but worsen for average amounts while an analysis of upper quartile and decile positions shows the gaps get increasingly wider
- When measured by median basic earnings, primary school teachers were ranked eleventh out of twelve comparable graduate professions while secondary teachers were positioned ninth
- In terms of average basic earnings, the positions fell somewhat with primary and nursery teachers falling to twelfth while secondary teachers were again placed ninth

- Once additional elements of pay were accounted for, an analysis of gross earnings illustrated a similar pattern with primary and nursery teachers positioned eleventh and secondary teachers eighth based on median values
- When measured by averages, the positions dropped to tenth and twelfth respectively
- The average differentials in favour of many of the non-teaching groups were substantial with some nearly 60% higher than those of secondary teachers and over 70% above the equivalent primary and nursery school figures
- An analysis of lower quartile gross earnings levels shows that the teacher amount was 5.9% smaller than a combined unweighted figure based on eight non-teaching graduate professions
- At the median level, this gap grew slightly to 6.4% while it increased further to 22.4% when the upper quartile level was scrutinised illustrating that differentials with other professions' earnings widen higher up the pay scale
- More specifically, the spread of secondary school teachers' earnings, from lower quartile to upper quartile, is only on a par with that of one profession – chartered surveyors
- For all the other non-teaching jobs, secondary teachers' earnings generally trailed behind, especially when upper quartiles were considered
- In fact, looking at all the non-teaching graduate professions' gross earnings separately, where data is available, an examination of the top 25% of earners shows that the two teaching groups are consistently placed at the bottom of the pay league
- These findings echo the conclusions on pay from 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 has been steady at 9.9% since 2015, although this level is comparatively high, historically
- The leaving rate of teachers in the early years of their careers has also increased. For example, between 2011 and 2017, the percentage of teachers leaving within three years' service increased from 20% to 27%, while the percentage leaving within their first five years increased from 27% to 33% over the same period
- More broadly, since 2011, there has been a divergence between the rates of resignations and retirements, with a 45% increase in resignations, but a 51% decrease in retirements
- At more senior levels, the STRB found that the proportion of head teachers resigning has increased from below 18% in 2011 to 47% in 2017.
- Teacher numbers
- Over the whole period, between 2005 and 2018, the number of full-time equivalent primary and nursery teachers increased by just over 13% while secondary teacher headcount fell by 6.3%
- Initial teacher training recruitment targets for secondary schools were missed for the seventh year in a row
- According to the STRB, the number of official recorded full-time vacancies across state-funded schools in England reached 940 in 2017, the highest number recorded using the current methodology
- Within the headline total, secondary schools saw a continued increase in recorded vacancies, while primary schools saw a small reduction.

Pupil numbers

- Both secondary and primary and nursery school pupil numbers have started to exhibit an upward trend in the latest few years
- Pupil numbers as a proportion of the number of teachers shows an increase in class sizes and pupils per teacher since 2010.
- The latest data shows that the pupil-teacher ratio in primary and nursery schools stand at 21.2:1 compared to 16:1 in secondary schools. Both are among the worst across all EU countries
- Looking to the future, Department of Education projections forecast that between 2018 and 2027, the number of primary school pupils is forecast to fall by 112,000 whereas the number of secondary school pupils is forecast to rise by 418,000, a 14.7% increase.

2. Earnings for English school teachers in context

Those with responsibility for decisions on pay in teaching have to consider a broad spectrum of issues so it is worth examining in detail some of these to fully understand the current environment and the challenges faced by the profession. This chapter pulls together information from various other sources that highlight the present environment in terms of pay pressures, recruitment and retention, pupil numbers 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 as well as many other factors that affect the teaching profession. Most of the findings presented in the latest July 2019 report concern issues that have persisted for many years.

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 2.75% from September 2019. This was accepted by the Government. 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 was affordability but unlike in previous years there was a certain degree of push-back on this issue from the Review Body.

The STRB stated that: “An effective education system that delivers excellent pupil outcomes depends on having high-quality teachers and school leaders. Any assessment of affordability needs to take into account the costs imposed on the system of not recruiting and retaining enough teachers. Failing to prioritise teacher supply through an investment in pay may lead to financial savings in the short term, but these are likely to be outweighed by additional costs and reduced productivity across the education system in the longer term.”

This year’s report was characterised by a greater deal of urgency as it appeared that the STRB recognised that the situation currently faced by the teaching profession has reached a serious juncture. In the past, the STRB was more constrained by Government pay caps but this year it argued that ‘The latest uplift will make the whole pay framework more competitive relative to other

professional occupations, and improve the position of teachers' pay in relation to the wider economy and society'. It argued that it is: 'vital to do this in light of the compelling evidence about the deteriorating state of teacher recruitment and retention and of the significant challenges that schools will face in delivering excellent pupil outcomes in the coming years. If the pay framework is allowed to decline further relative to the wider labour market this year, the problems in teacher recruitment and retention will be exacerbated and require more radical, and potentially more expensive, action to be taken in the future.'

2.2. STRB summary findings

This year, the STRB took a slightly different approach from previous years by examining three groups of teachers at separate stages of their career. These included:

- Early career teachers
- Experienced teachers and middle leaders
- School leaders.

For early career teachers, those undertaking initial teacher training, newly-qualified or in their first five years of training the STRB found that starting salaries are lower than those available in other graduate professions. Moreover, the relative positions of the top and bottom of the main pay range for this group have deteriorated compared to other professional groups in the period between 2010/11 to 2017/18.

In terms of recruitment and retention, even the Department of Education said that recruitment at this level was a challenge, which contrasted with other parties who described the situation as a crisis.

The STRB also made a number of visits to schools to interview staff at various levels first-hand. From these discussions it became clear that schools believed they faced major problems in teacher recruitment, with particular difficulties for certain secondary subjects. They said that pay was often not the main factor in early career teachers' decisions to join the profession but appeared to be a more important consideration for career changers than for recent graduates.

Despite this, many early career teachers said that they were dissatisfied with their net earnings after pension contributions and student loan repayments were deducted. The STRB also spoke to some early career teachers who had decided to leave the profession or to work as teachers abroad. In these cases, the level of pay was central to their decisions.

For experienced teachers and middle leaders, the STRB found that the median earnings of staff between the ages of 31 and 60 were lower than those for staff of similar ages in other professional occupations across England. There was also a general pattern of these gaps increasing in recent years. Similarly, the relative positions of the minimum and maximum of the upper pay range has deteriorated in comparison to the distribution of earnings both for professional occupations and across the whole economy between 2010/11 and 2017/18.

In terms of retention rates, those leaving the profession at this stage of their career were fewer than those in the early stages. The Department of Education said that retention rates for this group of teachers had remained relatively stable in recent years and that teacher vacancy rates had remained low. In contrast, other parties said it was increasingly difficult to retain and motivate experienced teachers and that this can have more serious implications than simply losing teachers as these staff also provide valuable mentoring to less experienced teachers.

In fact, the STRB found that the number of official recorded full-time vacancies across state-funded schools in England reached 940 in 2017, the highest number recorded using the current methodology.[1]

When the STRB interviewed staff on their school visits they were told that teacher retention was a significant problem, with pay, alongside workloads, identified as a major cause of teacher wastage. Experienced teachers had mixed views about the level of pay they received with some saying that that they received a reasonable salary within their local labour market, while others stated that they saw opportunities to earn significantly more in other graduate professions. However, when taking account of the hours they were required to work, most felt that their earnings did not fairly reward them for their efforts.

When the situation affecting school leaders was explored, in terms of pay, the STRB said that the relative position of the minimum of the leadership group pay range had deteriorated in comparison to the distribution of earnings both across the whole economy and for professional occupations between 2010/11 and 2017/18.

[1]Despite this, some of the unions providing evidence said that this method of calculation was flawed as it only provided a snapshot of vacancies in November. The NASUWT also noted that the National Audit Office (NAO) had seen a potential for official vacancy figures to underestimate the current extent of unfilled posts across the system.

With regard to recruitment and retention of school leaders, reported numbers of leadership vacancies are small but there is considerable churn across the school system, with around 2,000 head teachers and 3,000 deputy or assistant heads leaving the service annually in recent years. As there are around 22,000 head teachers and 47,000 deputy and assistant heads in state funded schools in England, this suggests that the leaving rate for school leaders is in line with that for the profession as a whole. In addition, it reported that retention rates for head teachers have deteriorated in recent years.

In contrast, head teacher vacancy rates had remained low and relatively stable while the proportion of schools reporting head teacher vacancies or temporarily filled posts had fallen between 2010 and 2017. Despite this, parties representing local authorities, school governors and school leaders stated that there were significant difficulties in recruiting head teachers and other senior leadership posts with an erosion of pay levels for school leaders at a time when their roles were especially challenging cited as one of the main factors causing these difficulties.

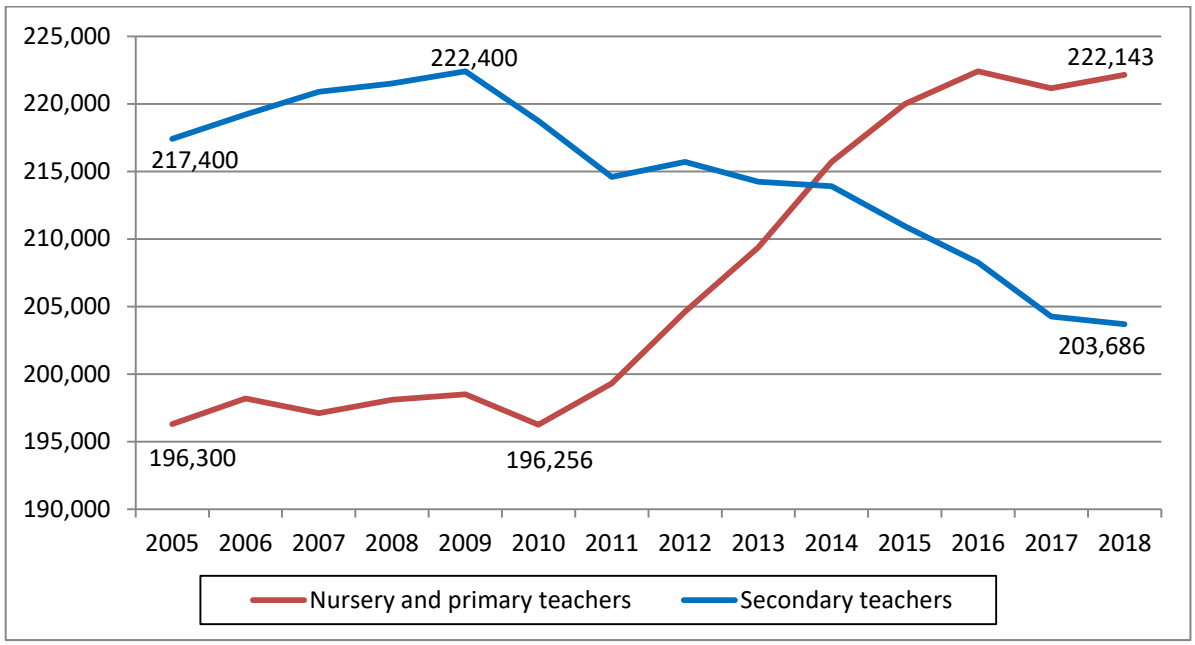
The STRB school visits showed that several leaders noted that they could earn more in senior roles in other professions while working considerably fewer hours. In addition, a number of assistant and deputy heads, particularly those in primary schools, told us that the differential between their pay and that of an experienced classroom teacher on the upper pay range was small. These leaders felt that they were not adequately rewarded for the additional responsibilities that they had taken on and that this reduced the incentive for others to progress into leadership roles. In fact, most classroom teachers and middle leaders told the STRB that they did not aspire to become head teachers. Alongside pay, accountability pressures and workload were identified as the main factors that put them off.

2.3 Teacher numbers

Data on actual teacher numbers is provided in Graph 6, which shows the numbers of full-time equivalent teachers in England between 2005 and 2018. The graph demonstrates that the number of primary teachers rose between 2011 and 2016 but fell away in 2017 before rising slightly in 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 2018 than the peak in 2010.

An examination of the trend between 2007 and 2018 illustrates that the number of primary and nursery teachers increased by just over 13% while secondary teacher headcount fell by 6.3%.

Graph 6 Number of full-time equivalent teachers in England 2005 to 2018



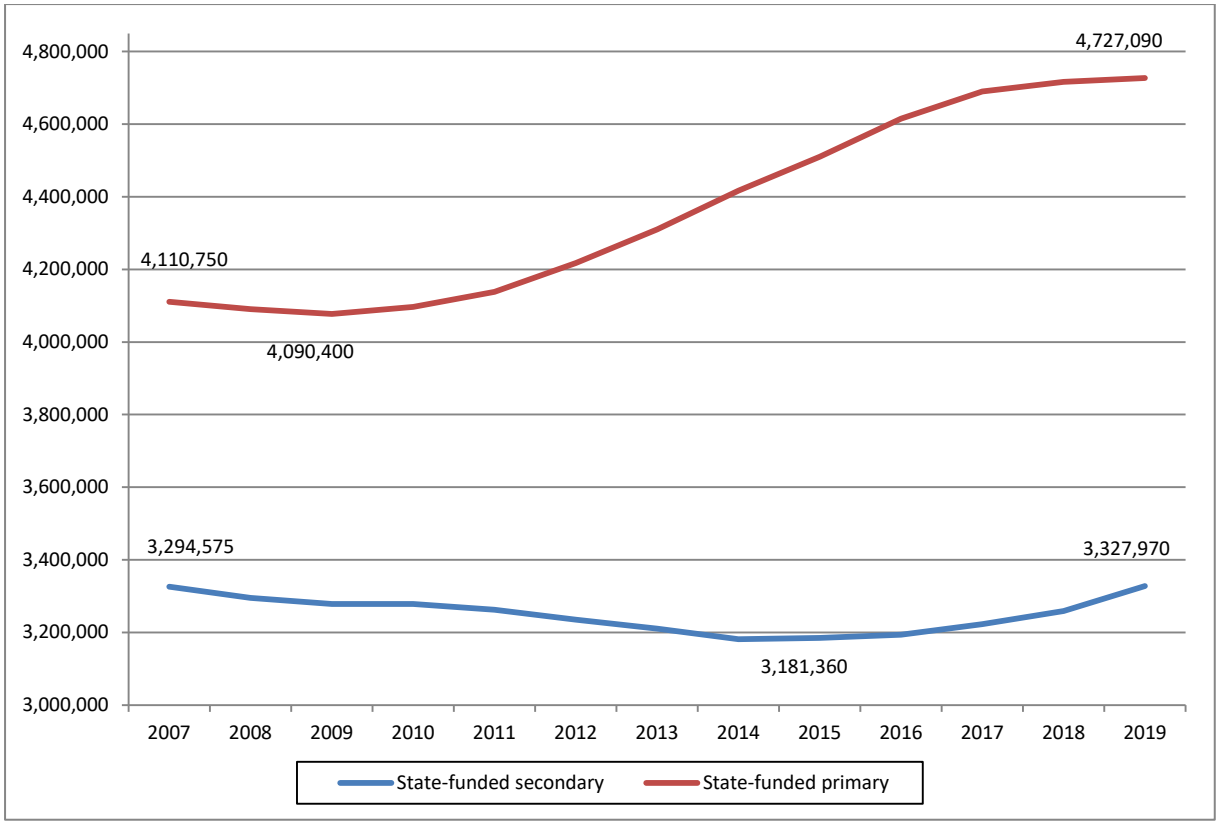
Source: School workforce in England: November 2018, Office for National

For secondary schools, the STRB reported that in terms of absolute numbers, there were at least 3,000 more leavers than joiners each year between 2015 and 2017. Moreover, more teachers left the profession than entered in every subject except mathematics and physics in 2017. In 2016, this was the case for all subjects except English, physics and history while in 2015, this was the case for all subjects except mathematics and history. In addition, the number of resignations from the profession, that is, those leaving for reasons other than retirement, continues to increase.

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. In contrast, the graph demonstrates that secondary school pupil numbers have been on an upward trend since 2015 while the number of corresponding teachers has fallen. Looking to the future, the STRB forecasts that pupil numbers will increase, substantially so in the secondary sector.

Graph 7 Number of pupils in England 2007 to 2019

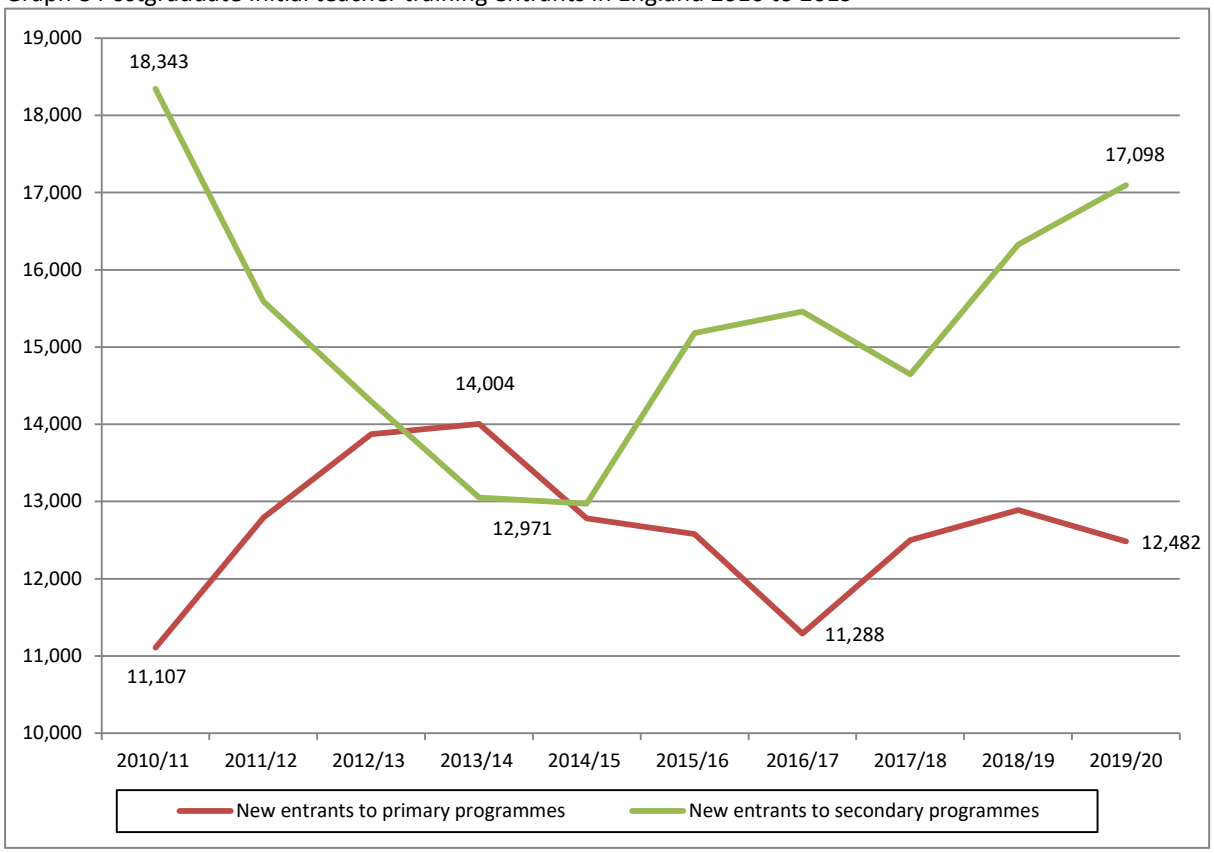


Source: Schools, pupils and their characteristics: January 2018, Office for National Statistics

2.4. Teaching entrants

As the STRB outlined, teacher training has also been a challenging area and Graph 8 displays information on the number of new teachers entering the teaching profession in the last decade. It shows that the numbers of new entrants to primary programmes increased during the first few years of the decade before falling slightly, rebounding 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 2013/14 – by nearly 30% – but this was followed by a reversal with rises that meant that planned numbers finished the period on an upward trend but still around 1,200 lower than when it began.

Graph 8 Postgraduate Initial teacher training entrants in England 2010 to 2019*

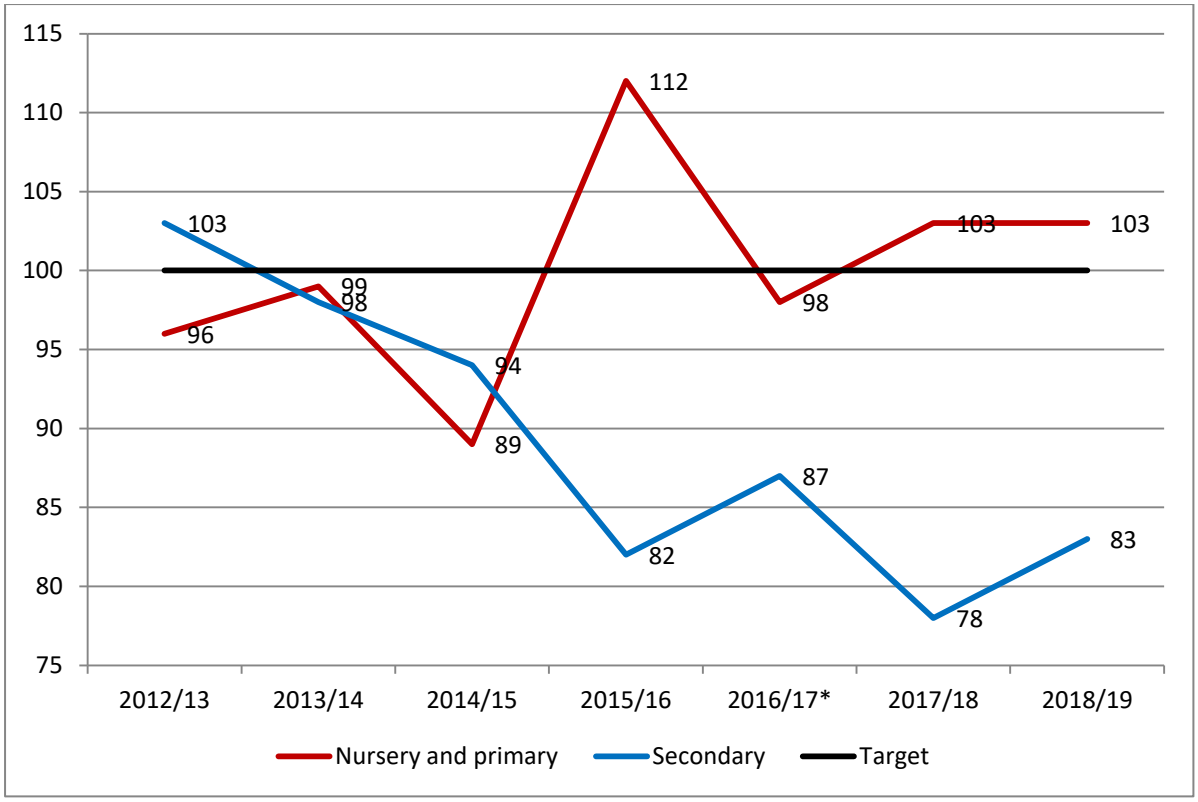


*Provisional including forecast registrations.

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

Examining the numbers of students entering teacher training courses only tells part of the story because we do not know how this relates to the numbers required. Graph 9 below shows the extent to which Department of Education targets have been achieved over the last few years. It illustrates that since 2013/14, the target for secondary teachers has never been achieved with the shortfall increasing up to 2017/18 before recovering slightly in the latest year for which data is available. For nursery and primary teachers, the picture is different with the targets met or bettered in each year since 2015/16 although this is against a background of relatively stable pupil numbers in these schools.

Graph 9 Percentage of English recruitment target levels met 2012 to 2019



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

2.5. 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 to be a good indicator of educational quality.

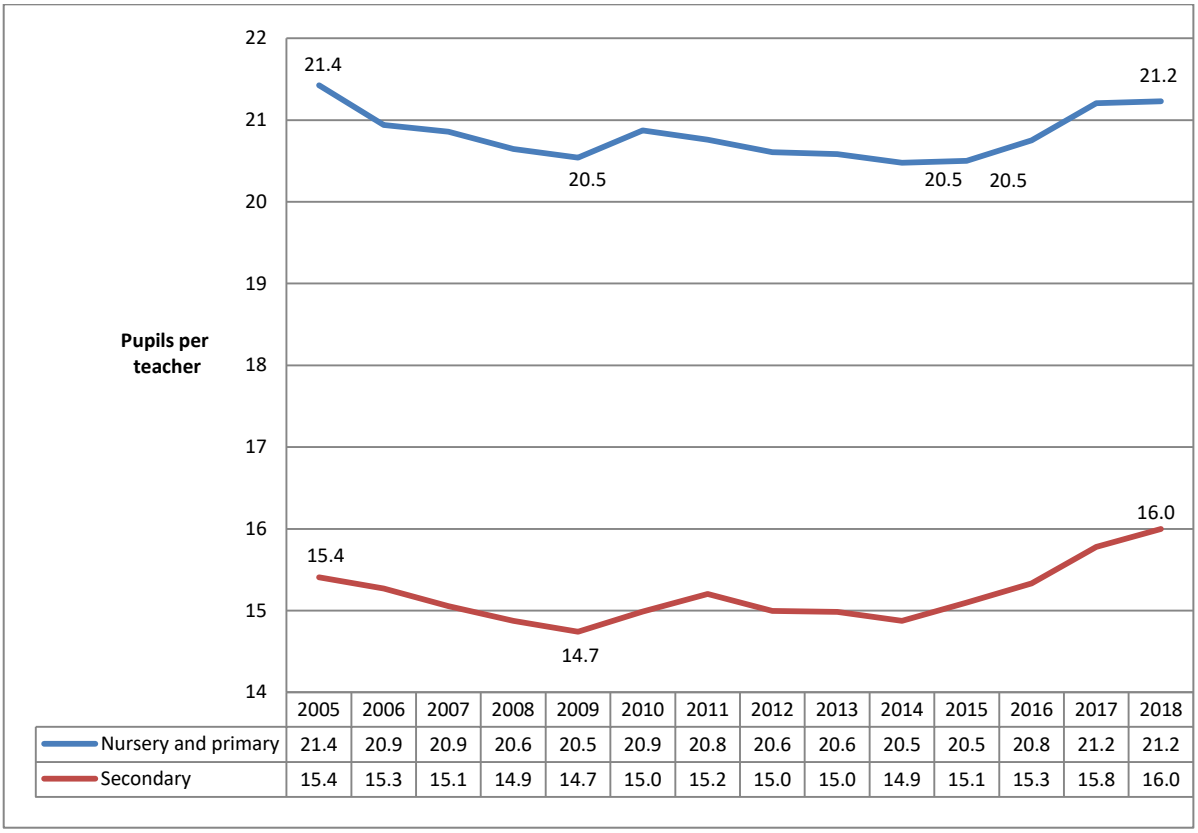
From the graphs above it is clear that pupil numbers are increasing, particularly in secondary schools, whereas teacher headcount is dropping in secondary schools and has risen slightly in primary and nursery schools. The effect, as illustrated in Graph 10 below, is that the number of pupils per teacher is currently rising in primary and nursery schools whereas it has levelled out in the last two years in secondary schools.

The graph tracks the pattern of change in the proportion of pupils per teacher between 2005 and 2018. This demonstrates that the ratio in secondary schools started the period at 15.4 pupils per teacher before dropping to 14.7:1 in 2009 and finishing the period at its highest level of 16:1. The pattern in nursery and primary schools was similar although the variation was not so great. In 2005,

the ratio stood at 21.4 teachers per pupil before dropping to 20.5:1 in 2009, 2015 and 2016 before increasing slightly to 21.2:1 in 2018.

To place the current situation into a wider perspective, the latest EU figures available for 2017 show that the UK has among the highest ratios of pupils to teachers among EU member nations with a ratio of 17.2 in secondary schools against an average of 12.2 across all the 28 countries measured. For primary schools, the average across the EU was 14.7 in 2017 while the UK was 16.9 and the highest figure was 19.6 in France. There are slight differences between these figures and the figures in the preceding paragraph (and the graph below) is explained in terms of methodology and time series. What both show, however, though is that England compares unfavourably with other EU countries under both measures.

Graph 10 Pupils per teacher in England 2005 to 2018



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Nursery and primary	21.4	20.9	20.9	20.6	20.5	20.9	20.8	20.6	20.6	20.5	20.5	20.8	21.2	21.2
Secondary	15.4	15.3	15.1	14.9	14.7	15.0	15.2	15.0	15.0	14.9	15.1	15.3	15.8	16.0

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

A key indicator of how these ratios may change in the future can be gained by examining Department of Education projections from July 2019. In state-funded primary schools, for example, pupil numbers are predicted to fall by 112,000 between 2018 and 2027 due to lower birth projections based on ONS data which may ease some of the pressure. By contrast, pupil numbers in secondary schools are forecast to rise by 418,000 higher in 2027 than 2018, a 14.7% rise.

3. School 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 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 under a previously negotiated long-term deal so their increases were 2.3%, ahead of the median pay awards for the whole economy at 1.8% (2009) and 2% (2010).

Since then, the median whole economy pay award was 2% in each of 2011, 2012 and 2013, and 2.5% in 2014, while the figure for 2015 was 2.2%. By contrast, teachers received no general salary increase in either 2011 or 2012, and just 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. Statutory range minima and maxima were increased by 1% in 2016, 2% in 2017 and 3.5% in 2018.

In 2017 and 2018, however, the uplifts to the upper pay range were lower than the increases for the main range. For instance, pay points on the upper pay range were increased by 1% in 2017 and 2% in 2018. By contrast, the main range saw rises of 2% and 3.5% respectively. Moreover, in 2018, the increase to the leadership pay range was even lower at 1.5%. As a result, just 43% of teachers received the 3.5% headline rise in that year. As mentioned earlier, this year's 2019 award broke from the trend of the last few years because the 2.75% rise will be applied across all teachers' pay and allowance ranges so all teachers will receive a real-terms pay increase, albeit a small one.

3.1. Measuring pay awards

General salary increases for school teachers approved by government ministers from 2007 onwards are detailed in Table 5. Increases exclude other elements of earnings which might have affected overall pay bills. In most of the 13 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 2014, though, 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 generally. 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.

Table 5 School teachers' pay awards compared with those in the wider economy, 2007 to 2019

	School teachers in England		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 pay range, the unqualified teacher pay range and the leading practitioner pay range. 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	-0.5
2019	2.75% uplift to all allowance and pay ranges	Q3	2.0	2.5	3.0	0.25

*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

3.2. Movements in real pay and comparisons with the whole economy

Table 5 also presents the difference between teachers' pay increases and those elsewhere and shows that the only periods in which teachers enjoyed higher annualised awards was between 2009 and 2010 during the economic downturn, and for 2019. In the former period, there was a three-year deal, starting in 2008 and concluded before the burgeoning financial crisis deteriorated significantly, which protected teachers' pay in relative terms. And in the latest year, the teachers' rise of 2.75% is a quarter percentage point ahead of the whole-economy median pay award.

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 and a 2% uplift applied to the maxima of the main pay range which both trailed the all-economy median of 2.2%.

In 2016, almost all teachers received a 1% increase. This 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, pay for only some in the teaching profession in England kept pace with headline basic pay awards for employees in the wider economy.

Last year, there was a 3.5% uplift to the minimum and maximum of the unqualified 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 were only uplifted by 1.5%. At the same time, the all-economy median pay rise stood at 2.5%, again, ahead of the increase received by 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 increases, the differentials were often between 1 and 2 percentage points lower.

As a result, it is clearly visible that the overall pattern demonstrates a sustained deterioration in the level of headline pay awards for school teachers relative to other groups over the period 2007 to 2014. From 2015, increases varied according to 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. This year, the increase to all ranges was 2.75% which was above both the CPI and RPI levels which, at the time, which were around 1.6% and 2.5% respectively, representing a real-terms rise.

4. Graduates' and teachers' basic salaries compared

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 utilises data collected from graduate recruiters on the starting salaries paid to their graduate intake for 2019. 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.

Starting salaries

The IDR survey captured data from graduate recruiters on starting salaries for their graduate intake for 2019 as well as data on basic salaries for graduates on completion of training programmes. The IDR survey on graduate pay collected salary information from 56 organisations across mainly private sector companies, particularly those in the manufacturing and primary sector. Together the organisations surveyed employ over 550,000 staff between them. Companies covered include household names in construction, engineering, finance, retail and the utilities. The data was collected in spring 2019.

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.

Geographical and sector variations

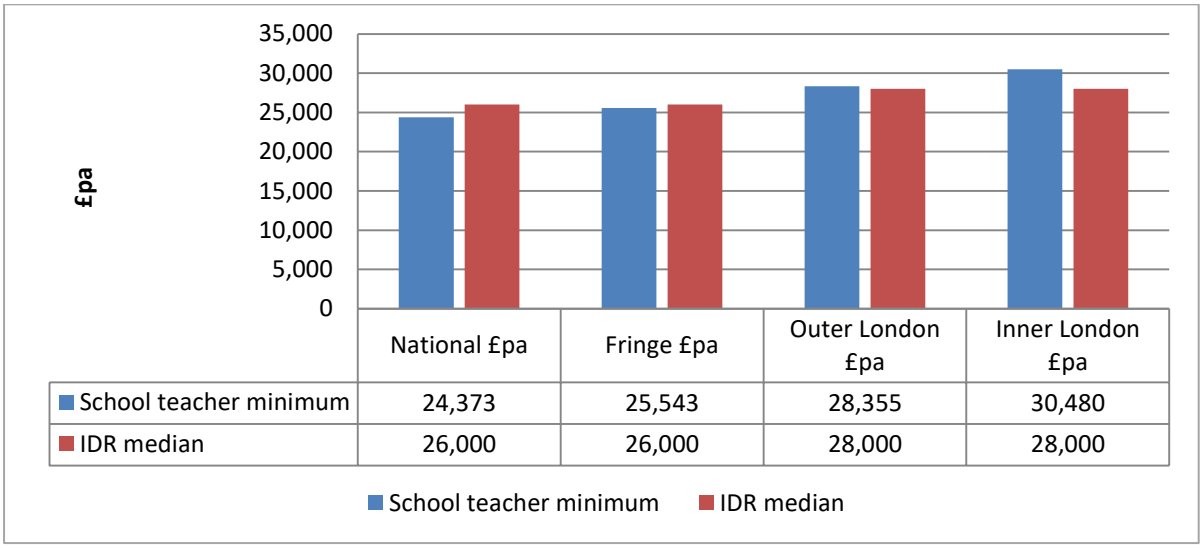
Graphs X and X illustrate how median and average graduate starting salaries as shown by the IDR survey compare with the respective minimum points on the teachers' main pay ranges in each of the locations identified. The data in graph 11 shows that the IDR median graduate starting salary in England, excluding London and the South East, is £26,000, and as such is almost 7% higher than the current national minimum point on the school teachers' main pay range. This represents a narrower gap compared to last year when the difference was almost 18%. However, some of this narrowing can be explained by variations in the IDR sample since the median graduate starting salary in England (excluding London and the South East) has fallen from £27,954 (as recorded in 2018).

This year's sample includes a higher proportion of respondents from the not-for-profit and public sectors (34%) compared to the sample in 2018 (when less than 10% were employers from these sectors). Employers in these sectors typically pay less than firms in the manufacturing and private services sectors. For example, the median starting salary for graduates in not-for-profit and public sector organisations in 2019 is £23,500, while in the private services sector the median starting salary is £26,000 and in manufacturing organisations it is £27,000 (see table 6 below).

Looking at the fringe area, median graduate starting salaries are 1.7% 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 10.6%. Data for non-teaching graduates in this location category is based on salaries paid in the South East (excluding London).

Data from the 2019 survey shows that pay for teachers is ahead of other graduate starting salaries in outer and inner London. The median graduate starting salary for graduates in London is £28,000, according to the latest IDR graduate survey. This is 1.25% behind the minimum salary for teachers in Outer London and 8.1% behind the minimum teachers' salary in inner London. This represents a departure from previous years' surveys, when the minimum salary for teachers was ahead of the median starting salary for graduates in inner London only. Now it appears to be ahead in both inner and outer London.

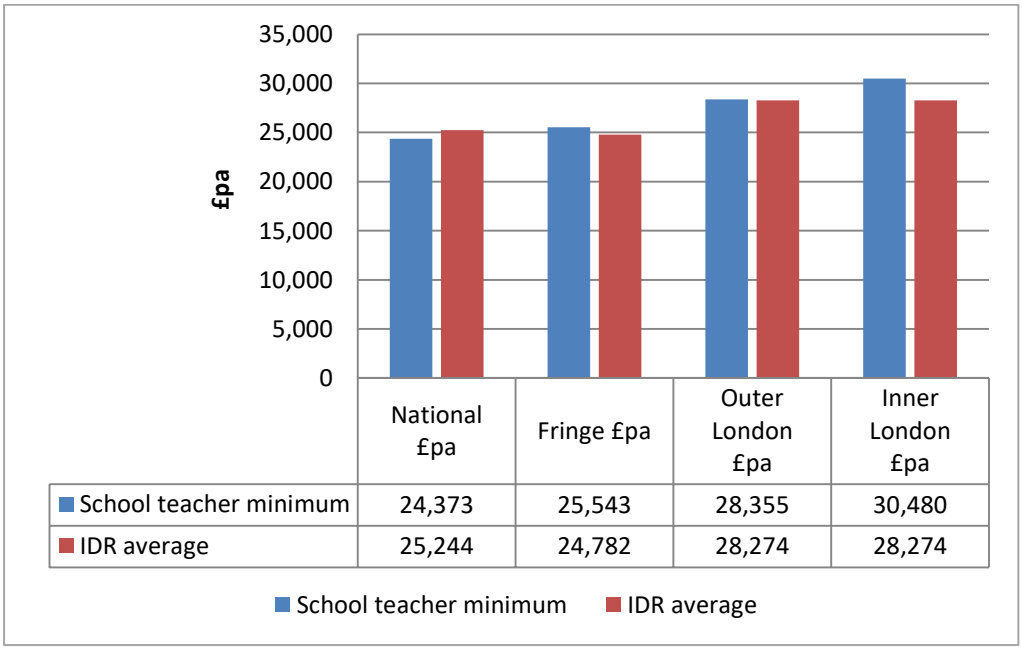
Graph 11 Median starting salaries for graduates compared with teachers' minimums 2019



Source: IDR

A similar picture is presented when we compare average starting salaries for graduates from the IDR survey with current minimum salaries from the school teachers' main pay ranges (graph 2). However, the average graduate starting salary for graduates in the fringe area is behind the minimum salary for teachers.

Graph 12 Average starting salaries for graduates compared with teachers' minimums 2019



Source: IDR

Table 6 Graduate starting salaries by location and sector, 2019

Region	Minimum £pa	LQ £pa	Median £pa	UQ £pa	Maximum £pa	Average £pa
England – national*	18,189	22,750	26,000	27,381	32,000	25,244
London	22,000	26,000	28,000	26,105	33,000	28,274
South East - fringe	16,000	21,500	26,000	28,000	32,000	24,782
Sector (based on all-England data)						
Private services	18,500	22,000	26,000	26,450	30,000	24,914
Manufacturing	16,500	25,875	27,000	28,000	32,000	26,446
Not-for-profit and public sectors	16,000	19,743	23,500	26,244	28,443	22,970

*Excluding London and the South East.

Source: IDR

Table 7 Teachers' main pay range at 1 September 2019 (England & Wales)

Scale point	National £pa	Inner London £pa	Outer London £pa	Fringe £pa
1	24,373	30,480	28,355	25,543
2	26,298	32,070	30,113	27,468
3	28,413	33,741	31,976	29,581
4	30,599	35,499	33,956	31,775
5	33,010	38,230	36,836	34,179
6	35,971	41,483	40,035	37,152

Source: NASUWT

Pay on completion of graduate training programmes

IDR has also collected evidence on progression pay for graduates, or the pay they can expect to receive once they have completed their training. The results indicate that on immediate completion of training, graduates' pay is ahead of the equivalent point for teachers.

The IDR survey asked employers about the basic salaries for graduates on completion of training programmes. The results indicate that the median graduate salary on completion of training at organisations in England (excluding London and the South East) is £32,047.

Graduate training schemes typically last for two years and this suggests a comparison with the salary for teachers on M3 of the main pay range in England, which is £28,413. The comparison indicates that the average completion salary for graduates is 12.8% ahead of the salary for teachers on point M3 of the main range.

Graduate completion salaries in London and the South East

The median graduate salary for graduates on completion of training programmes in London is £36,000. This is 12.6% ahead of the M3 point salary for teachers in outer London (£31,976) and 6.7% ahead of the M3 point for teachers in inner London (£33,741).

Looking at the fringe area, the median graduate salary on completion of training is £32,280, 9.1% higher than the equivalent point on the teachers' main pay range (M3). Data for non-teaching graduates in this location category is based on salaries paid in the South East (excluding London).

5. ASHE earnings analysis

Drawing on official data from the Annual Survey of Hours and Earnings (ASHE), produced by the ONS, this section compares the earnings of school teachers in England to those received by a basket of other comparator graduate occupations. Covering the years 2007 to 2019, the analysis focuses on three years in particular – 2007, 2013 and 2019.

We have chosen 2007 because this is the point just before the economic crisis while 2013 represented the beginning of the period of pay freezes and restraint faced by the teaching profession. The latest year, 2019, is relevant because it is the point for which the most recent data is available, but it also comes at a time when public sector pay policy has been moderated.

When considering the findings, some caveats need to be borne in mind. Firstly, the samples for each year are not based on matched data while some jobs in England have sample sizes that are relatively limited, in particular, chemical and physical scientists. One other point to bear in mind is that in some years the ONS redefined certain jobs, which affects 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 2019. 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, physical scientists and legal professionals.

In the case of legal professionals and physical scientists, the figures are judged to be 'reasonably precise', the second most accurate category set by the ONS.

In contrast, the chemical scientist average basic earnings figure is categorised as 'acceptable', the least reliable of the categories where data is disclosed. When average gross earnings are examined, all figures are considered 'precise' with the exception of the two science groups – chemists and physicists – with both deemed to have estimates that are 'reasonably precise'.

Table 8 Assessment of reliability of English earnings data 2019

Job group	2019 average basic earnings figure £pm	Level of precision	2019 average gross earnings figure £pm	Level of precision
Secondary teachers	755.2	Precise	771.5	Precise
Primary and nursery teachers	702.3	Precise	708.6	Precise
Chemical scientists	601.6	Acceptable	746.1	Reasonably precise
Biological scientists and biochemists	741.2	Precise	834.8	Precise
Physical scientists	853.5	Reasonably precise	973.7	Reasonably precise
Engineering professionals	769.8	Precise	839.0	Precise
Health professionals	869.1	Precise	1,136.0	Precise
Pharmacists	823.2	Precise	825.8	Precise
Legal professionals	957.6	Reasonably precise	1,228.5	Precise
Chartered and certified accountants	744.7	Precise	815.8	Precise
Management consultants and business analysts	804.4	Precise	888.7	Precise
Chartered surveyors	719.6	Precise	784.2	Precise

Source: ASHE

5.1. Overview

ASHE provides information about the amounts, distribution and make-up of earnings and hours worked by employees in all industries and occupations. In addition, the annual ASHE datasets enable earnings for occupations to be analysed on the basis of four-digit occupational codes, where relevant, and by region and/or country, which permits the ONS to produce figures for England only.

For the purposes of our analysis, we have used weekly earnings figures from ASHE for 10 non-teaching graduate occupations as listed in Table 10, on the basis that these occupations (all of which are in Standard Occupational Classification major group '2') are reasonable comparators with school teaching. In addition, all are '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 – and as such should be considered as indicative only.

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 weekly 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*
Science, research, engineering and technology professionals	Chemical scientists	2111	10,000
	Biological scientists and biochemists	2112	35,000
	Physical scientists	2113	10,000
Engineering professionals	Engineering professionals	212	344,000
Health professionals	Health professionals	221	286,000
	Pharmacists	2213	29,000
Business, media and public service professionals	Legal professionals	241	101,000
Business, research and administrative professionals	Chartered and certified accountants	2421	64,000
	Management consultants and business analysts	2423	160,000
Architects, town planners and surveying professionals	Chartered surveyors	2434	57,000
Teaching and educational professionals	A. Secondary education teaching professionals	2314	296,000
	B. Primary and nursery education teaching professionals	2315	272,000

*Full-time jobs. Estimates in 2019.

Source: ASHE

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

This section of the report shows variations in the differentials between the median and average earnings for both groups of teachers and a group of comparator graduate occupations over time. For the purpose of our analysis, the years 2007, 2013 and 2019 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 13-year period.

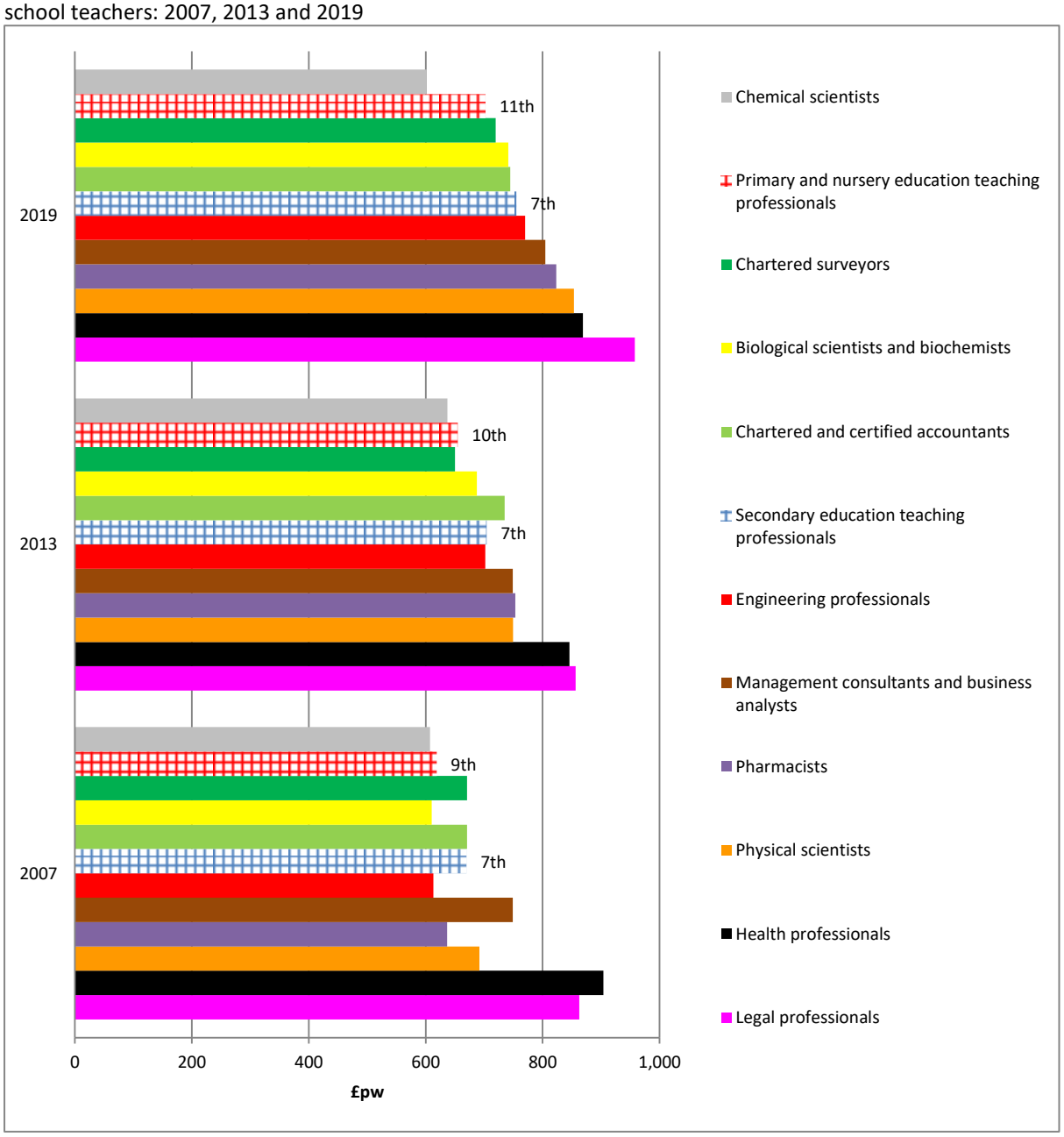
The first part of this section provides an examination of the overall findings for all the jobs covered. This is then followed by a calculation of the combined median and average differentials between earnings for the 10 comparator graduate occupations and those for the two teaching groups. Then, a more detailed analysis of indexed median and average basic earnings for each of the occupational

groups, relative to those for secondary and primary and nursery education school teachers in each of the same three years, is presented.

Teachers' pay is predominantly made up of basic salary but for other professions, additional 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 an analysis of the median and average gross earnings (in addition to the initial examination of basic earnings) of the selected graduate occupations compared to the corresponding figures for teachers.

Graphs 13 and 14 that follow provide details of the median and average rankings of all the professions we examined in England, including both teaching groups, across the three years in focus. As in previous years, the graphs illustrate that secondary teachers are generally slightly higher-paid than their colleagues 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, 2013 and 2019



Source: ASHE

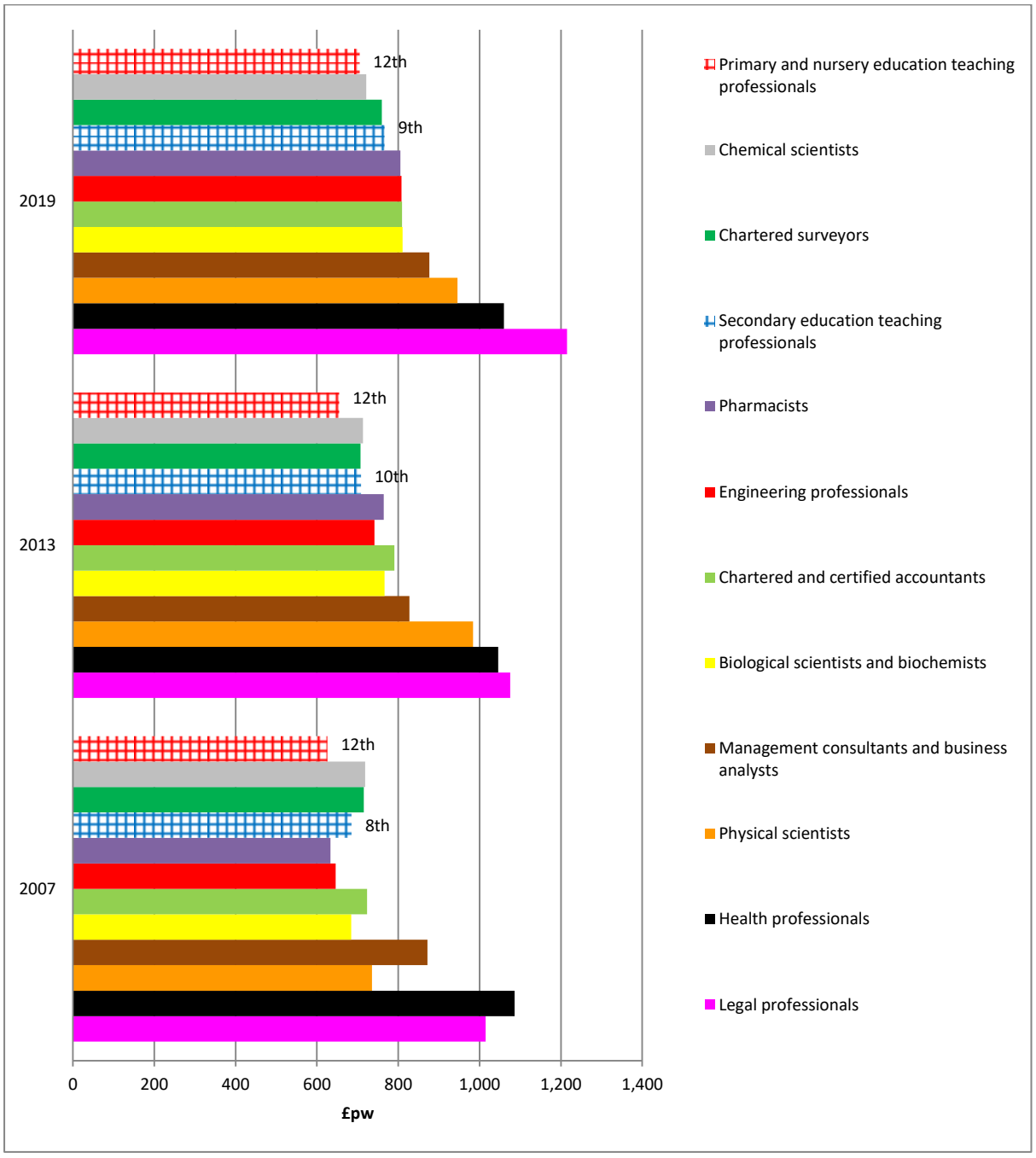
As Graph 13 illustrates, in terms of median basic earnings, the secondary and primary teaching professions in England were positioned seventh and eleventh respectively out of a total of 12 in the rankings for 2019. This represented a slight worsening for primary teachers when compared to 2013. The rankings for all three years are presented in full in Table 11.

Table 10 Ranking of median basic earnings levels of selected graduate professions in England 2007, 2013 and 2019

Group	2007 rank	2013 rank	2019 rank
Secondary education teachers	7	7	7
Primary and nursery education teachers	9	10	11

Source: ASHE

Graph 14 Comparison of average basic earnings of all comparator graduate professions including school teachers in England: 2007, 2013 and 2019



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.

By contrast, the way average figures are calculated means that they take more account of the whole distribution of earnings, including both the highest and the lowest amounts. Therefore, to gain a fuller picture, Graph 14 above 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 than the median comparison in all three years. For example, whereas Graph 13 showed that the highest median salary level for a non-teaching job in 2019 is around 36% greater than the figure for primary and nursery teachers, the highest equivalent average figure shown in Graph 14 is over 72% greater.

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

Table 11 Ranking of average basic earnings levels of 12 graduate professions 2007 to 2019

Group	2007 rank	2013 rank	2019 rank
Secondary education teachers	8	10	9
Primary and nursery education teachers	12	12	12

Source: ASHE

The reason for the slight drop in rankings is because almost all the average figures for non-teaching professions were significantly higher than the corresponding medians whereas the average levels for both teaching groups in England were only slightly above the corresponding median levels. For example, primary and nursery teachers' median weekly basic earnings stood at £702.30 which was very close to the average of £705.20. Meanwhile, the respective figures for secondary teachers at £755.20 and £766.40 were also close.

By contrast, differences between the median and average figures for the non-teaching professions were, on the whole, 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

£721.50 was 19.9% higher than the corresponding median of £601.60. At the same time, the average figure for legal professionals of £1,215 was 26.9% higher than the equivalent median of £957.60. In comparison, the corresponding differentials for secondary and primary school teachers were just 1.5% and 0.4% respectively.

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

- there is 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 than those in teaching;
- 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, and as we have found in previous years, in terms of median basic earnings, teachers are relatively lower-paid compared to most of the other professions and when measured by average amounts they fall near to the bottom of the pay league.

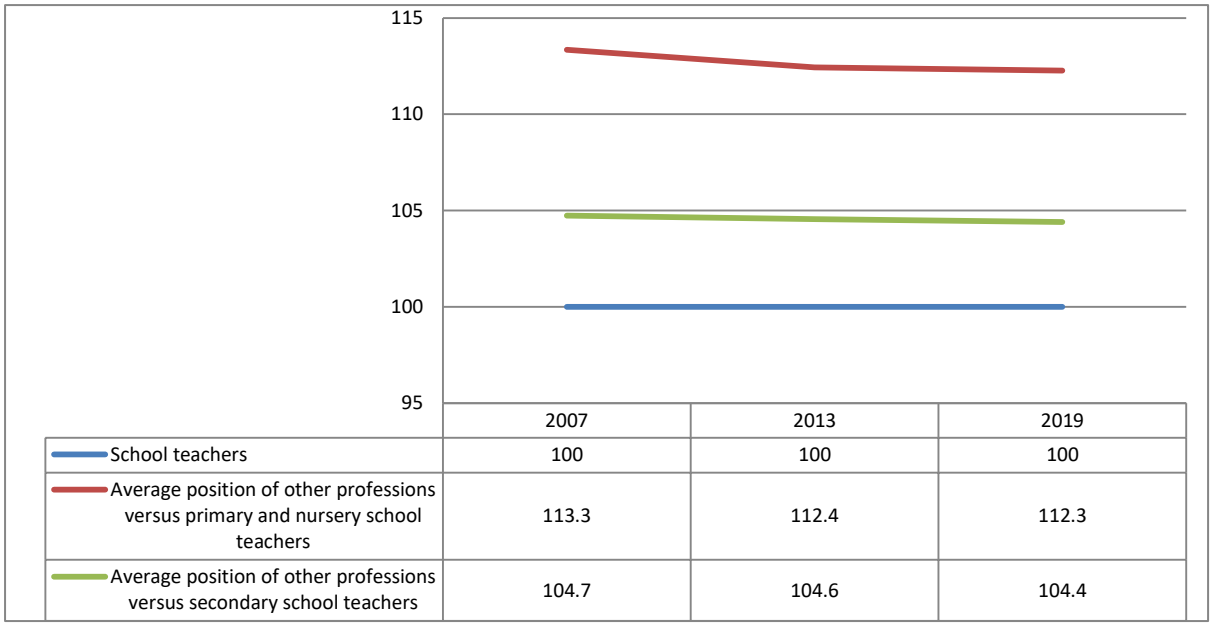
5.3. Basic earnings of combined comparator group of professions relative to school teachers

Another way of looking at the pay differentials that exist between teachers and other graduate professions is to combine the basic earnings data for the non-teaching professions into an un-weighted aggregate amount. Using this combined figure makes it possible to draw further comparisons with earnings for the two teaching groups over the period.

Using school teachers' median basic earnings in England as the base for each year (= 100), Graph 15 below 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. In 2019, for example, the

differential with primary and nursery school teachers was 12.3% while it was smaller at 4.4% for the comparison with their secondary school counterparts.

Graph 15 Indexed median basic earnings of all-comparator graduate professions relative to school teachers in England: 2007, 2013 and 2019



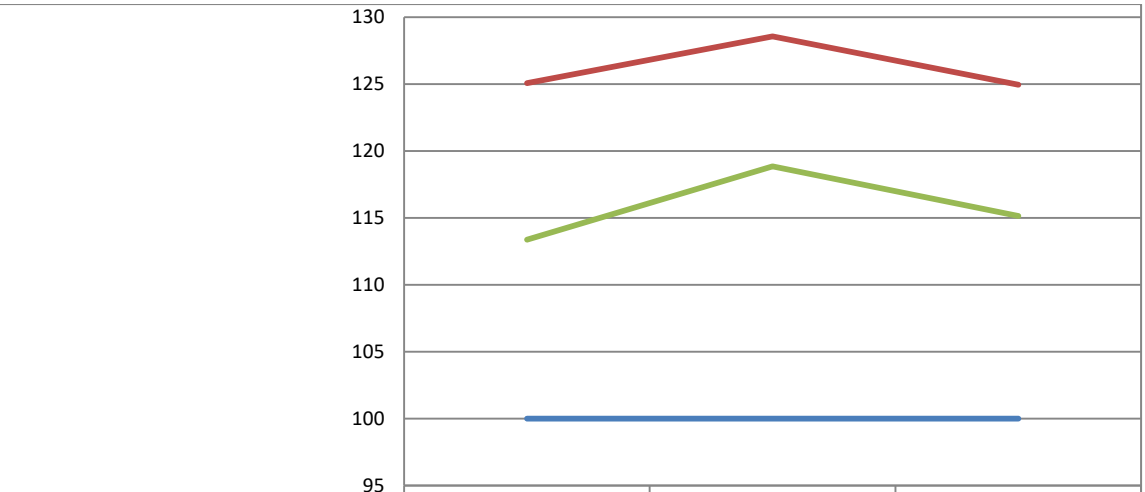
	2007	2013	2019
School teachers	100	100	100
Average position of other professions versus primary and nursery school teachers	113.3	112.4	112.3
Average position of other professions versus secondary school teachers	104.7	104.6	104.4

Source: ASHE

Graph 16 illustrates the same pattern when using average basic earnings figures. In this case it shows larger gaps between both teaching groups when compared to the all-comparator group of graduate professions in England in all three years. For instance, the 2019 differential between the combined figure and nursery and primary school teachers stood at 25% and it was 15.1% when contrasted with the secondary school teacher average basic earnings figure.

In both cases, the graphs show that whether measured by median and average basic earnings, the pay gap has been significant but has remained relatively stable throughout the 13-year period. One caveat to bear in mind, however, is that both graphs are based on unmatched samples for each year so some caution needs to be exercised when interpreting the results across multiple years.

Graph 16 Indexed average basic earnings all-comparator graduate professions relative to school teachers in England: 2007, 2013 and 2019



	2007	2013	2019
School teachers	100	100	100
Average position of other professions versus primary and nursery school teachers	125.1	128.6	125.0
Average position of other professions versus secondary school teachers	113.4	118.8	115.1

Source: ASHE

Even bearing these limitations in mind however, it is clear that such comparisons show that median and average basic earnings for both teaching groups in England were notably lower than those for the all-comparator equivalent throughout the period. In addition, any slight narrowing that is exhibited by the patterns shown at some points in the graphs is more likely to be as a result of weaker earnings growth more broadly following the economic crisis and subsequent lethargic recovery rather than large pay rises in teaching.

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 also 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, 2013 and 2019

Table 13 below presents the findings in respect of the median earnings for occupations within the ASHE science group when compared to secondary teachers in England. The science occupations are

among the lowest-paid of the non-teaching professions based on an analysis of medians but the 2019 secondary teacher figure is higher than both of the corresponding amounts for chemical and biological scientists. In contrast, the physical scientist median basic earnings level was 13% higher than the equivalent teaching amount.

Table 12 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	669.9	100.0	704.4	100.0	755.2	100.0
Chemical scientists	607.6	90.7	637.3	90.5	601.6	79.7
Biological scientists and biochemists	610.2	91.1	687.3	97.6	741.2	98.1
Physical scientists	691.6	103.2	749.2	106.4	853.5	113.0

Table 14 provides a similar analysis comparing the science occupations' median basic earnings with those of primary and nursery school teachers. Here, the pattern was slightly different with primary school teachers' 2019 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		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	619.0	100.0	655.1	100.0	702.3	100.0
Chemical scientists	607.6	98.2	637.3	97.3	601.6	85.7
Biological scientists and biochemists	610.2	98.6	687.3	104.9	741.2	105.5
Physical scientists	691.6	111.7	749.2	114.4	853.5	121.5

Indexed differentials of average basic earnings, 2007, 2013 and 2019

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 median figures trail those of secondary teachers in all three years, when measured by averages the differentials were closer with chemists enjoying higher pay in 2007 and 2013.

Similarly, the biological group's average figure in 2019 was 5.8% higher than the equivalent secondary school figure based on average basic earnings, whereas it was lower when measured by the median figures. For physical scientists, average basic earnings were 23.4% higher than the equivalent secondary teacher amount in 2019.

Table 14 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	685.2	100.0	708.4	100.0	766.4	100.0
Chemical scientists	718.5	104.9	713.6	100.7	721.5	94.1
Biological scientists and biochemists	684.6	99.9	766.1	108.1	810.5	105.8
Physical scientists	735.3	107.3	984.1	138.9	945.5	123.4

Table 16 below exhibits a similar pattern but because primary and nursery teachers' basic earnings are lower than those of secondary teachers all the science groups' average basic earnings were greater in all years. For example, in 2019, chemical scientists had a 2.3% lead while the corresponding gaps in favour of biologists and physical scientists were 14.9% and 34.1% respectively.

Table 15 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	626.0	100.0	654.6	100.0	705.2	100.0
Chemical scientists	718.5	114.8	713.6	109.0	721.5	102.3
Biological scientists and biochemists	684.6	109.4	766.1	117.0	810.5	114.9
Physical scientists	735.3	117.5	984.1	150.3	945.5	134.1

b) Engineering professionals

Indexed differentials of median basic earnings, 2007, 2013 and 2019

Median basic earnings for engineering professionals started the period slightly behind those of secondary education teachers with the gap narrowing in 2013. This changed in 2019 when median basic earnings exceeded those of secondary school teachers marginally by 1.9%.

Table 16 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	669.9	100.0	704.4	100.0	755.2	100.0
Engineering professionals	613.1	91.5	702.0	99.7	769.8	101.9

A comparison with the median basic earnings of primary and nursery education teachers portrays a similar pattern but engineers' pay was already ahead by 2013. In 2007, the engineering figure was 99% of the primary and nursery teachers' figure before increasing to 107.2% in 2013 and then rising to 109.6% at the end of the period.

Table 17 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	619.0	100.0	655.1	100.0	702.3	100.0
Engineering professionals	613.1	99.0	702.0	107.2	769.8	109.6

Indexed differentials of average basic earnings, 2007, 2013 and 2019

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 2013. In 2007, the engineering figure trailed the secondary teacher equivalent by 5.7% before moving 4.7% ahead in 2013. By 2019, it was further ahead standing at 105.4% of the secondary teacher equivalent.

Table 18 Comparison with secondary teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	685.2	100.0	708.4	100.0	766.4	100.0
Engineering professionals	646.4	94.3	741.8	104.7	808.0	105.4

Table 20 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. In 2019, for example, the engineering figure was 14.6% greater than the corresponding primary and nursery teacher amount.

Table 19 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	626.0	100.0	654.6	100.0	705.2	100.0
Engineering professionals	646.4	103.3	741.8	113.3	808.0	114.6

c) Health professionals and pharmacists

Indexed differentials of median basic earnings, 2007, 2013 and 2019

Alongside legal professionals, earnings for those working in the health sector are commonly at the higher end of the distribution as illustrated in Table 21. It shows significant median basic earnings leads for health professionals over secondary education teachers in the three years shown. In 2007, 2013 and 2019, the differentials were 34.9%, 20.1% and 15.1% respectively.

Pharmacists earned more at the median in 2013 and 2019, though they started the period behind secondary teachers' earnings. As the table shows, the differentials were narrower than for health professionals, lagging by 5% in 2007 while moving ahead to 106.9% and 109% of the equivalent secondary school teacher figures in 2013 and 2019.

Table 20 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	669.9	100.0	704.4	100.0	755.2	100.0
Health professionals	903.9	134.9	845.8	120.1	869.1	115.1
Pharmacists	636.7	95.0	753.3	106.9	823.2	109.0

The median basic earnings leads for health professionals and pharmacists were both greater when compared with primary and nursery teachers as shown in Table 22. In 2019, they finished the period with leads of 23.8% for health professionals and 17.2% for pharmacists.

Table 21 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	619.0	100.0	655.1	100.0	702.3	100.0
Health professionals	903.9	146.0	845.8	129.1	869.1	123.8
Pharmacists	636.7	102.9	753.3	115.0	823.2	117.2

Indexed differentials of average basic earnings, 2007, 2013 and 2019

Examining average basic earnings as shown in Tables 23 and 24, the lead of health professionals over secondary teachers narrowed but still ranged between 38.3% 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 7.9% in 2013 and 5.1% in the final year.

Table 22 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	685.2	100.0	708.4	100.0	766.4	100.0
Health professionals	1,086.0	158.5	1,045.9	147.6	1,059.7	138.3
Pharmacists	633.4	92.4	764.3	107.9	805.4	105.1

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. In 2019, the health professionals' lead was 50.3% while it was 14.2% for pharmacists.

Table 23 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	626.0	100.0	654.6	100.0	705.2	100.0
Health professionals	1,086.0	173.5	1,045.9	159.8	1,059.7	150.3
Pharmacists	633.4	101.2	764.3	116.8	805.4	114.2

d) Legal professionals

Indexed differentials of median basic earnings, 2007, 2013 and 2019

Legal professionals are the other relatively well-paid group among those examined and Table 25 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 and then fell slightly to 21.6% in 2013 before rising once more, to 26.8%, in the latest year.

Table 24 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	669.9	100.0	704.4	100.0	755.2	100.0
Legal professionals	862.4	128.7	856.2	121.6	957.6	126.8

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. In the final year, the median basic earnings figure for legal professionals was 36.4% greater than the primary and nursery teacher amount.

Table 25 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	619.0	100.0	655.1	100.0	702.3	100.0
Legal professionals	862.4	139.3	856.2	130.7	957.6	136.4

Indexed differentials of average basic earnings, 2007, 2013 and 2019

When average differentials were examined, the gaps were more substantial. For example, Table 27 demonstrates that legal professionals had an average earnings lead over secondary school teachers of 48.1% in 2007, 51.8% in 2013 and 58.5% in 2019.

Table 26 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	685.2	100.0	708.4	100.0	766.4	100.0
Legal professionals	1,014.6	148.1	1,075.2	151.8	1,215.0	158.5

The gaps with primary and nursery education teachers were even greater in all three years, finishing the period at over 72.3% in 2019.

Table 27 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	626.0	100.0	654.6	100.0	705.2	100.0
Legal professionals	1,014.6	162.1	1,075.2	164.3	1,215.0	172.3

e) Business, research, media and public service professionals

Indexed differentials of median basic earnings, 2007, 2013 and 2019

Business, research and administrative professionals such as accountants and management consultants 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 29 and 30 which show that teachers' earnings are lagging behind in almost every case but nowhere near the same extent as for health and legal professionals.

Management consultants' median basic earnings were between 6.3% and 11.8% ahead of those of secondary school teachers across the period. For accountants, the differentials were narrower lying at 0.1% and 4.3% in 2007 and 2013 but trailing the teaching group in 2019 by 1.4%.

Table 28 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	669.9	100.0	704.4	100.0	755.2	100.0
Chartered and certified accountants	670.8	100.1	735.0	104.3	744.7	98.6
Management consultants and business analysts	748.8	111.8	749.0	106.3	804.4	106.5

The pattern was similar when compared to the earnings of primary and nursery school teachers although in every case the differentials were positive and greater in favour of the business groups.

Table 29 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	619.0	100.0	655.1	100.0	702.3	100.0
Chartered and certified accountants	670.8	108.4	735.0	112.2	744.7	106.0
Management consultants and business analysts	748.8	121.0	749.0	114.3	804.4	114.5

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 24.3% more than those for primary teachers. The corresponding differentials for accountants were 5.6% and 14.8% respectively.

Indexed differentials of average basic earnings, 2007, 2013 and 2019

Table 30 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	685.2	100.0	708.4	100.0	766.4	100.0
Chartered and certified accountants	723.6	105.6	790.5	111.6	809.3	105.6
Management consultants and business analysts	871.5	127.2	827.2	116.8	876.7	114.4

Table 31 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	626.0	100.0	654.6	100.0	705.2	100.0
Chartered and certified accountants	723.6	115.6	790.5	120.8	809.3	114.8
Management consultants and business analysts	871.5	139.2	827.2	126.4	876.7	124.3

f) Architects, Town Planners and Surveyors

Indexed differentials of median basic earnings, 2007, 2013 and 2019

Chartered surveyors are a group that often 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 95.3% of the corresponding secondary education teacher figure in 2019.

Table 32 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	669.9	100.0	704.4	100.0	755.2	100.0
Chartered surveyors	670.8	100.1	650.2	92.3	719.6	95.3

In contrast, chartered surveyors' median basic earnings lead those of primary school teachers by 2.5% in the latest year.

Table 33 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	619.0	100.0	655.1	100.0	702.3	100.0
Chartered surveyors	670.8	108.4	650.2	99.3	719.6	102.5

Indexed differentials of average basic earnings, 2007, 2013 and 2019

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 three years. The differentials varied between 7.8% in 2019 and 14.3% in 2007. The comparison with secondary school teachers shows that chartered surveyors' average basic earnings were ahead in 2007 by 4.4% whereas there was near parity in 2013 and 2019.

Table 34 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	685.2	100.0	708.4	100.0	766.4	100.0
Chartered surveyors	715.6	104.4	707.0	99.8	759.9	99.2

Table 35 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	626.0	100.0	654.6	100.0	705.2	100.0
Chartered surveyors	715.6	114.3	707.0	108.0	759.9	107.8

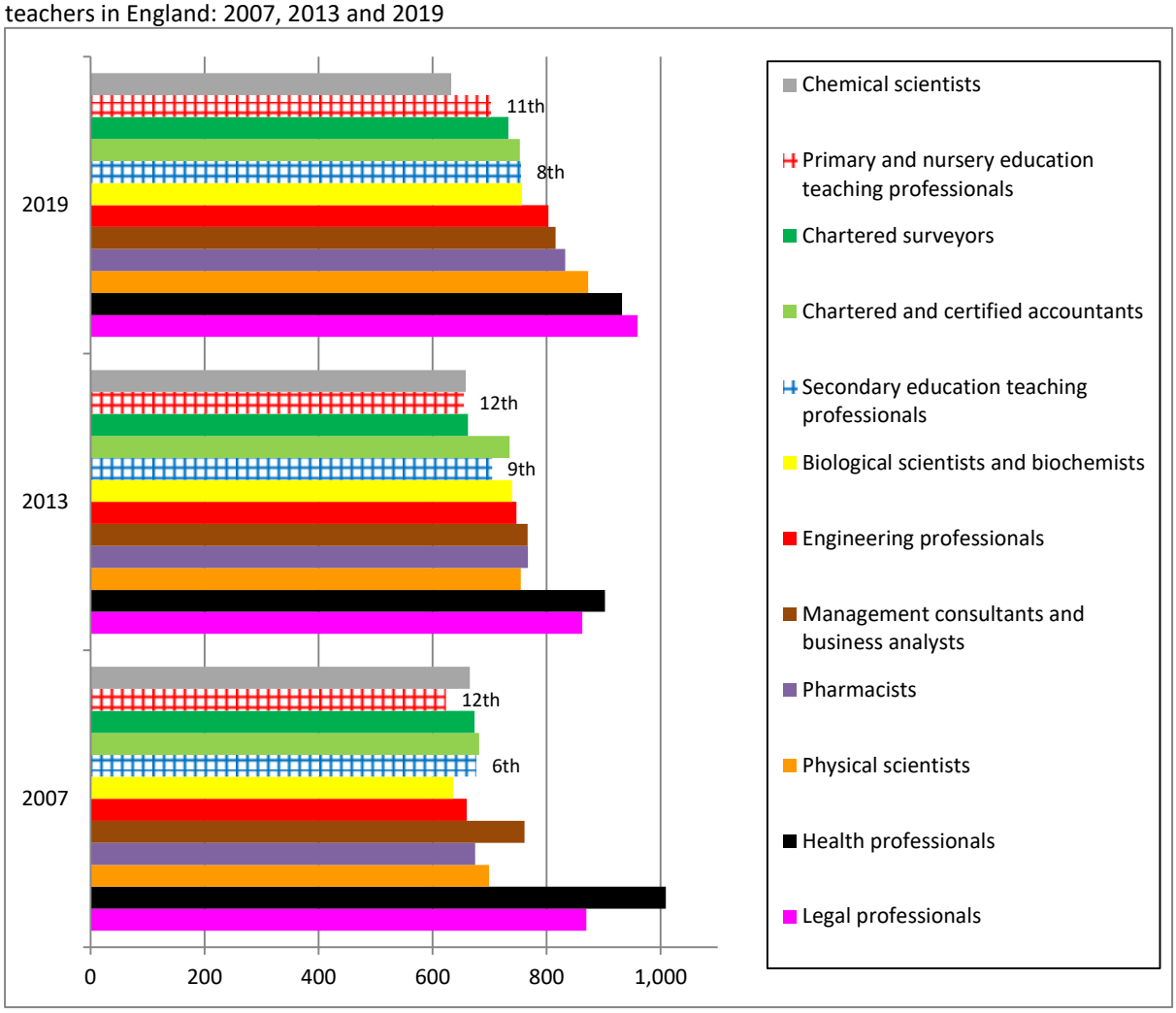
5.5. Gross earnings of comparator graduate professions relative to school teachers

Additions to basic pay, such as overtime or shift pay, do not play a part in teachers' earnings. This contrasts with those employed in other sectors who often receive significant amounts from other sources. Because of this, in order to provide a fuller 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 charts but in this section the comparisons are based on gross rather than basic earnings. Because gross earnings incorporate additional elements of remuneration, the figures in the latest two graphs are larger for most non-teaching jobs than in the previous two. As a result, the ranking order has changed somewhat although the two teaching groups remain near the bottom of the earnings rankings in both comparisons.

Graph 17 below shows that in 2019, secondary teachers were ranked eighth out of the 12 professions in terms of median gross earnings while primary teachers were placed eleventh, ahead of just one group, chemical scientists.

Graph 17 Comparison of median gross earnings of all comparator graduate professions including school teachers in England: 2007, 2013 and 2019



Source: ASHE

Across the whole period, secondary teachers' ranking fell from sixth position in 2007 to ninth in 2013 before finishing the period in eighth. Primary and nursery school teachers started the period in the bottom position, and maintaining this in 2013 before rising to eleventh place in 2019.

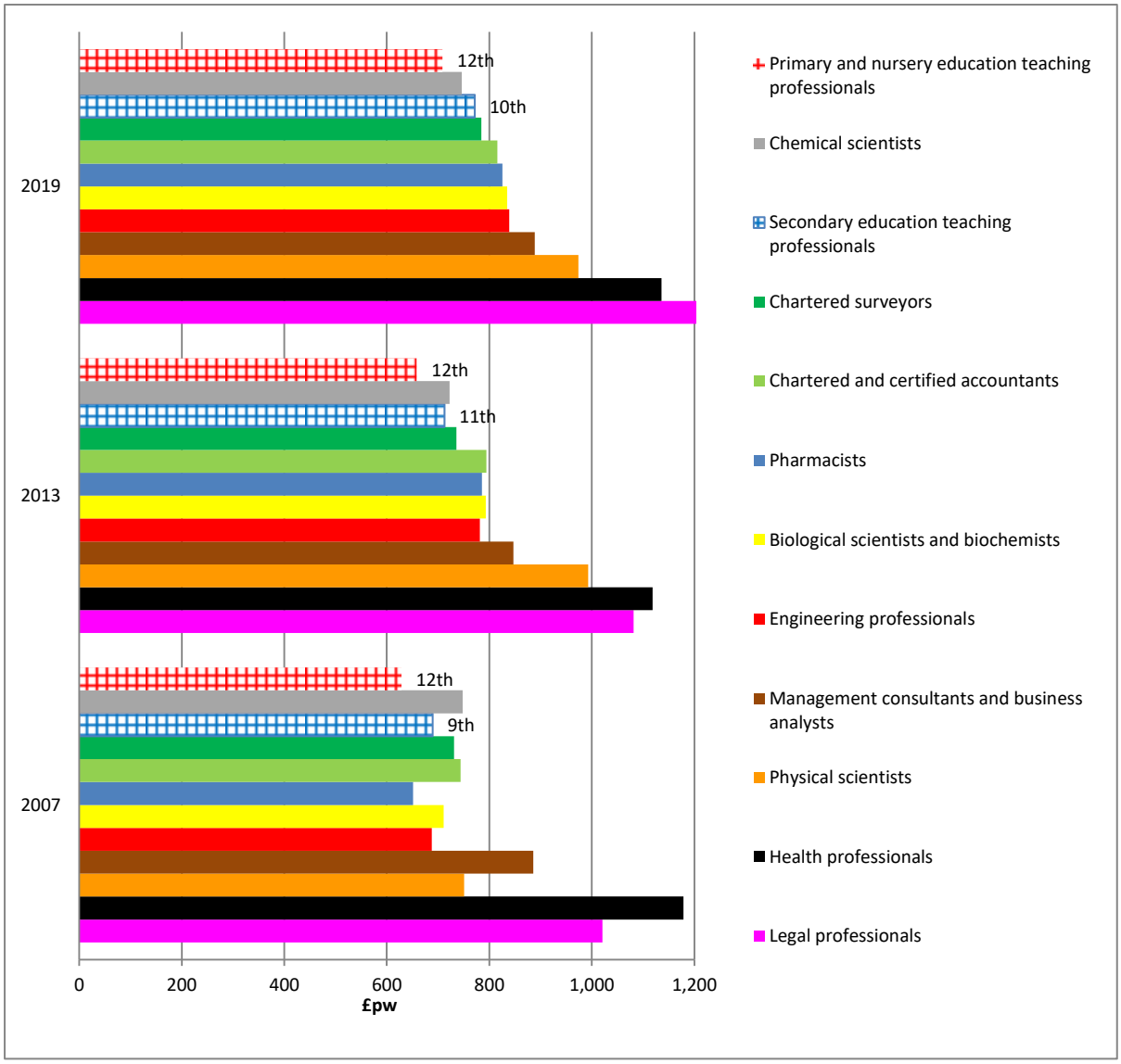
Table 36 Ranking of median gross` earnings levels of 12 graduate professions in England 2007 to 2019

Group	2007 rank	2013 rank	2019 rank
Secondary education teachers	6	9	8

Primary and nursery education teachers	12	12	11

Source: ASHE

Graph 18 Comparison of average gross earnings of all comparator graduate professions including school teachers in England: 2007, 2013 and 2019



Source: ASHE

Graph 18 above 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.

As in previous 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. And this additional remuneration may have a greater effect when average gross earnings rather than median gross earnings are examined.

Table 37 Ranking of average gross earnings levels of 12 graduate professions in England 2007 to 2019

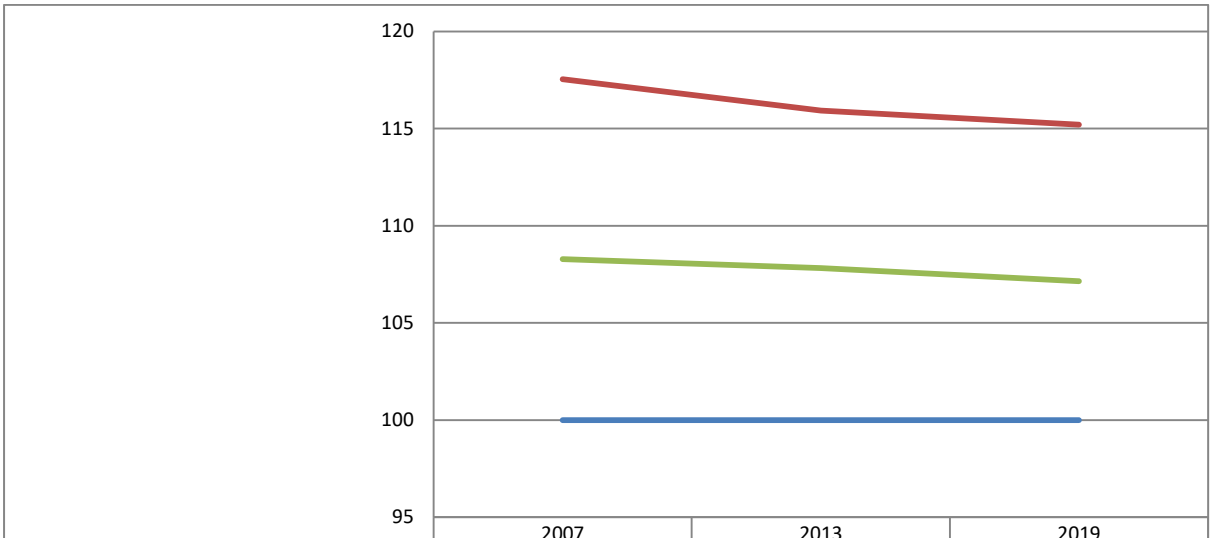
Group	2007 rank	2013 rank	2019 rank
Secondary education teachers	9	11	10
Primary and nursery education teachers	12	12	12

Source: ASHE

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

As with the analysis presented earlier 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.

Graph 19 Indexed median gross earnings lead of all-comparator graduate professions over school teachers in England: 2007, 2013 and 2019



	2007	2013	2019
School teachers	100	100	100
Average position of other professions verus primary and nursery school teachers	117.6	115.9	115.2
Average position of other professions verus secondary school teachers	108.3	107.8	107.1

Source: ASHE

As with the pattern exhibited by the basic earnings analysis shown earlier, both graphs show that teachers' gross earnings were 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, is that for both teaching groups, the differentials are greater when measured by gross earnings.

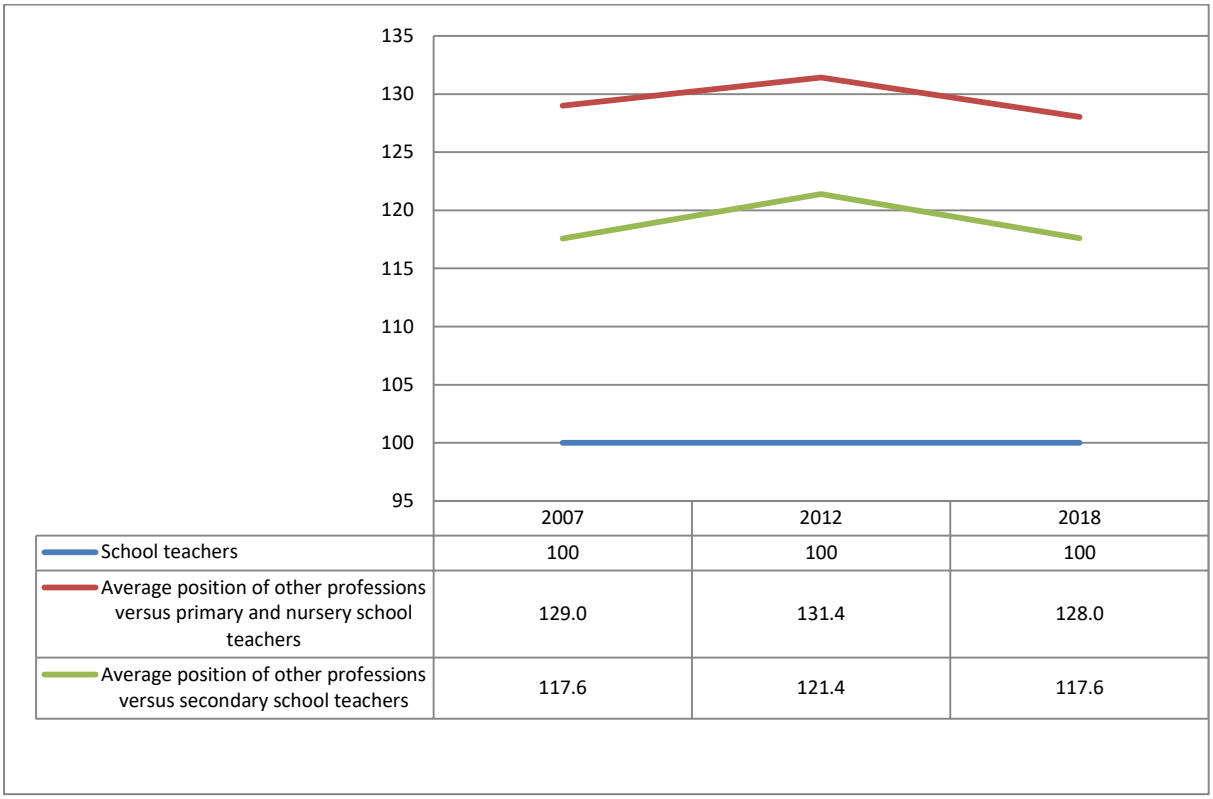
Graph 19 above, for example, shows that median gross earnings for the 10 selected graduate professions in England were 8.3% ahead of the median earnings for secondary school teachers and some 17.6% greater than median earnings for primary and nursery education teachers in 2007.

By 2013, the median gross earnings lead of comparator graduate professionals over secondary school teachers had fallen slightly to 7.8% before falling slightly once more to 7.1% in 2019. The pattern was similar for primary and nursery school teachers with a narrowing throughout the period from a 17.6% differential in 2007 to 15.9% in 2013 and then to 15.2% in 2019.

As with the basic earnings analysis, when using average measures of gross earnings, the differentials between teachers and other graduate professions were greater than the corresponding median

ones. As the graph below shows, the differential between the average gross earnings of the all-comparator group and secondary teachers in England was 17.6% in 2007 rising to 21.4% in 2013 before finishing the period again at 17.6%. The corresponding figures for primary and nursery school teachers were 29%, 31.4% and 28% respectively.

Graph 20 Indexed average gross earnings lead of all-comparator graduate professions over school teachers in England: 2007, 2013 and 2019



	2007	2012	2018
School teachers	100	100	100
Average position of other professions versus primary and nursery school teachers	129.0	131.4	128.0
Average position of other professions versus secondary school teachers	117.6	121.4	117.6

Source: ASHE

As in the case of the earlier analysis, such multi-year comparisons need to be treated with a certain degree of caution because they are based on unmatched samples. In addition, some of the occupational definitions have changed over the period which may also affect the results as mentioned earlier.

Another factor to consider when using a combined non-teaching figure is that the aggregate 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 which is another caveat that needs to be considered.

5.7 Occupational findings on gross pay in detail

Below we summarise the main findings from the gross earnings indexation analysis in Tables 39 to 62.

a) Science, research, engineering and technology professionals

Indexed differentials of median gross earnings, 2007, 2013 and 2019

For chemical scientists, median gross earnings started the period slightly down on those of secondary teachers, falling further in 2013 before finishing the period with a value that was 83.8% of the teaching equivalent. For biologists, median gross earnings were 6% behind in 2007 while the figures showed a 5% advantage in 2013 and near parity in 2019.

In contrast, physical scientists started the period with a 3.2% earnings lead before this increased to 7.1% in 2013 and then rose further to 15.6% in 2019. 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		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	676.9	100.0	704.4	100.0	755.2	100.0
Chemical scientists	665.2	98.3	658	93.4	632.5	83.8
Biological scientists and biochemists	636.1	94.0	739.6	105.0	756.9	100.2
Physical scientists	698.8	103.2	754.7	107.1	872.8	115.6

The pattern of median gross earnings with respect to primary and nursery school teachers was similar although the generally lower earnings levels of such teachers meant that scientists' earnings were relatively higher. As a result, biological scientists finished the period in 2019 with median gross earnings worth 107.8% of the primary school teacher figure while the equivalent figure for physical scientists was 124.3%. In contrast, the chemical scientists' figure was lower at 90.1%.

Table 39 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	623.5	100.0	655.1	100.0	702.3	100.0
Chemical scientists	665.2	106.7	658	100.4	632.5	90.1
Biological scientists and biochemists	636.1	102.0	739.6	112.9	756.9	107.8
Physical scientists	698.8	112.1	754.7	115.2	872.8	124.3

Indexed differentials of average gross earnings, 2007, 2013 and 2019

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 2019 when this group's average gross earnings were 3.3% behind those of secondary school teachers.

Table 40 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	689.7	100.0	712.7	100.0	771.5	100.0
Chemical scientists	748.2	108.5	722.8	101.4	746.1	96.7
Biological scientists and biochemists	710.8	103.1	793.0	111.3	834.8	108.2
Physical scientists	751.1	108.9	993.0	139.3	973.7	126.2

The equivalent figures for biologists and physical scientists in 2019 were 8.2% and 26.2% ahead of the teaching group figure. A comparison with teachers in primary and nursery schools shows that the science professions earned more in each year. In 2019, for instance, the chemical and biological scientists' leads were 5.3% and 17.8% with 37.4% for physical scientists.

Table 41 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	628.6	100.0	658.4	100.0	708.6	100.0
Chemical scientists	748.2	119.0	722.8	109.8	746.1	105.3
Biological scientists and biochemists	710.8	113.1	793.0	120.4	834.8	117.8
Physical scientists	751.1	119.5	993.0	150.8	973.7	137.4

b) Engineering professionals

Indexed differentials of median gross earnings, 2007, 2013 and 2019

Table 43 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 106% of the teaching figure in 2013 before finishing the period with a lead of 6.3%.

Table 42 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	676.9	100.0	704.4	100.0	755.2	100.0
Engineering professionals	659.6	97.4	746.8	106.0	802.9	106.3

When engineering professionals' median gross earnings were compared with those for primary school teachers, as illustrated in Table 44, 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%, rising to 14% in 2013 and then slightly to 14.3% in 2019.

Table 43 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	623.5	100.0	655.1	100.0	702.3	100.0
Engineering professionals	659.6	105.8	746.8	114.0	802.9	114.3

Indexed differentials of average gross earnings, 2007, 2013 and 2019

In respect of their average gross earnings in each of the three years under review, Tables 45 and 46 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 8.7% and 18.4% ahead of the equivalent figures for secondary and primary school teachers.

Table 44 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	689.7	100.0	712.7	100.0	771.5	100.0
Engineering professionals	687.5	99.7	781.4	109.6	839	108.7

Table 45 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	628.6	100.0	658.4	100.0	708.6	100.0
Engineering professionals	687.5	109.4	781.4	118.7	839	118.4

c) Health professionals

Indexed differentials of median gross earnings, 2007, 2013 and 2019

Tables 47 and 48 demonstrate that health professionals were among the highest-paid professions with median gross earnings significantly ahead of those for both teaching groups. In 2019, for example, the median gross earnings of health professionals were 23.5% higher than those for the secondary teaching group. The equivalent differential with primary and nursery school teachers was even higher again at 32.7%. Pharmacists also earned more but the differentials were slightly lower, at 10.3% against earnings for secondary teachers and 18.6% compared with those of primary school teachers in 2019.

Table 46 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	676.9	100.0	704.4	100.0	755.2	100.0
Health professionals	1008.8	149.0	902.4	128.1	932.3	123.5
Pharmacists	674.6	99.7	766.9	108.9	832.7	110.3

Table 47 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	623.5	100.0	655.1	100.0	702.3	100.0
Health professionals	1008.8	161.8	902.4	137.7	932.3	132.7
Pharmacists	674.6	108.2	766.9	117.1	832.7	118.6

Indexed differentials of average gross earnings, 2007, 2013 and 2019

Tables 49 and 50 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 smaller than those for the health professionals.

Table 48 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	689.7	100.0	712.7	100.0	771.5	100.0
Health professionals	1178.6	170.9	1118.6	157.0	1136.0	147.2
Pharmacists	651.4	94.4	785.4	110.2	825.8	107.0

Table 49 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	628.6	100.0	658.4	100.0	708.6	100.0
Health professionals	1178.6	187.5	1118.6	169.9	1136.0	160.3
Pharmacists	651.4	103.6	785.4	119.3	825.8	116.5

d) Legal professionals

Indexed differentials of median gross earnings, 2007, 2013 and 2019

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 2019 were 27% higher than the secondary education equivalent. The corresponding differential with primary school teachers was 36.6%.

Table 50 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	676.9	100.0	704.4	100.0	755.2	100.0
Legal professionals	869.8	128.5	862.4	122.4	959.4	127.0

Table 51 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	623.5	100.0	655.1	100.0	702.3	100.0
Legal professionals	869.8	139.5	862.4	131.6	959.4	136.6

Indexed differentials of average gross earnings, 2007, 2013 and 2019

Average gross earnings for legal professionals were even further ahead of those for school teachers in all three years. In 2019, the average gross earnings figure for legal professionals was 59.2% ahead of that for secondary teachers and the differential was 73.4% relative to average earnings for primary school teachers in the same year – both substantial leads.

Table 52 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	689.7	100.0	712.7	100.0	771.5	100.0
Legal professionals	1020.8	148.0	1081.4	151.7	1228.5	159.2

Table 53 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	628.6	100.0	658.4	100.0	708.6	100.0
Legal professionals	1020.8	162.4	1081.4	164.2	1228.5	173.4

e) Business, research, media and public service professionals

As with those working in the legal sector, occupations within the business, research and administrative professions are usually considered to be relatively well-paid and this proved to be partially 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 most years.

Median gross earnings of chartered accountants, for example, started the period in 2007 some 0.7% ahead of those of secondary school teachers. The corresponding figure was 4.3% in 2013 and it finished the period at 0.3% behind in 2019. The equivalent differentials for management consultants stood at 12.4%, 8.8% and 8% respectively.

Table 54 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	676.9	100.0	704.4	100.0	755.2	100.0
Chartered and certified accountants	681.9	100.7	735.0	104.3	753.2	99.7
Management consultants and business analysts	760.9	112.4	766.6	108.8	815.7	108.0

Table 56 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 7.2% higher than those of primary school teachers while the management consultant lead was 16.1%.

Table 55 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	623.5	100.0	655.1	100.0	702.3	100.0
Chartered and certified accountants	681.9	109.4	735.0	112.2	753.2	107.2
Management consultants and business analysts	760.9	122.0	766.6	117.0	815.7	116.1

Indexed differentials of average gross earnings, 2007, 2013 and 2019

The average gross earnings differentials are wider for both groups. For example, in 2019 chartered accountants had average gross earnings that were 5.7% greater than the equivalent secondary school teacher figure while the differential for management consultants was 15.2%.

Table 56 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	689.7	100.0	712.7	100.0	771.5	100.0
Chartered and certified accountants	743.7	107.8	794.1	111.4	815.8	105.7
Management consultants and business analysts	885.6	128.4	847.3	118.9	888.7	115.2

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 15.1% ahead and management consultants 25.4% ahead in 2019.

Table 57 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	628.6	100.0	658.4	100.0	708.6	100.0
Chartered and certified accountants	743.7	118.3	794.1	120.6	815.8	115.1
Management consultants and business analysts	885.6	140.9	847.3	128.7	888.7	125.4

f) Architects, Town Planners and Surveyors

Indexed differentials of median gross earnings, 2007, 2013 and 2019

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 6%. In contrast, the figures for chartered surveyors started the period 8% ahead of those of primary school teachers while staying marginally ahead in 2013 and 4.4% greater in 2019.

Table 58 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	676.9	100.0	704.4	100.0	755.2	100.0
Chartered surveyors	673.6	99.5	662.0	94.0	732.9	97.0

Table 59 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	623.5	100.0	655.1	100.0	702.3	100.0
Chartered surveyors	673.6	108.0	662.0	101.1	732.9	104.4

Average gross earnings exhibited a different picture, exceeding the corresponding amounts for both teaching groups in every year. In 2019, the chartered surveyor figure was just 1.6% ahead of the secondary school amount whereas it was 10.7% above the corresponding primary and nursery teacher level.

Looking back, chartered surveyors enjoyed average gross earnings leads over secondary teachers of between 3.2% and 6% between 2007 and 2013. The differentials with primary and nursery education teachers were all in favour of the non-teaching group ranging from 11.7% in 2013 up to 16.4% in 2007.

Indexed differentials of average gross earnings, 2007, 2013 and 2019

Table 60 Comparison with secondary education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	689.7	100.0	712.7	100.0	771.5	100.0
Chartered surveyors	731.4	106.0	735.6	103.2	784.2	101.6

Table 61 Comparison with primary and nursery education teachers

	2007		2013		2019	
	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	628.6	100.0	658.4	100.0	708.6	100.0
Chartered surveyors	731.4	116.4	735.6	111.7	784.2	110.7

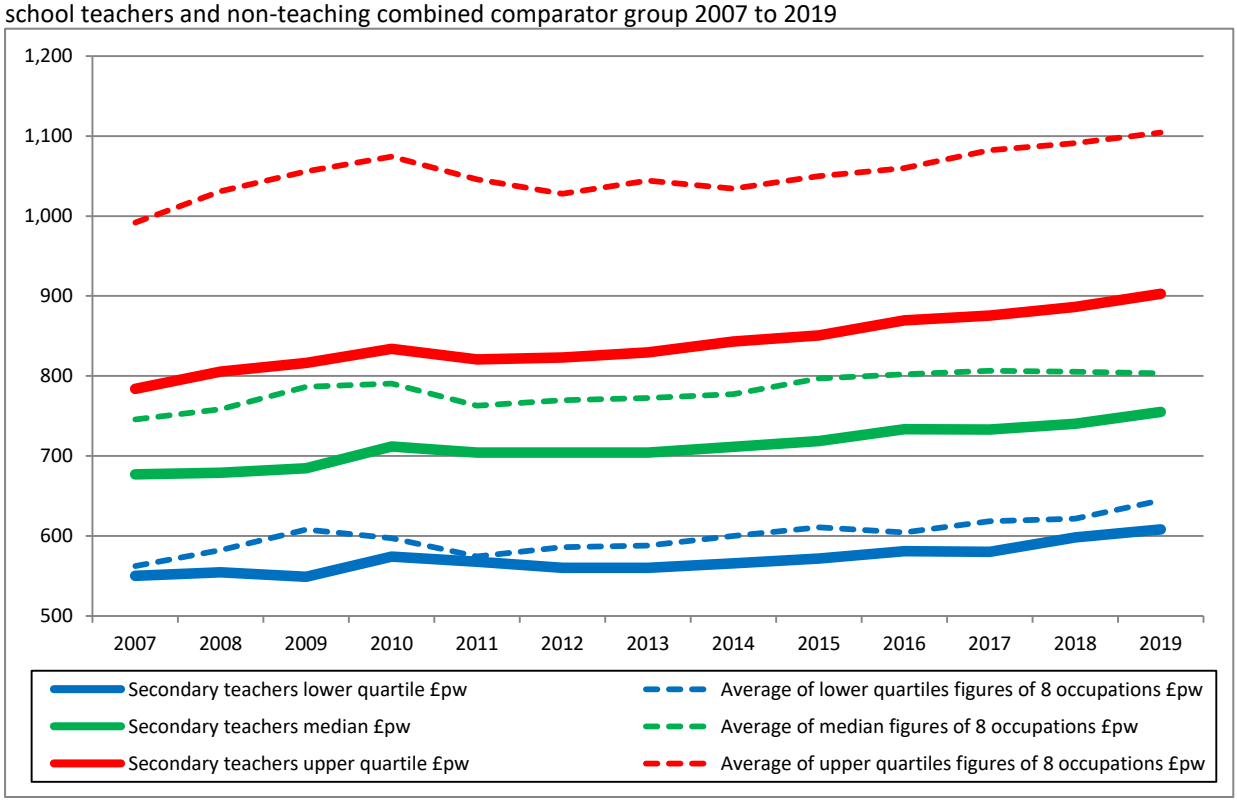
5.8 Analysis of quartiles

To gain a broader understanding of the whole spread of pay levels found in the various professions it is necessary to look beyond median and average pay levels and the ONS data offering makes this possible. This is because, in addition to median and average levels, ONS pay data includes figures that represent amounts earned at 10% intervals throughout the pay range as well as lower and upper quartile levels.

Last year, we extended our report to include an analysis of lower and upper quartile gross earnings. This year, we go further by also considering amounts at the two extremes of the various pay ranges – using the upper and lower decile figures as well as some of the available data points in between. 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.

Some of the main findings based on these figures are summarised in the introduction but the full analyses are presented here. Graph 21 below, for example, demonstrates the aggregate picture by plotting the difference between the lower quartile, median and upper quartile gross earnings for secondary school teachers between 2007 and 2019 against the combined aggregate equivalent figures for the eight non-teaching comparators.

Graph 21 Comparison of lower quartile, median and upper quartile gross earnings per week for secondary school teachers and non-teaching combined comparator group 2007 to 2019



Source: ASHE

Each of the combined figures is calculated by taking the average of the individual profession's lower quartile, median and upper quartile. In total, data from only eight of the ten non-teaching professions is used because the ONS did not give quartile figures in every year for chemical and physical scientists due to sample size limitations.

What the graph shows is that all three figures – lower quartile, median and upper quartile – were greater for the non-teaching comparator group (represented by dotted lines) 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 over time.

For example, in 2019 the non-teaching lower quartile figure, at £644.50 per week, was 5.6% higher than the equivalent teaching figure of £608.30. By contrast, the median and upper quartile differentials were 6.4% and 22.4% in favour of the non-teaching groups. At the median, the non-teaching figure was £803.30 while the equivalent teaching figure was £755.20. At the upper quartile level the difference was over £200 per week with the respective figures standing at £1,104.40 and £902.60 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.

Another point to note about the graph above is that it shows figures for 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 2019 stood at £565.10 and £809.70 per week, compared to equivalent amounts of £608.30 and £902.60 for secondary teachers.

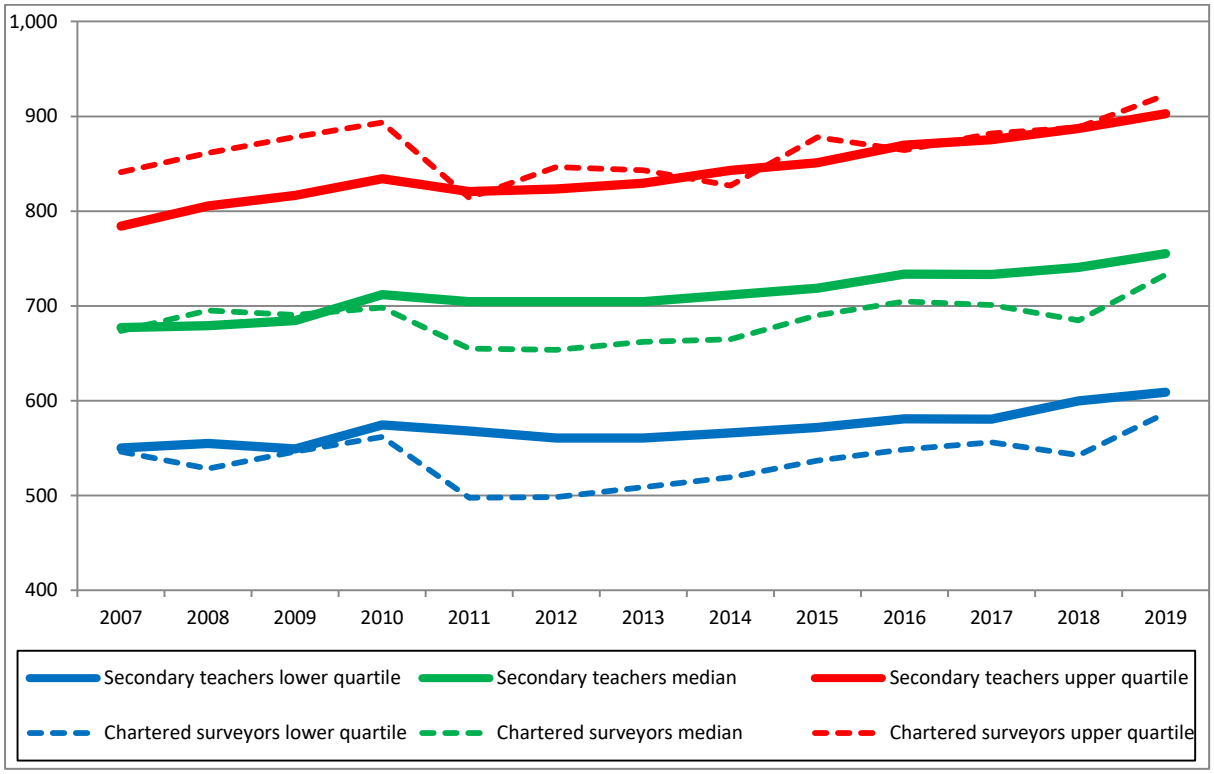
In parallel with our previous aggregate analyses, we acknowledge that combining quartile data into one figure may risk the danger of being overly influenced by very high- or low-paying professions. Because of this, similar graphs for selected non-teaching groups at the lower and higher ends of the earnings distribution are shown below.

First among this selection of these more focused graphs are the lowest-paid profession, 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.

Just after the financial crisis, however, 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 generally very similar. What is also noticeable from the graph is that in the latest year the surveyor trend line has risen more than the equivalent teaching trend.

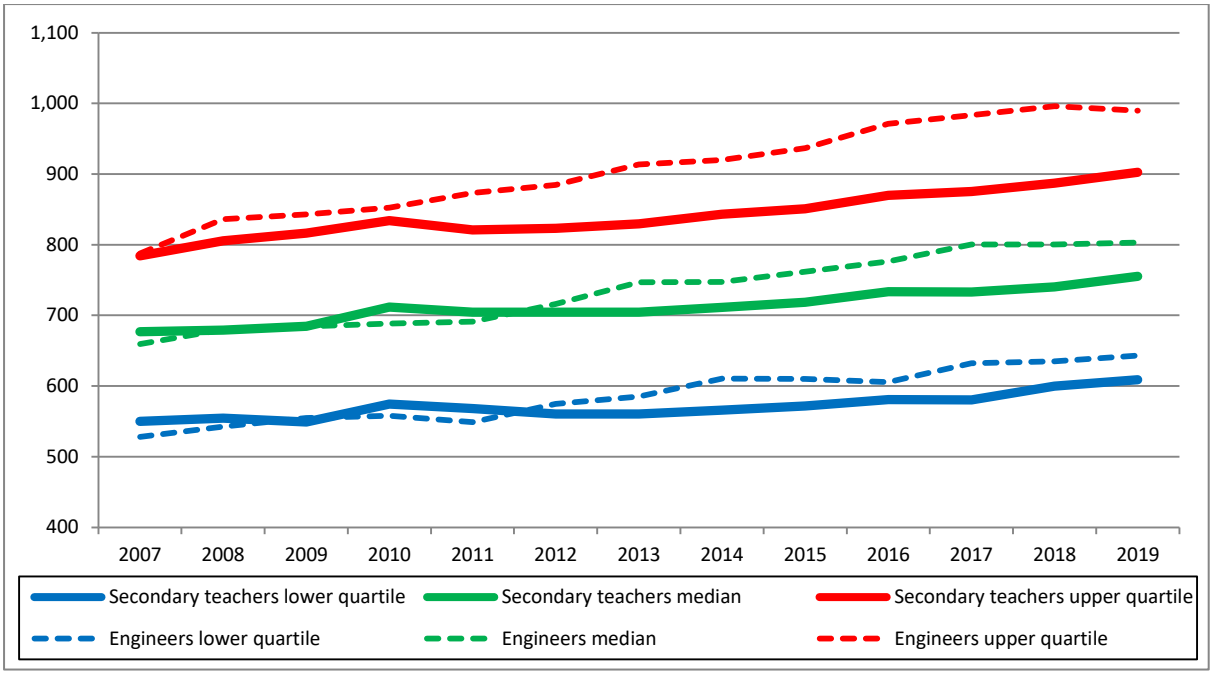
Graph 22 Comparison of lower quartile, median and upper quartiles gross pay per week for secondary school teachers and chartered surveyors 2007 to 2019



Source: ASHE

Chartered surveyors are the lowest-paid of the non-teaching professions but how do secondary teachers compare with the other graduate jobs? Graph 23 shows a similar analysis for engineers, the second-lowest paid non-teaching professional group with available data in 2019. It shows that, unlike surveyors, engineers enjoyed relatively higher earnings as measured by lower quartile, median and upper quartile levels throughout most of the last decade. More specifically, the engineers' lower quartile, median and upper quartile figures finished the period 5.6%, 6.3% and 9.6% higher than the equivalent secondary school figures.

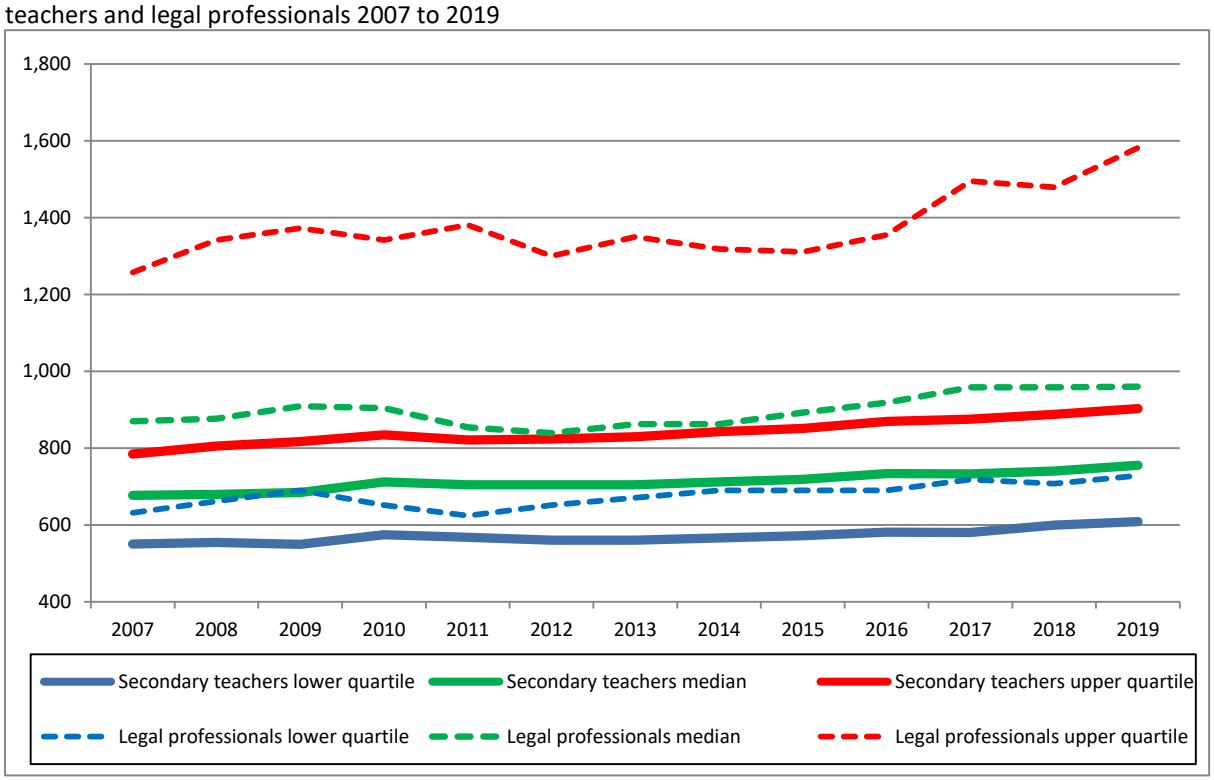
Graph 23 Comparison of lower quartile, median and upper quartiles gross pay per week for secondary school teachers and engineers 2007 to 2019



Source: ASHE

To provide a more comprehensive picture, Graph 24 shows the corresponding analysis for legal professionals, the highest-paid group from the comparator occupations. It shows that legal professionals' gross earnings were significantly ahead of those of the teaching group throughout the period. In fact, as the graph shows, the differentials were relatively stable throughout the period. In 2019, the secondary teachers' lower quartile, median and upper quartile levels trailed the legal equivalents by 19.6%, 27% and 75.2% respectively. Moreover, it also shows that median legal figures throughout the period were actually higher than the corresponding secondary teacher upper quartile.

Graph 24 Comparison of lower quartile, median and upper quartiles gross pay per week for secondary school teachers and legal professionals 2007 to 2019



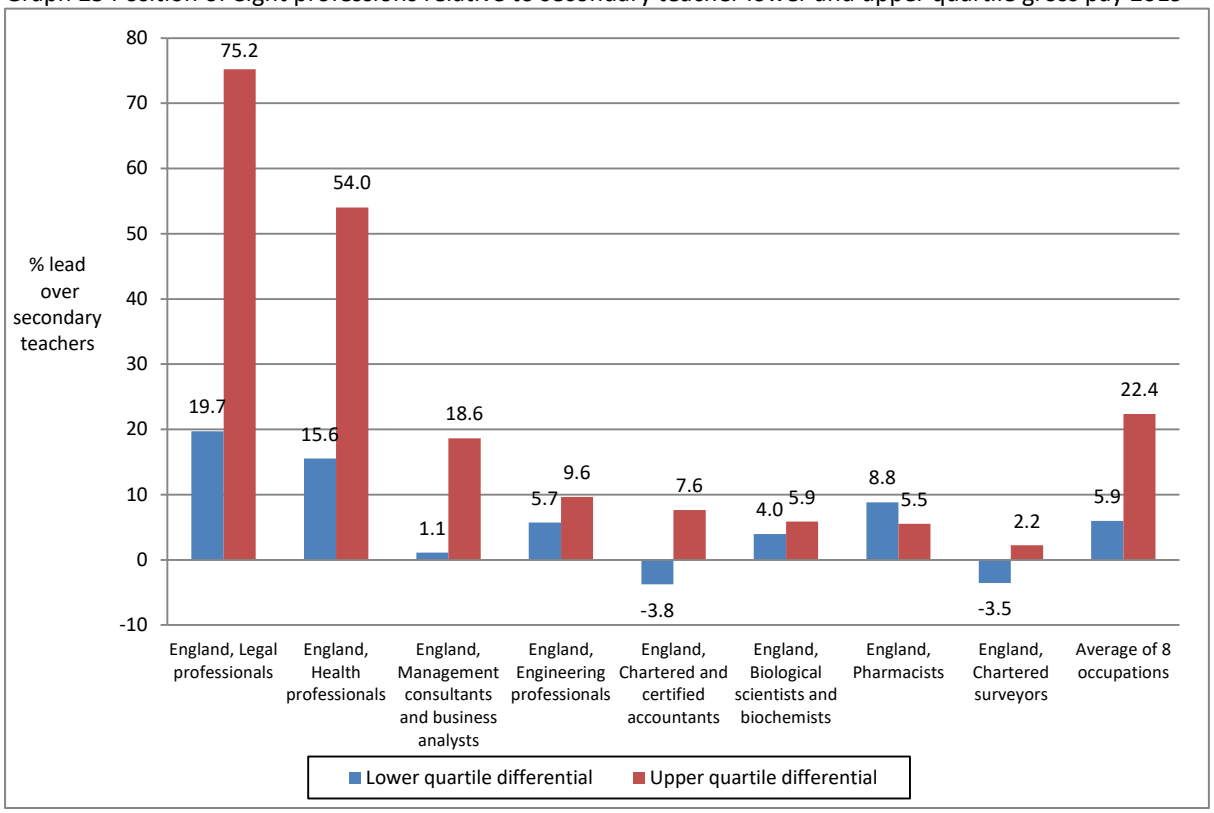
Source: ASHE

5.9 Individual quartile analysis

An alternative method of assessing the size of differentials between the lower and upper quartile levels for each of the eight non-teaching professions and the equivalent secondary teacher figures is presented in Graph 25. It shows that lower quartile gross earnings for secondary school teachers in 2019 were below the equivalent figures for six professions and higher in the case of two – accountants and surveyors.

Variations were greater when the upper quartile figures were examined, however, with differences in 2019 ranging between 2.2% in favour of chartered surveyors up to 75.2% where the legal figure was greater. The full range of differentials for each profession, both in terms of lower and upper quartile levels, is shown in the graph below.

Graph 25 Position of eight professions relative to secondary teacher lower and upper quartile gross pay 2019



Source: ASHE

5.10 Decile and further analysis

The ONS also provides statistics showing the earnings levels at different points on the pay scale for each professional group. For example, as well as medians, averages and quartiles, ONS data shows earnings of individuals placed at 10% intervals throughout the whole pay range. As a result, it is possible to extending the analysis further by examining some of these decile points.

At the very top and bottom of the pay ranges, the ONS showed lower decile gross earnings figures for ten professions and upper decile data for five jobs. Considering the ten lower decile gross earnings amounts, the two teaching amounts were placed seventh and eighth in the overall rankings. The secondary teacher lower decile stood at £490.50 per week while the corresponding primary and nursery amount was £454.60.

Only pharmacists and accountants were lower with weekly earnings of around £450 per week and both these results were based on less precise estimates as indicated by the ONS and may in fact partly reflect earnings of unqualified staff. Of the other professions with lower quartile figures

shown, amounts ranged from just under £500 per week for surveyors and management consultants up to around £550 per week for legal and health professionals.

At the other end of the spectrum, a comparison of the top end upper decile levels demonstrates that teachers in this bracket received the smallest gross earnings levels when compared with other professions. While only five professions, including both teaching groups, had sample sizes large enough to merit figures, the two teaching groups were placed fourth and fifth. In fact, as Table 63 below illustrates, for all the statistical points above the median level that the ONS provides for gross earnings, both teaching groups fall predominantly at the bottom of the comparator table for each of them.

Table 62 Position of both teaching groups when measured by gross earnings at upper pay levels

	60th percentile pay level	70th percentile pay level	75th percentile pay level	80th percentile pay level	90th percentile pay level (highest shown)
Primary and nursey teacher position	9th	10th	9th	9th	4th
Primary and nursery teacher pay level (£pw)	£751	£785	£810	£855	£977
Secondary teacher position	11th	12th	10th	10th	5th
Secondary teacher pay level (£pw)	£808	£866	£903	£940	£1,040
Number of jobs providing data	12	12	10	10	5
Range of values in non-teaching (pw)	£684 to £1,200	£845 to £1,448	£923 to £1,581	£977 to £1,725	£1,188 to £2,062

Source: ONS

Based on these and the quartile findings, it is clear that while differences in earnings between teachers and other professions are a source of concern at average and median levels, there are even greater differentials at higher earnings levels. The analysis of lower quartile figures shows that gross earnings in teaching are just about on a par with those of the combined non-teaching group. Focusing higher up the pay ranges shows that even at median levels, teaching pay trails the majority of other professions whereas from the upper quartile onwards, both secondary and primary teachers prop up the pay table.

Once higher levels are analysed, it is clear that differentials with non-teaching professions get wider and when the top 25% of earnings for each profession is considered, teaching is the lowest-paid profession at every level.

In the past, the focus has been on issues at the bottom end of the teaching pay range with recent and proposed pay awards focused on new joiners. While such issues persist, this analysis shows that relatively low gross earnings in teaching exist at all points of the earnings distribution with the greatest differentials actually found at the upper end.

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 2019.

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.

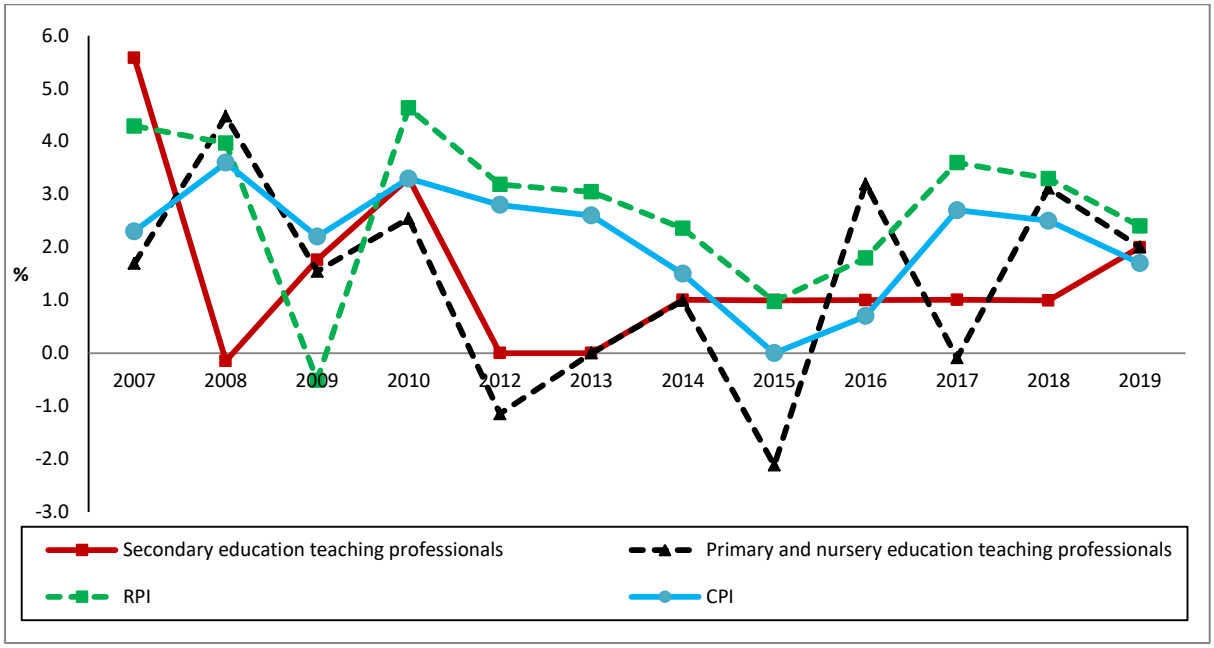
For example, figures for some of the professions with relatively small indicative sample sizes, such as those from the science professions, may be more prone to large variations. In fact, many of the graphs do demonstrate large fluctuations, including negative movements in certain years. This does not 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.

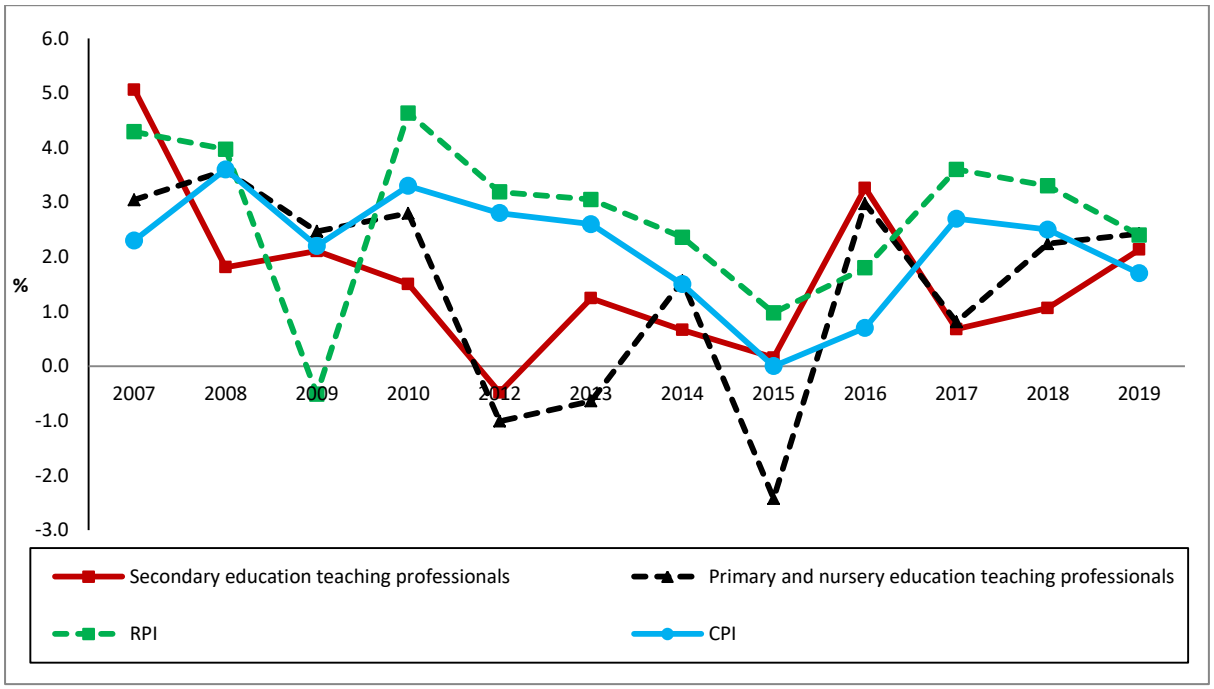
Details for graphs relating to all of the non-teaching professions relative to the two teaching groups and RPI follow.

Graph 26 Percentage change in median basic earnings for teachers in England against RPI 2007 to 2019

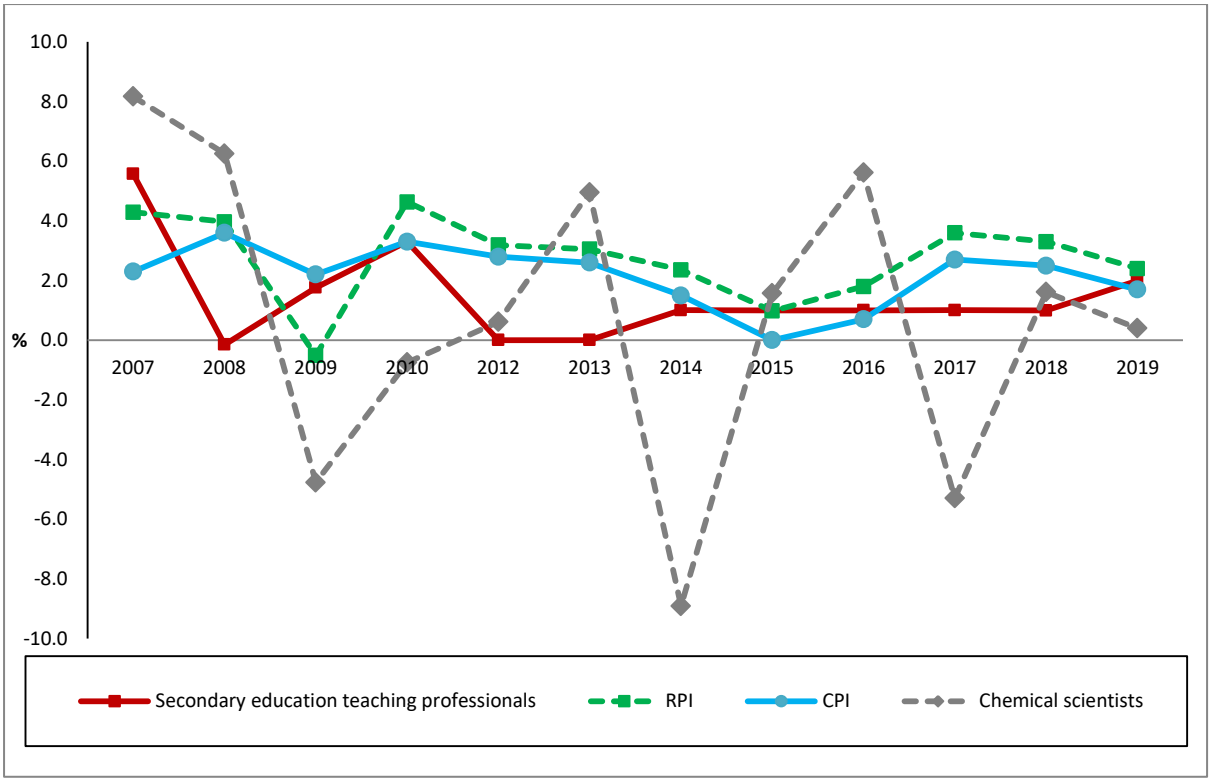


Graph 27 illustrates that a similar trend can be observed for teachers' average basic earnings in England although in this case both the secondary and primary teacher figures were higher than the corresponding CPI and RPI figures in 2016.

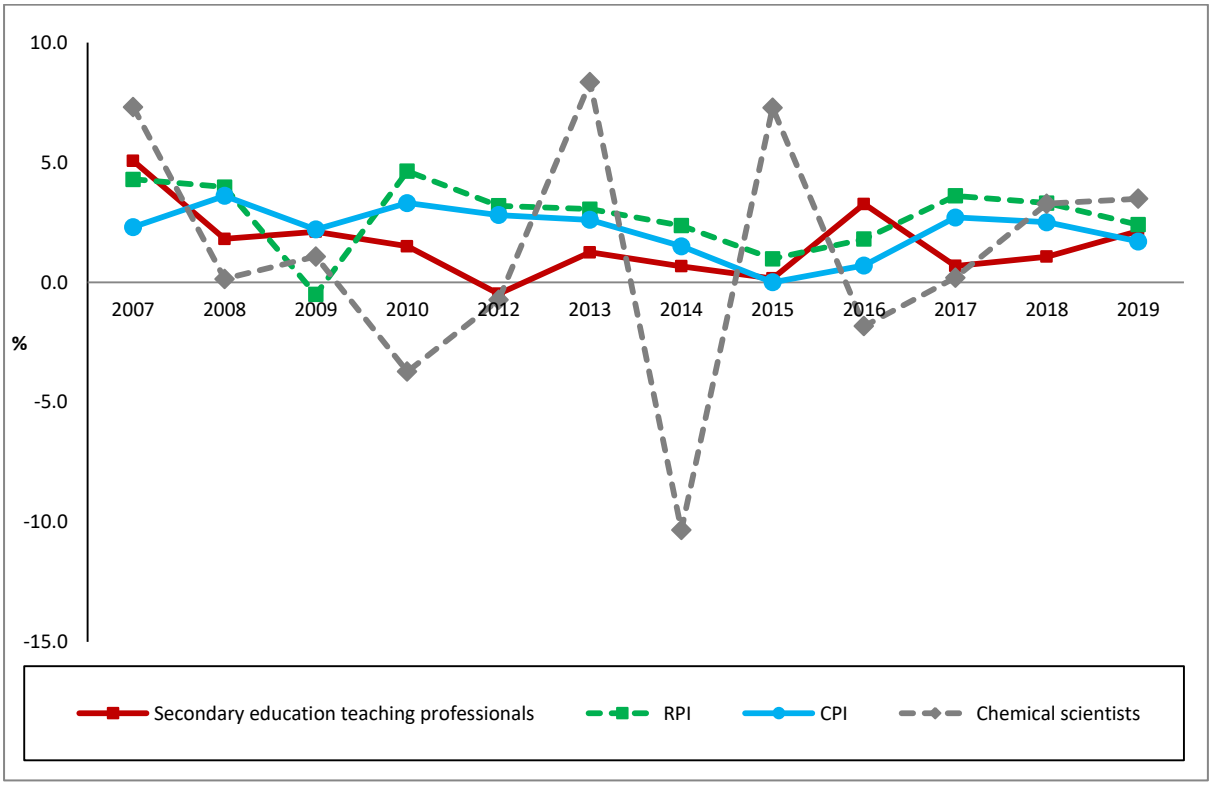
Graph 27 Percentage change in average basic earnings for teachers in England against RPI 2007 to 2019



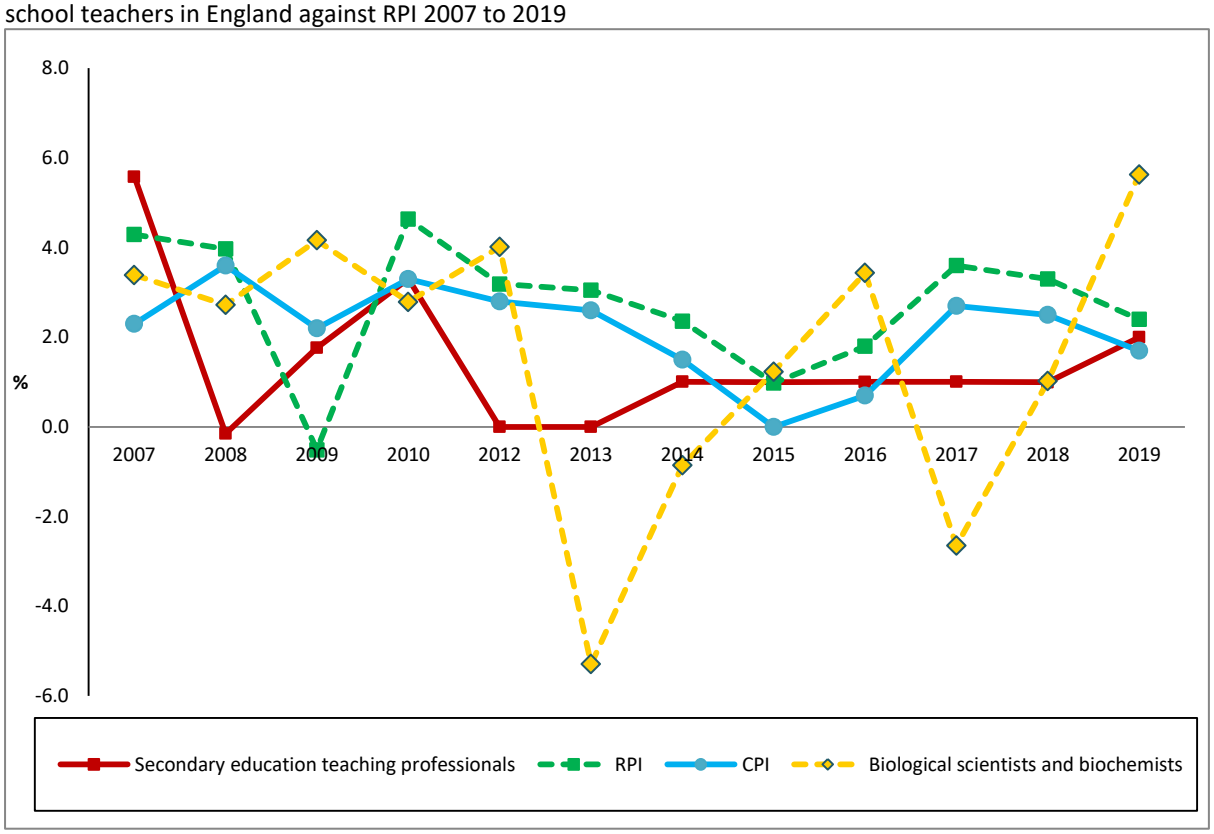
Graph 28 Percentage change in median basic earnings for chemical scientists and secondary school teachers in England against RPI 2007 to 2019



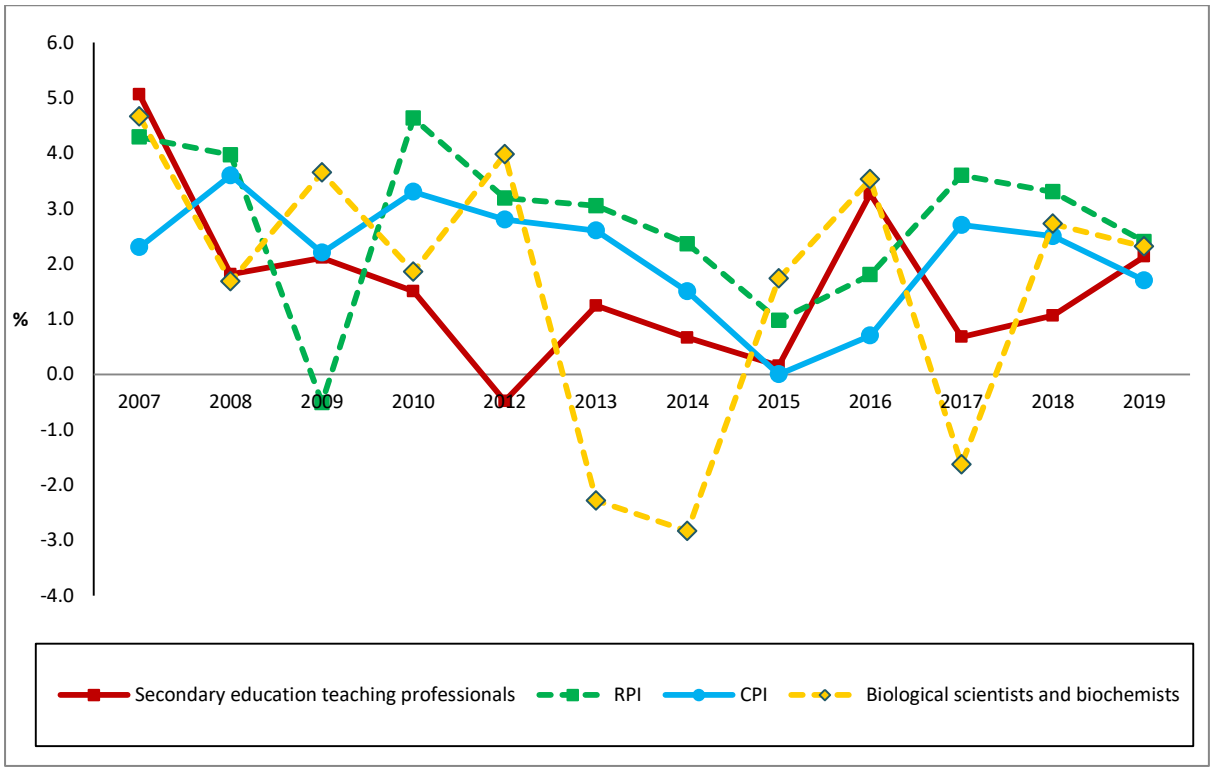
Graph 29 Percentage change in average basic earnings for chemical scientists and secondary school teachers in England against RPI 2007 to 2019



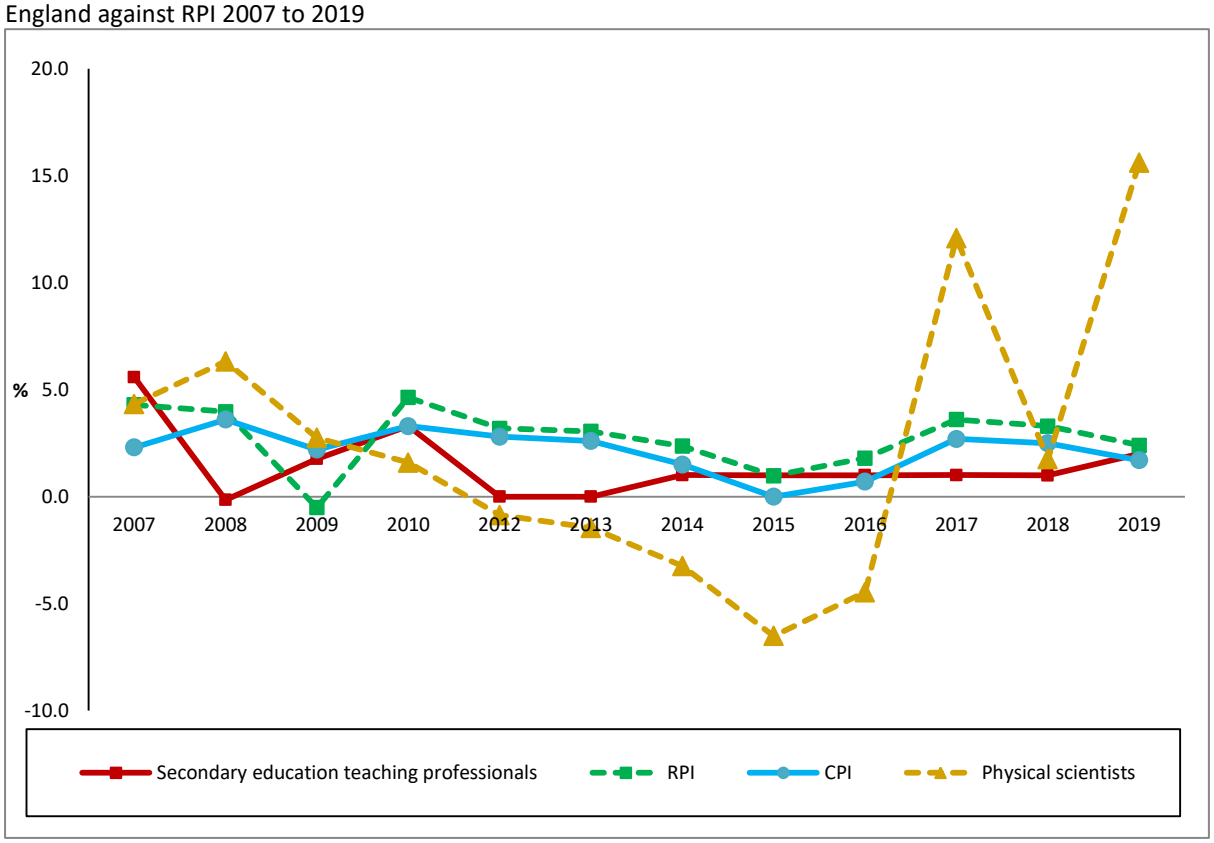
Graph 30 Percentage change in median basic earnings for biological scientists and biochemists and secondary school teachers in England against RPI 2007 to 2019



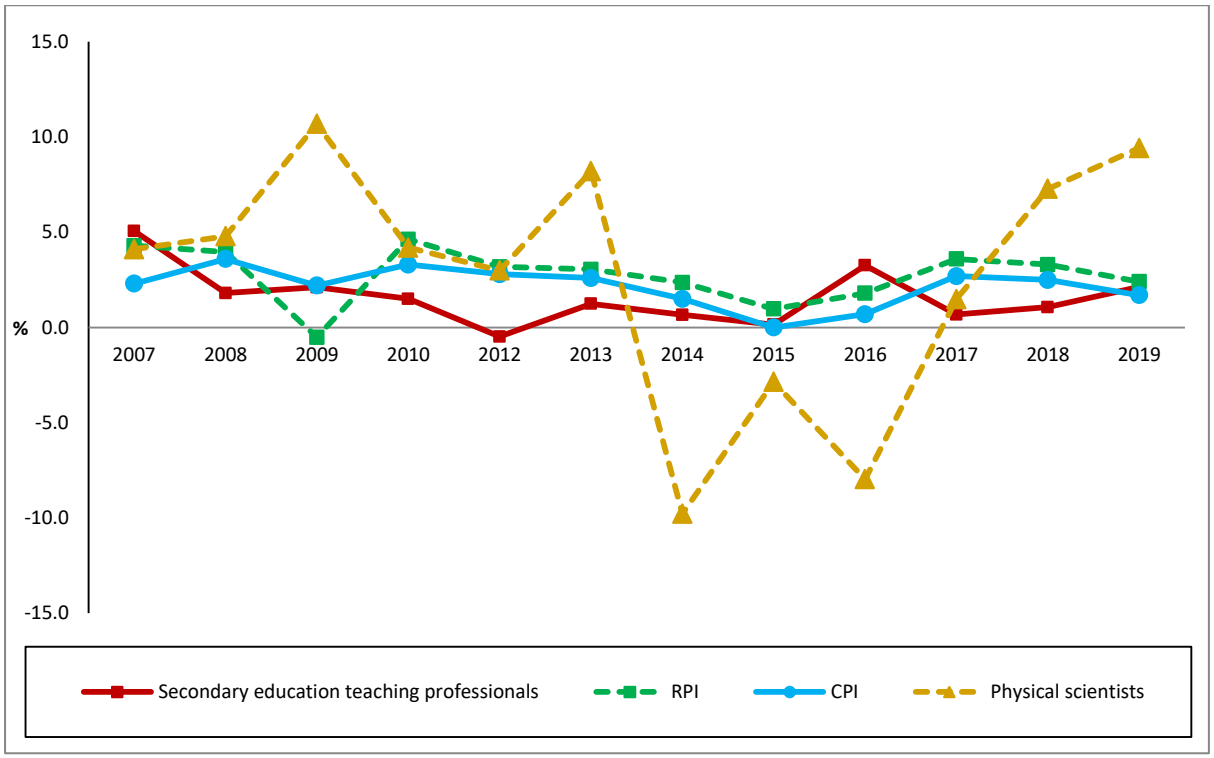
Graph 31 Percentage change in average basic earnings for biological scientists and secondary school teachers in England against RPI 2007 to 2019



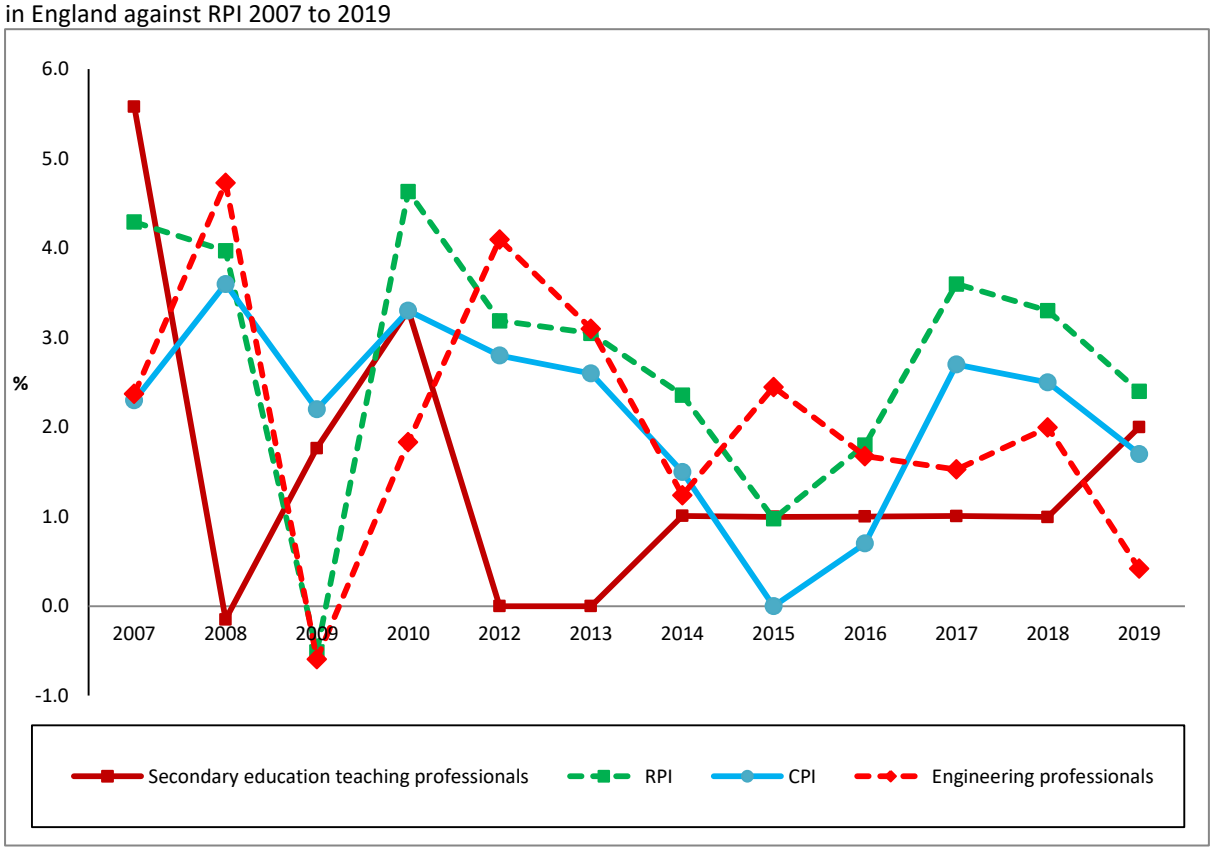
Graph 32 Percentage change in median in earnings for physical scientists and secondary school teachers in England against RPI 2007 to 2019



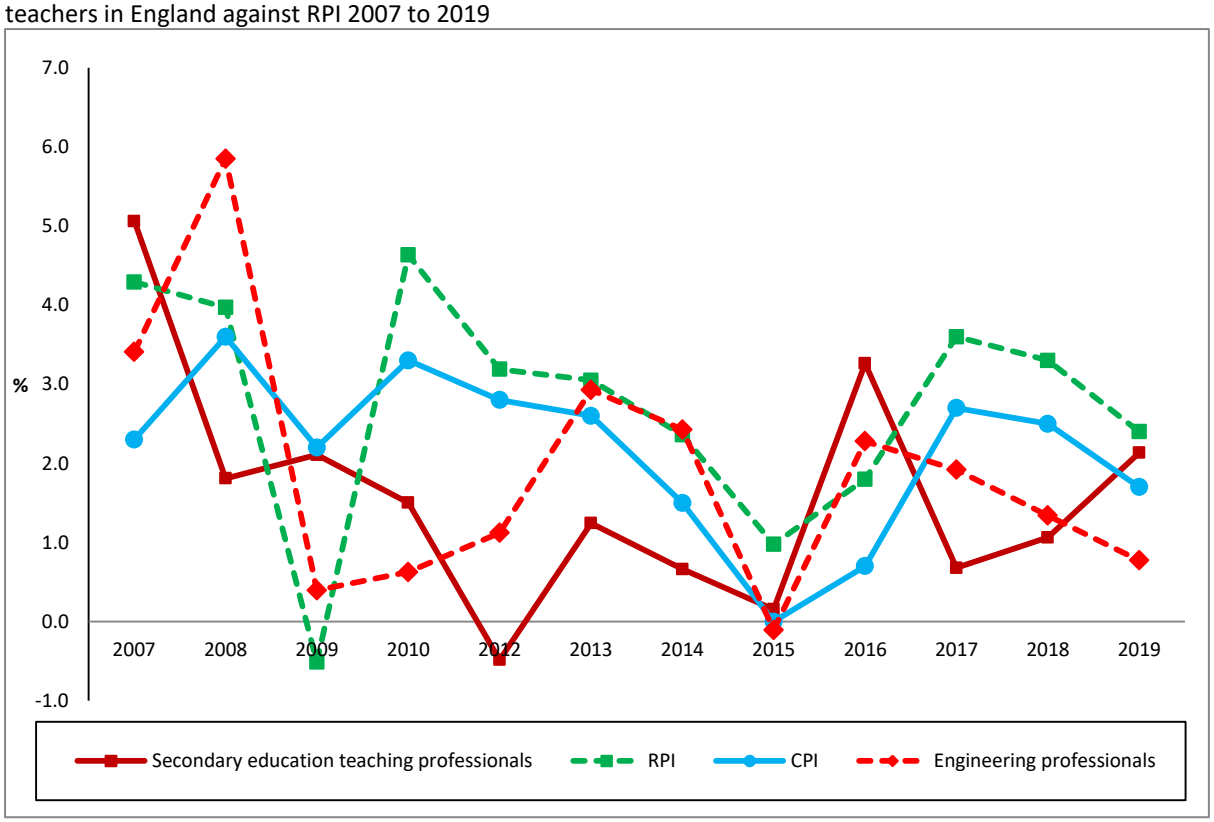
Graph 33 Percentage change in average basic earnings for physical scientists and secondary school teachers in England against RPI 2007 to 2019



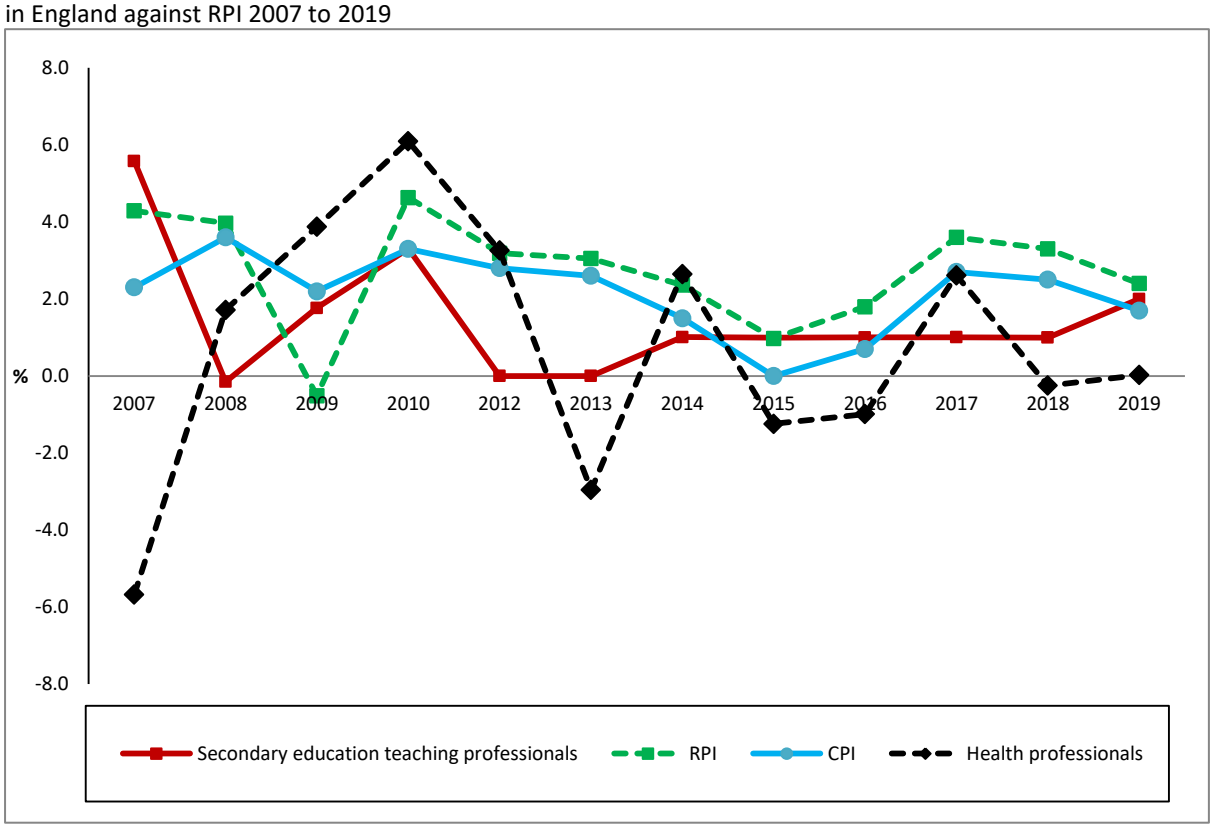
34 Percentage change in median basic earnings for engineering professionals and secondary school teachers in England against RPI 2007 to 2019



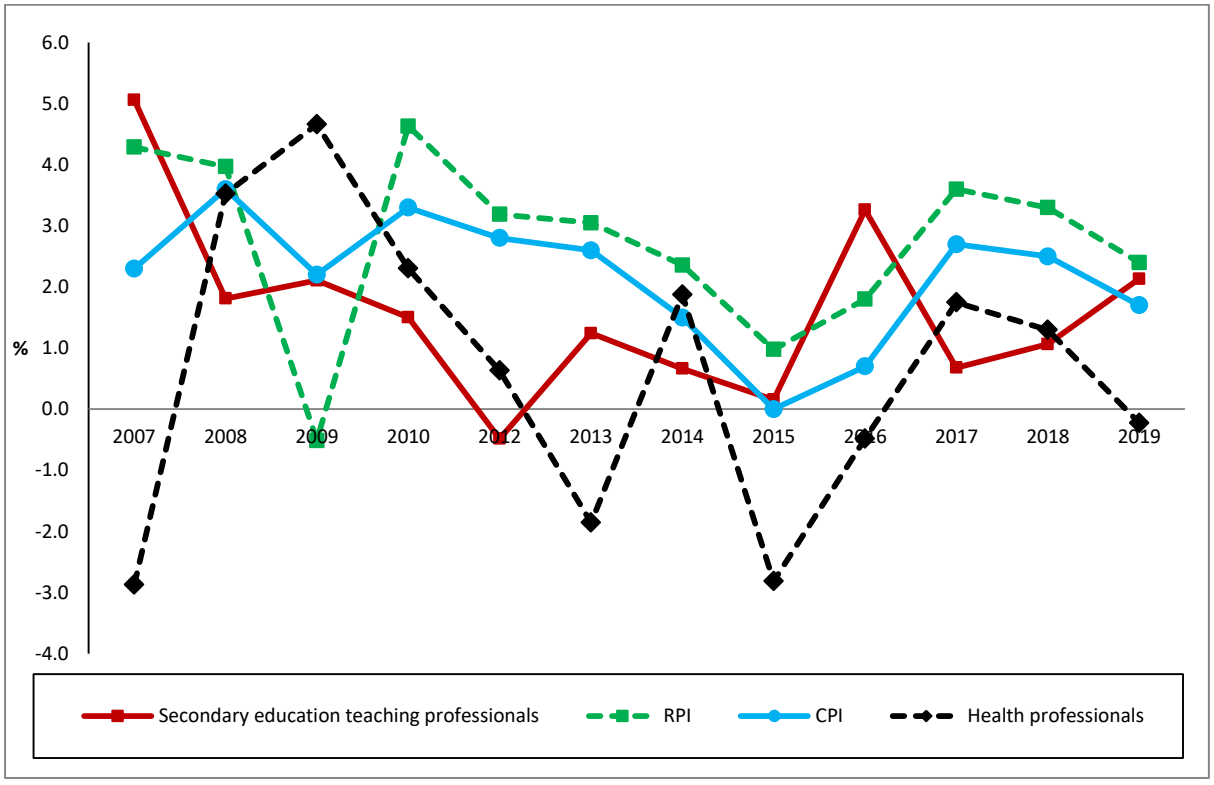
Graph 35 Percentage change in average basic earnings for engineering professionals and secondary school teachers in England against RPI 2007 to 2019



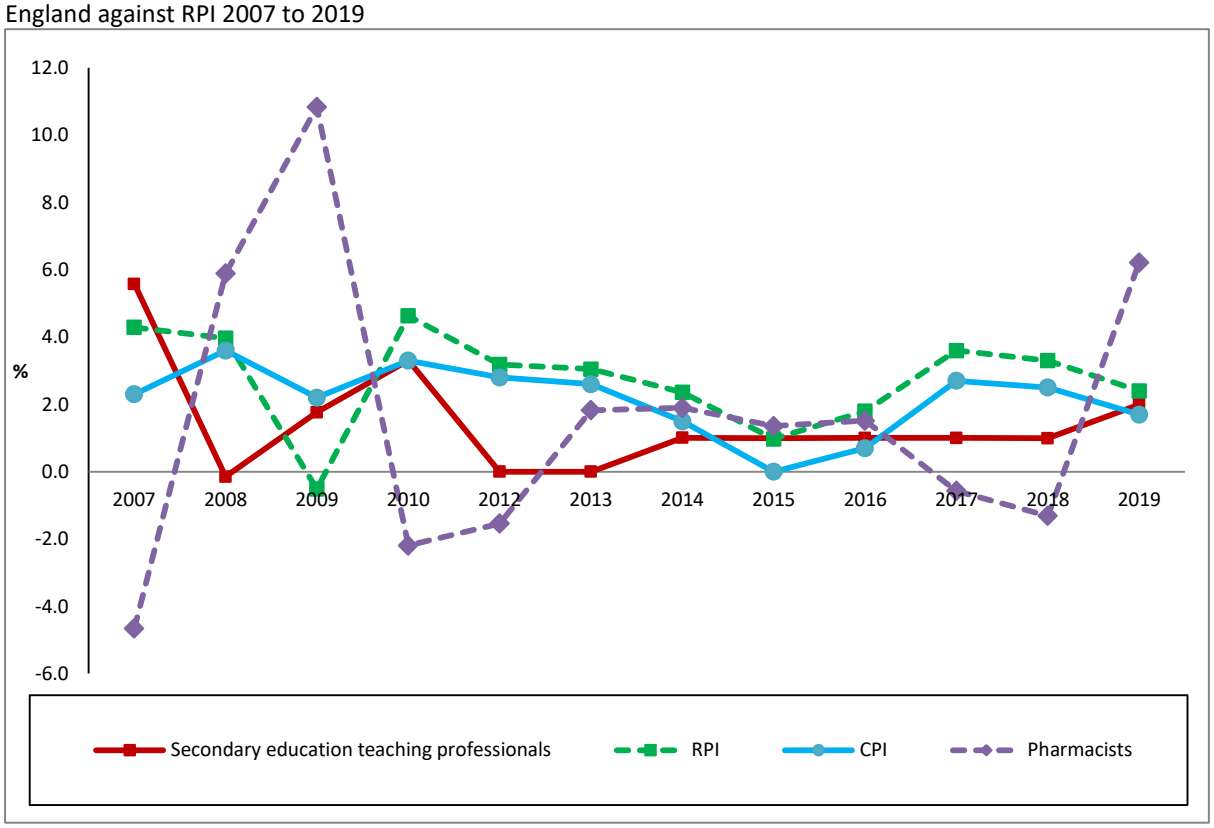
Graph 36 Percentage change in median basic earnings for health professionals and secondary school teachers in England against RPI 2007 to 2019



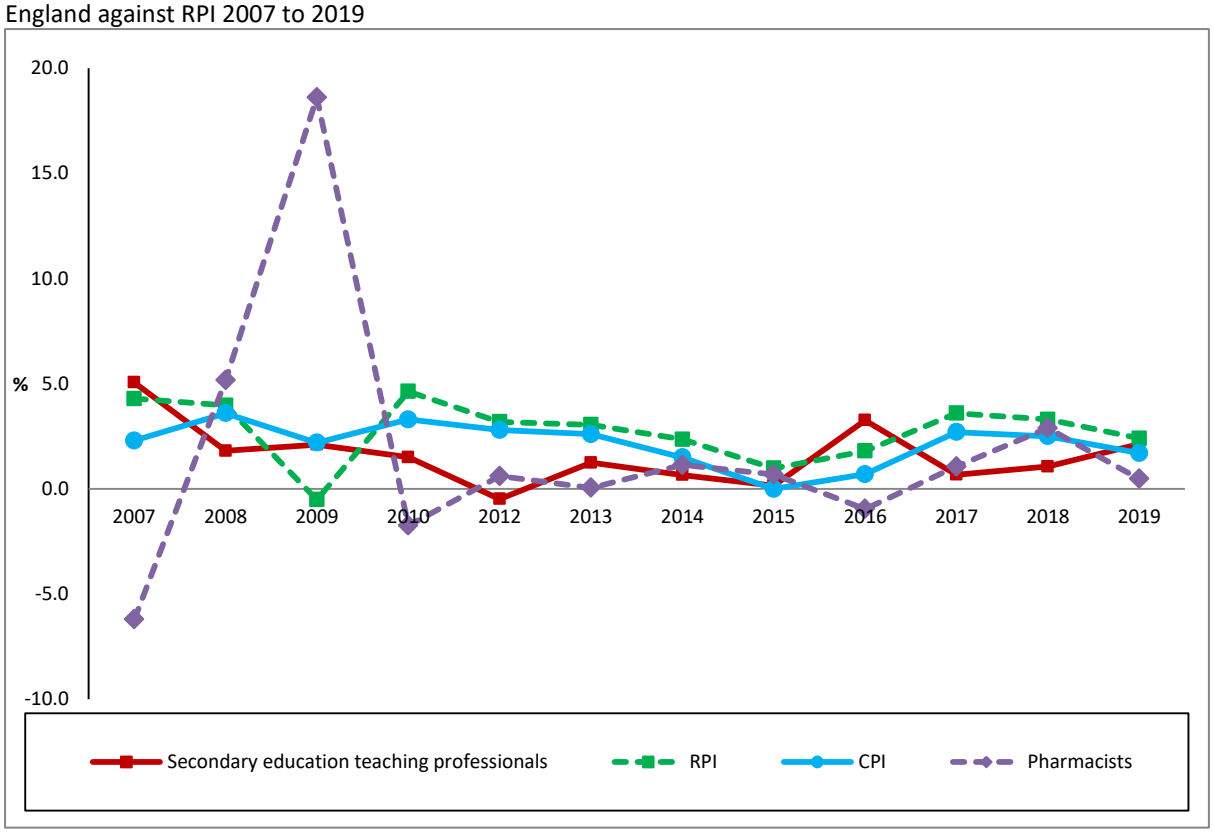
Graph 37 Percentage change in average basic earnings for health professionals and secondary school teachers in England against RPI 2007 to 2019



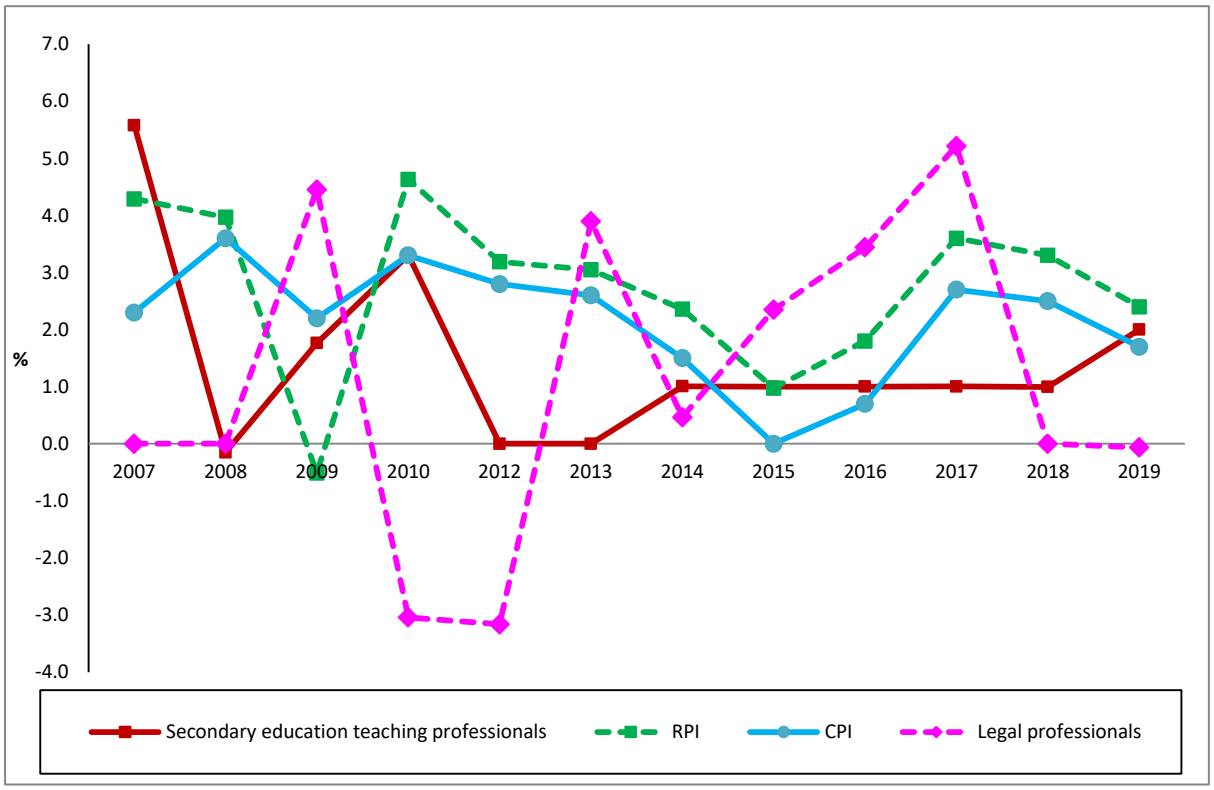
Graph 38 Percentage change in median basic earnings for pharmacists and secondary school teachers in England against RPI 2007 to 2019



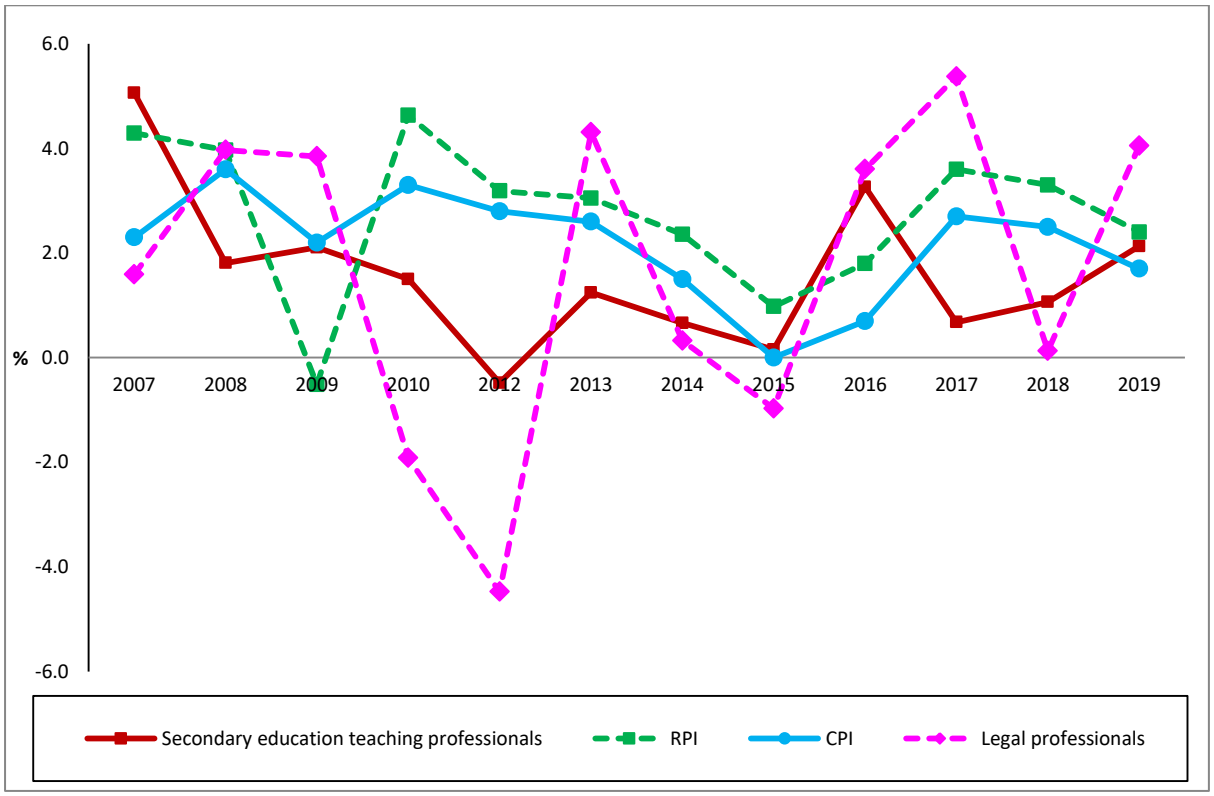
Graph 39 Percentage change in average basic earnings for pharmacists and secondary school teachers in England against RPI 2007 to 2019



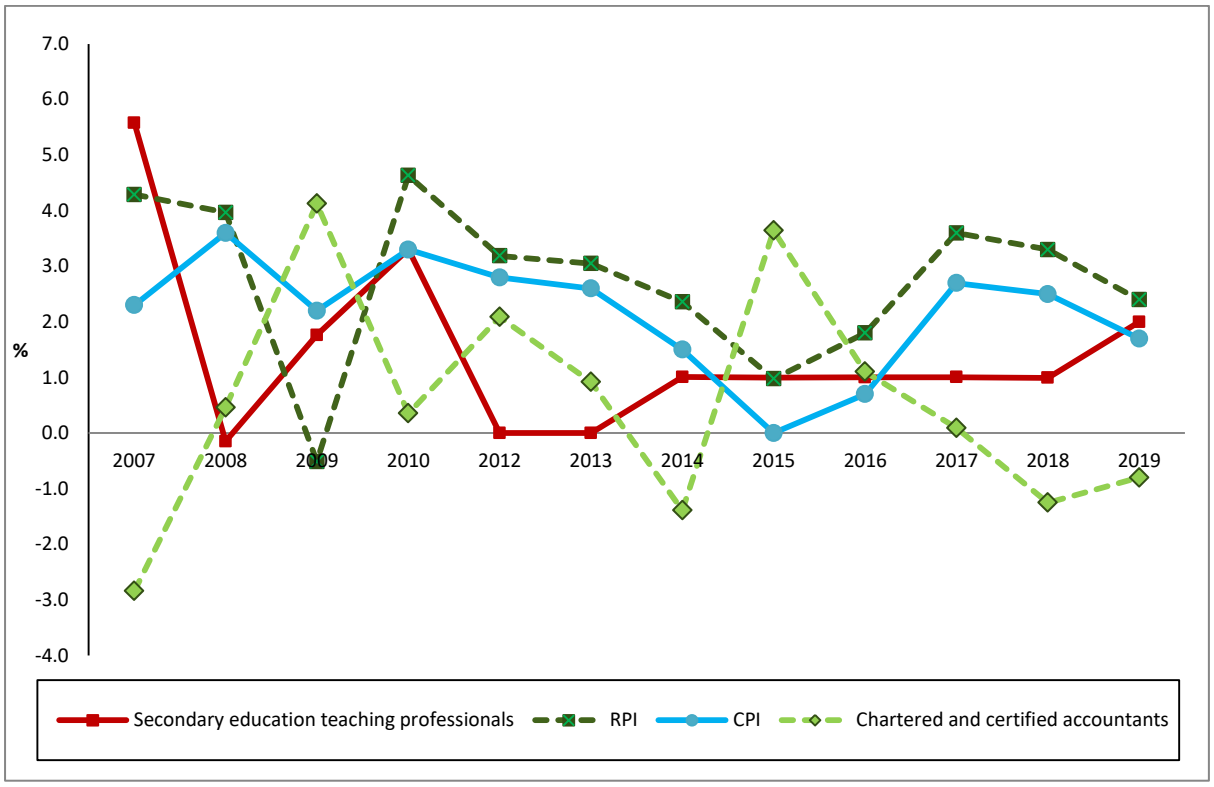
Graph 40 Percentage change in median basic earnings for legal professionals and teachers in England against RPI 2007 to 2019



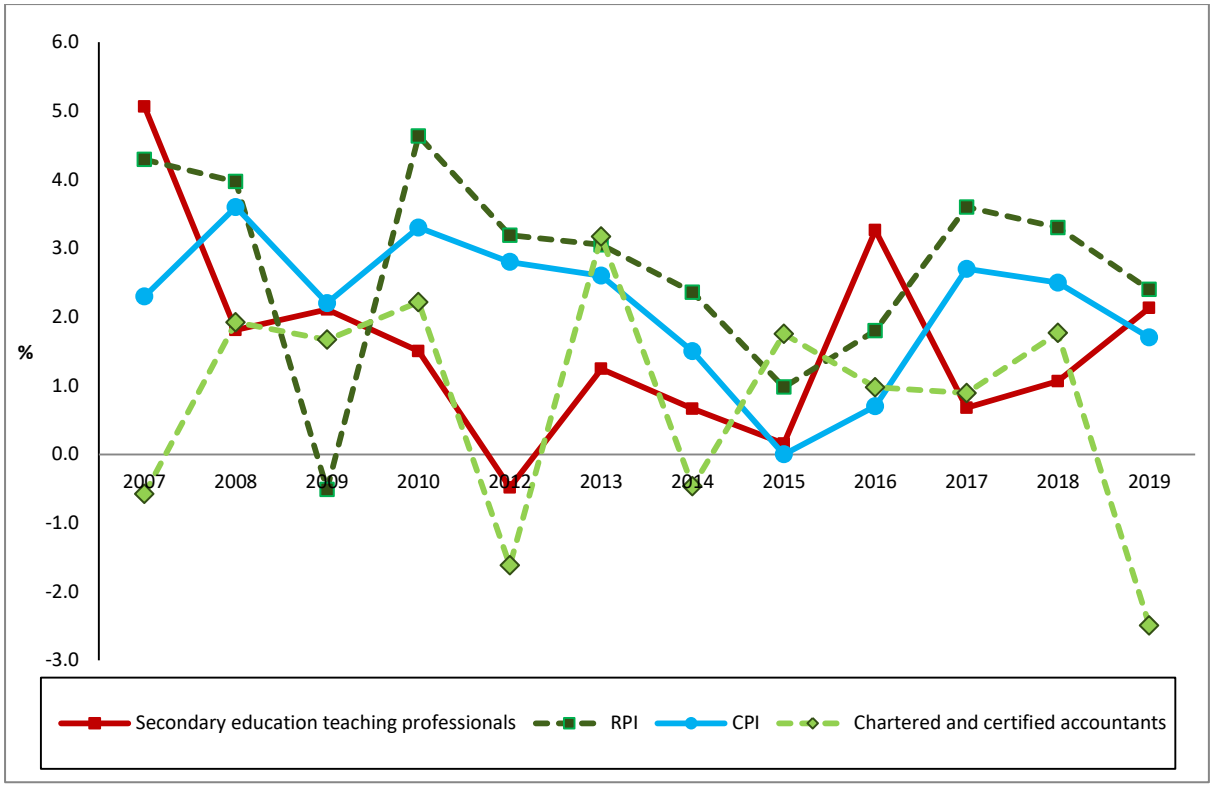
Graph 41 Percentage change in average basic earnings for legal professionals and teachers in England against RPI 2007 to 2019



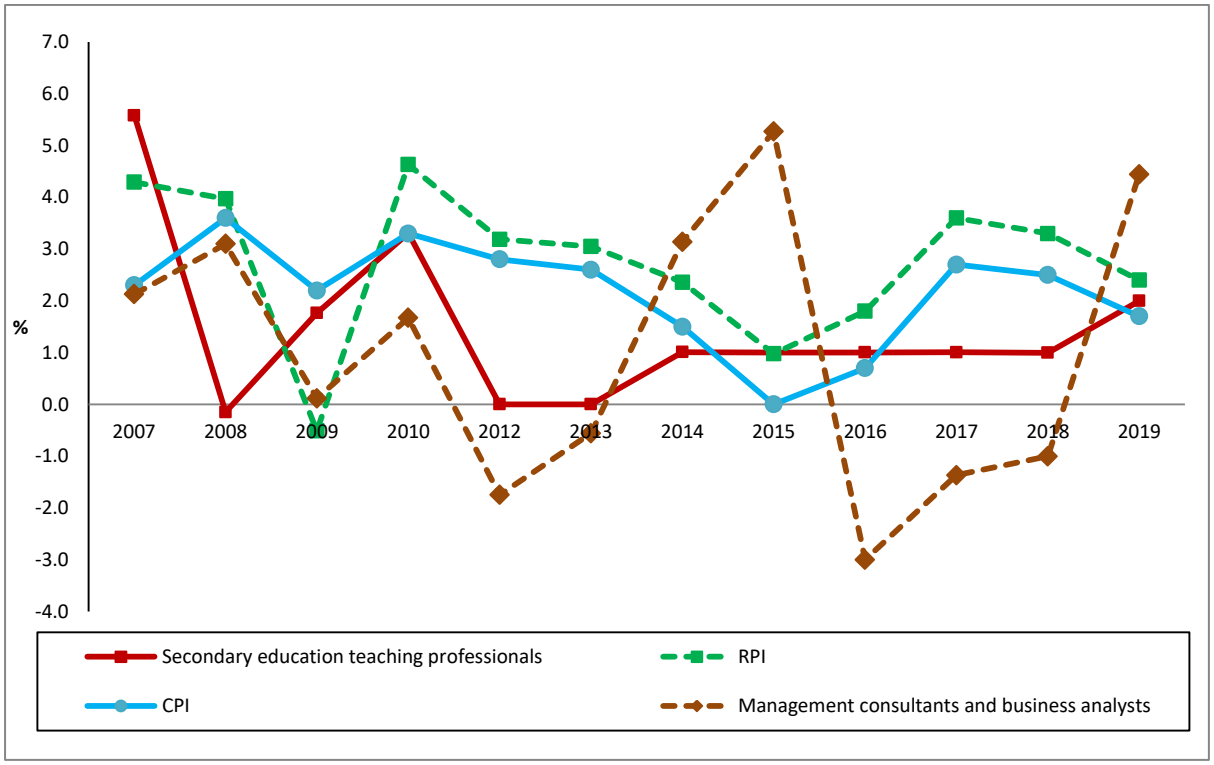
Graph 42 Percentage change in median basic earnings for chartered and certified accountants and teachers in England against RPI 2007 to 2019



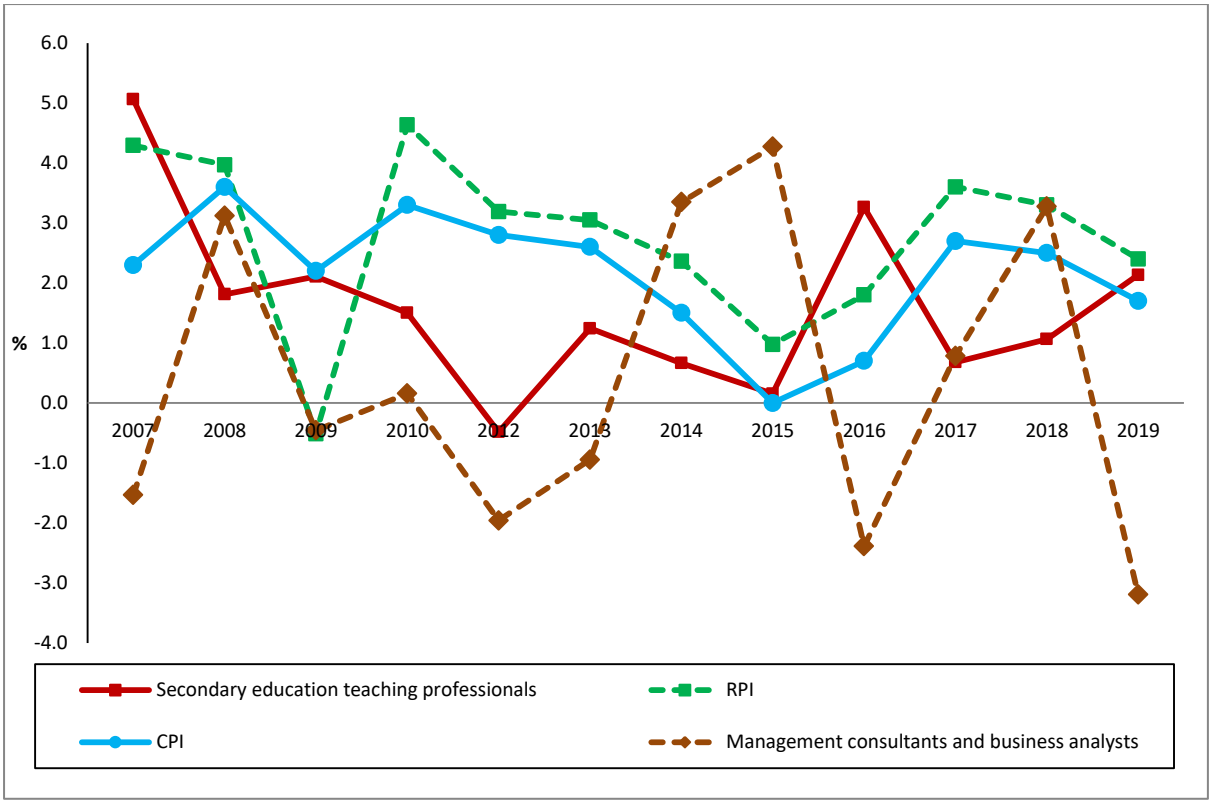
Graph 43 Percentage change in average basic earnings for chartered and certified accountants and teachers in England against RPI 2007 to 2019



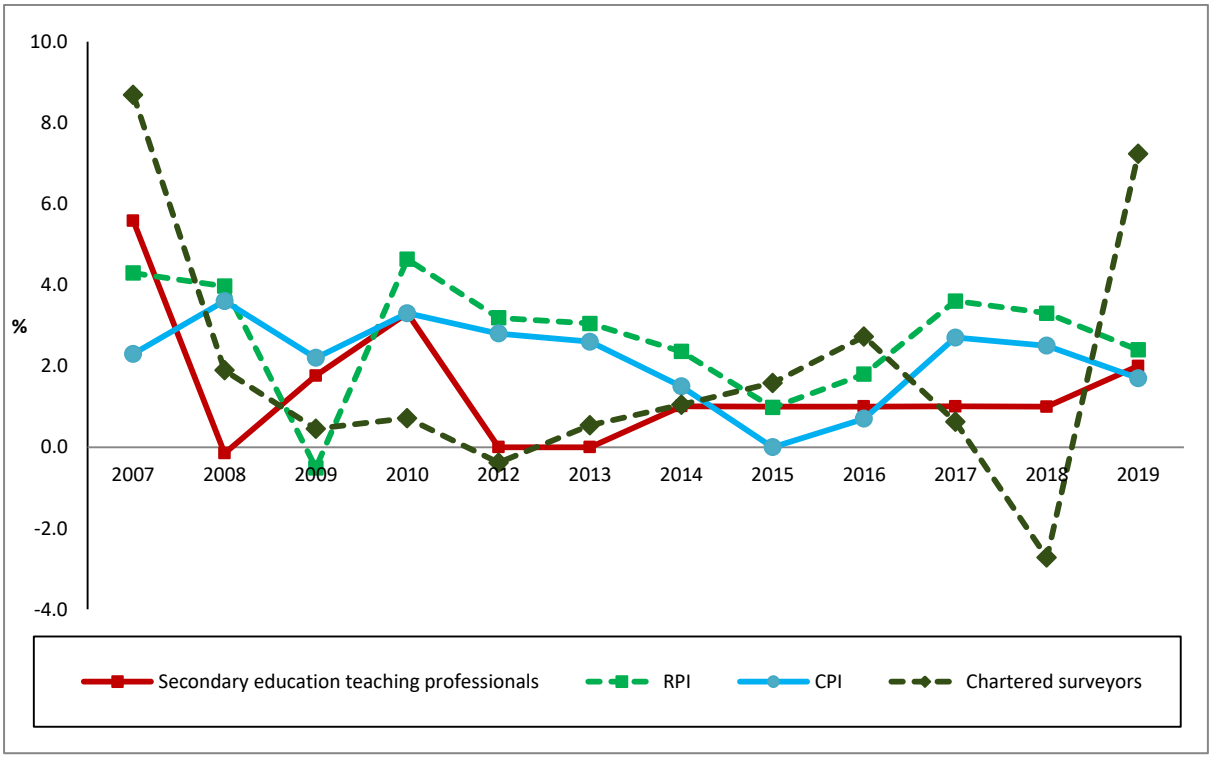
Graph 44 Percentage change in median basic earnings for management consultants and business analysts and teachers in England against RPI 2007 to 2019



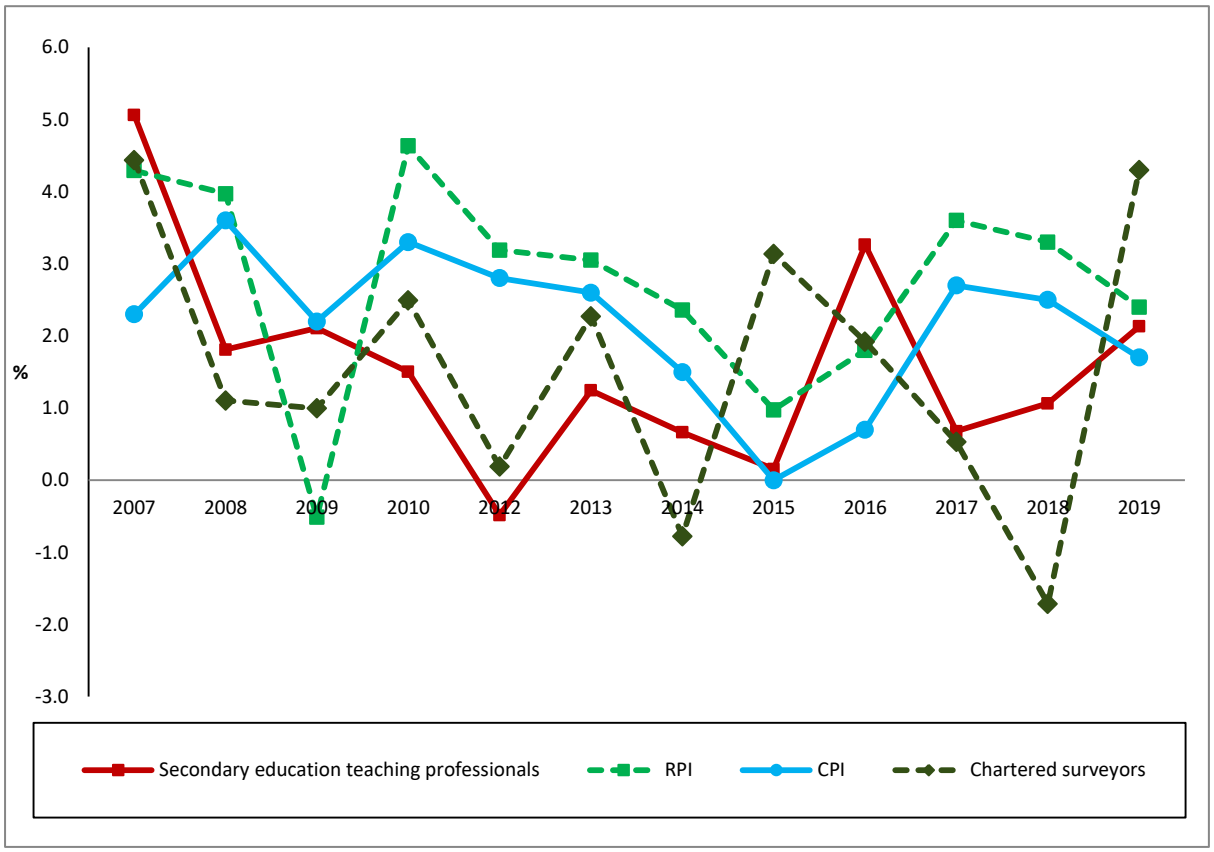
Graph 45 Percentage change in average basic earnings for management consultants and business analysts and teachers in England against RPI 2007 to 2019



Graph 46 Percentage change in median basic earnings for chartered surveyors and teachers in England against RPI 2007 to 2019

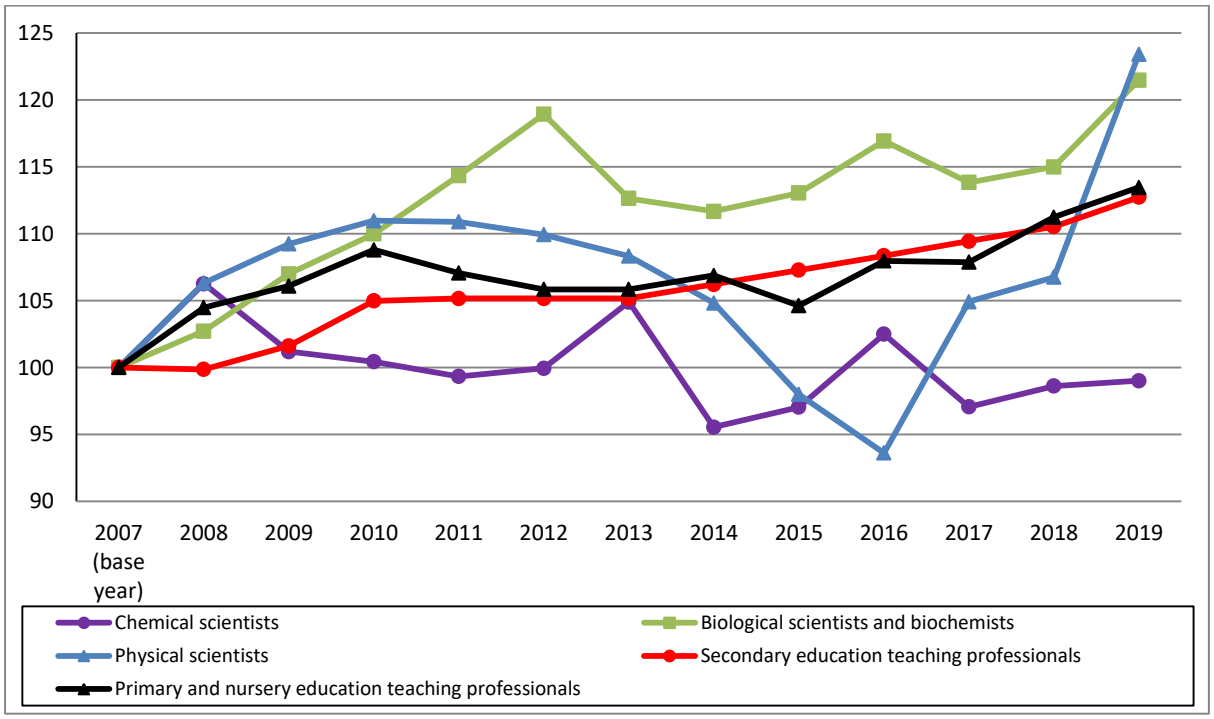


Graph 47 Percentage change in average basic earnings for chartered surveyors and teachers in England against RPI 2007 to 2019



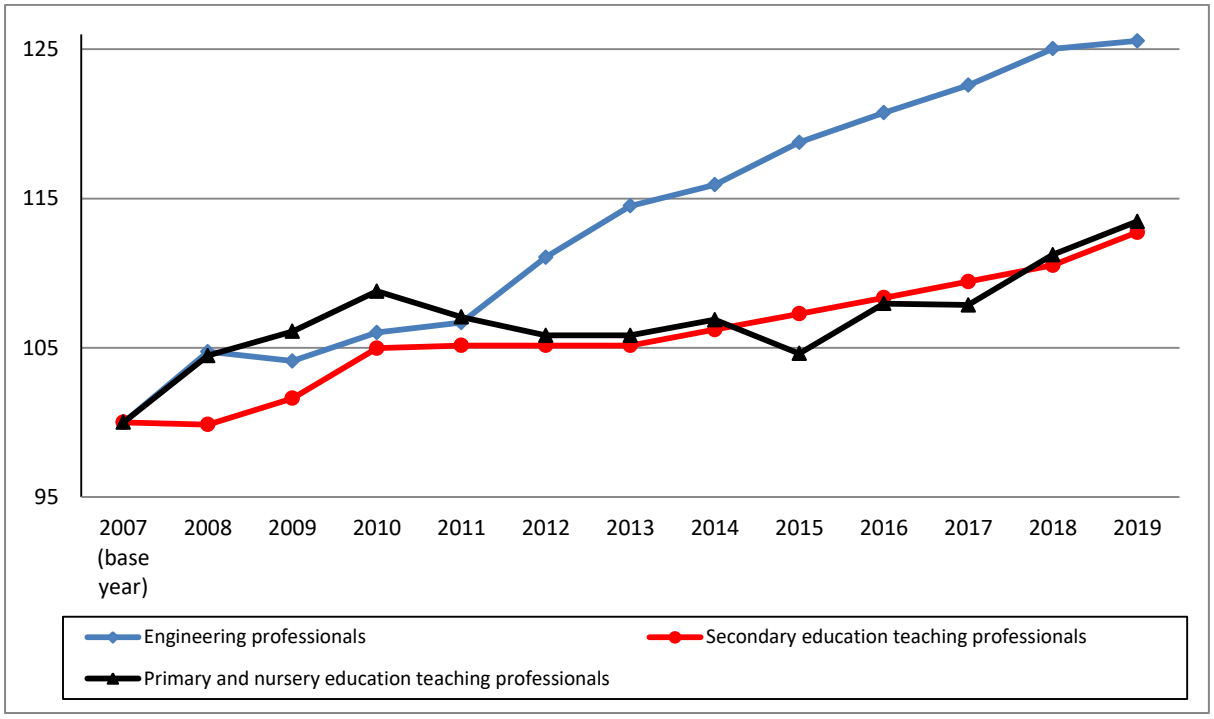
Appendix 1: Indexed median basic weekly earnings 2007 to 2019

A Science, Research, Engineering and Technology professionals



	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	106.8	110.5	111.2
2019	99.0	121.5	123.4	112.7	113.5

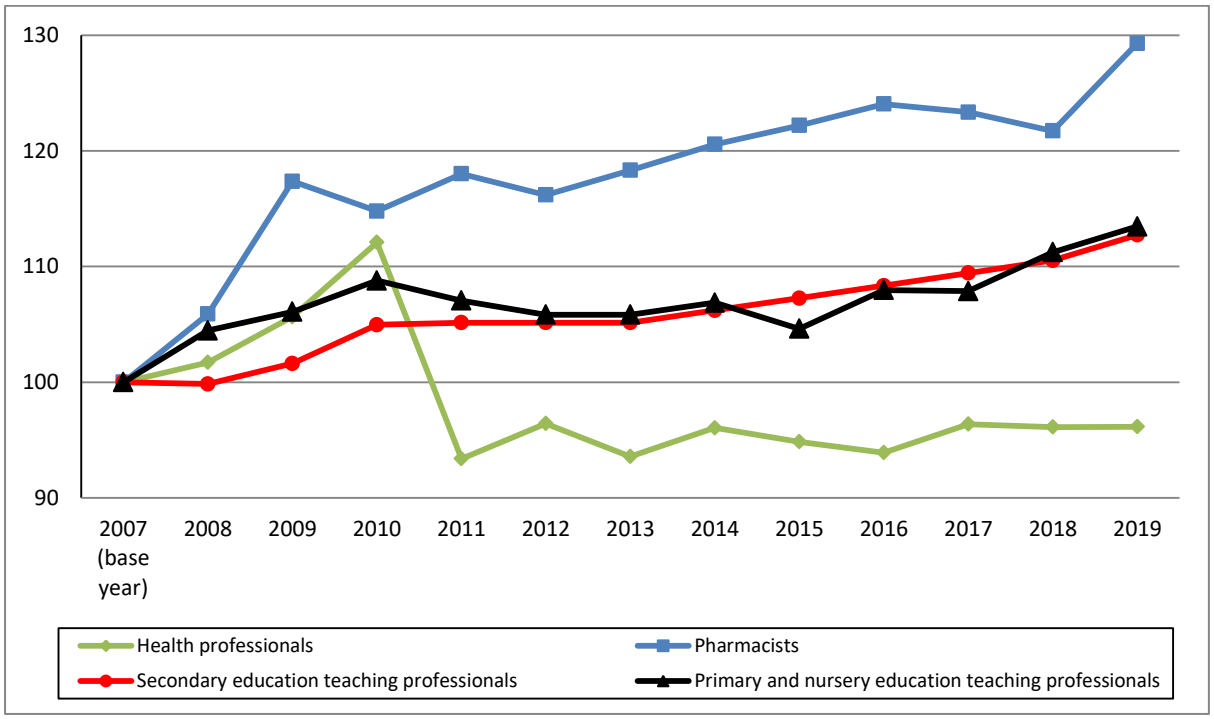
B Engineering professionals



	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

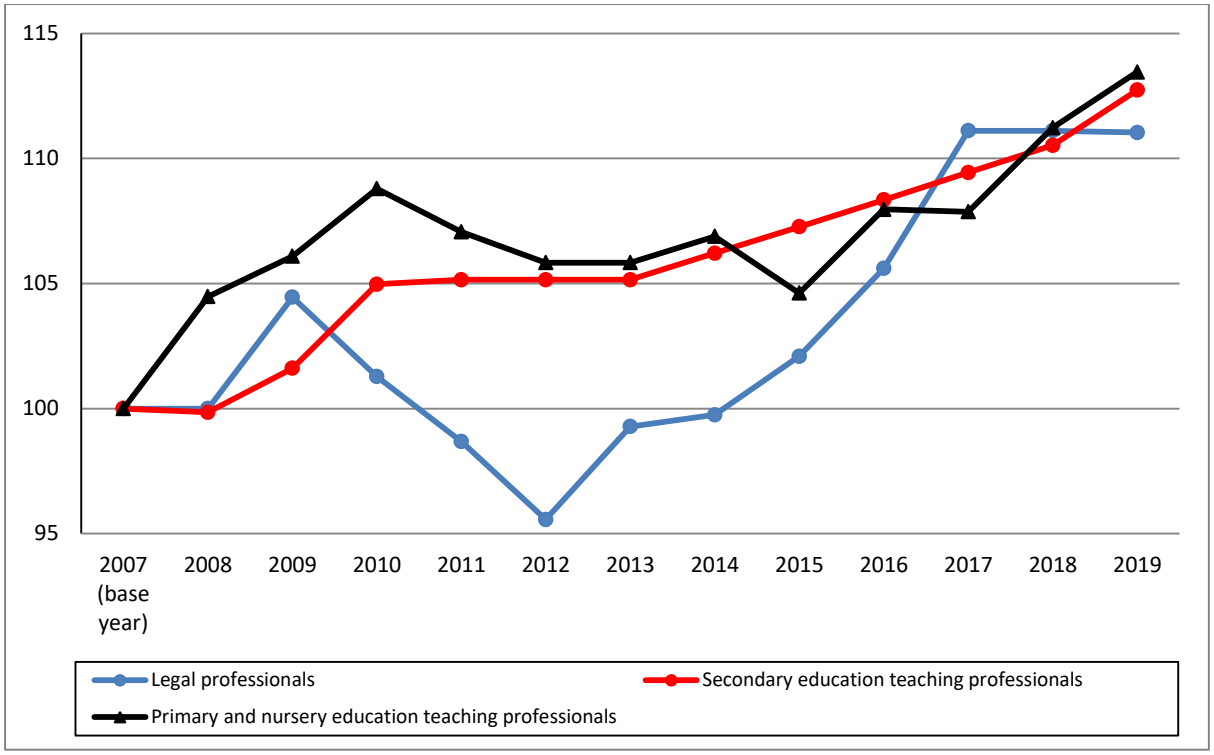
2009	104.1	101.6	106.1
2010	106.0	105.0	108.8
2011	106.7	105.2	107.1
2012	111.1	105.2	105.8
2013	114.5	105.2	105.8
2014	115.9	106.2	106.9
2015	118.8	107.3	104.6
2016	120.7	108.3	108.0
2017	122.6	109.4	107.9
2018	125.0	110.5	111.2
2019	125.6	112.7	113.5

C Health professionals



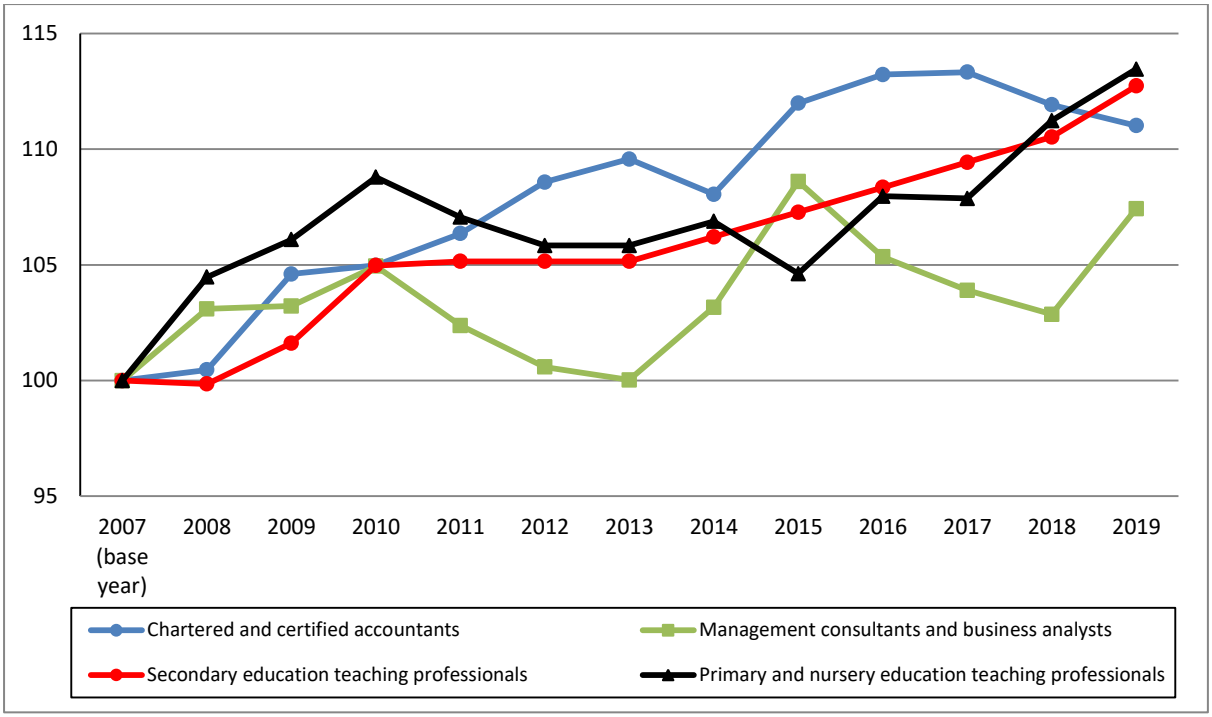
	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0
2008	101.7	105.9	99.9	104.5
2009	105.7	117.4	101.6	106.1
2010	112.1	114.8	105.0	108.8
2011	93.4	118.0	105.2	107.1
2012	96.4	116.2	105.2	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	121.7	110.5	111.2
2019	96.2	129.3	112.7	113.5

D Legal professionals



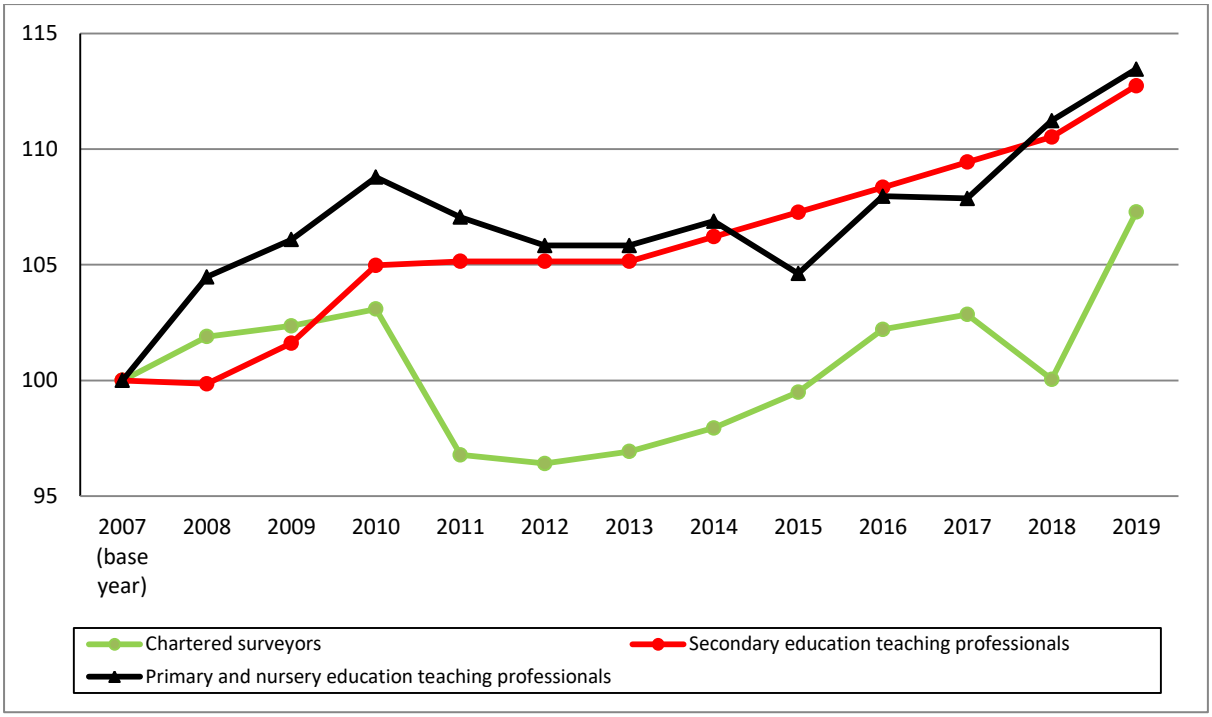
	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	100.0	99.9	104.5
2009	104.5	101.6	106.1
2010	101.3	105.0	108.8
2011	98.7	105.2	107.1
2012	95.6	105.2	105.8
2013	99.3	105.2	105.8
2014	99.7	106.2	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
2019	111.0	112.7	113.5

E Business, Research and Administrative Professionals



	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	111.9	102.9	110.5	111.2
2019	111.0	107.4	112.7	113.5

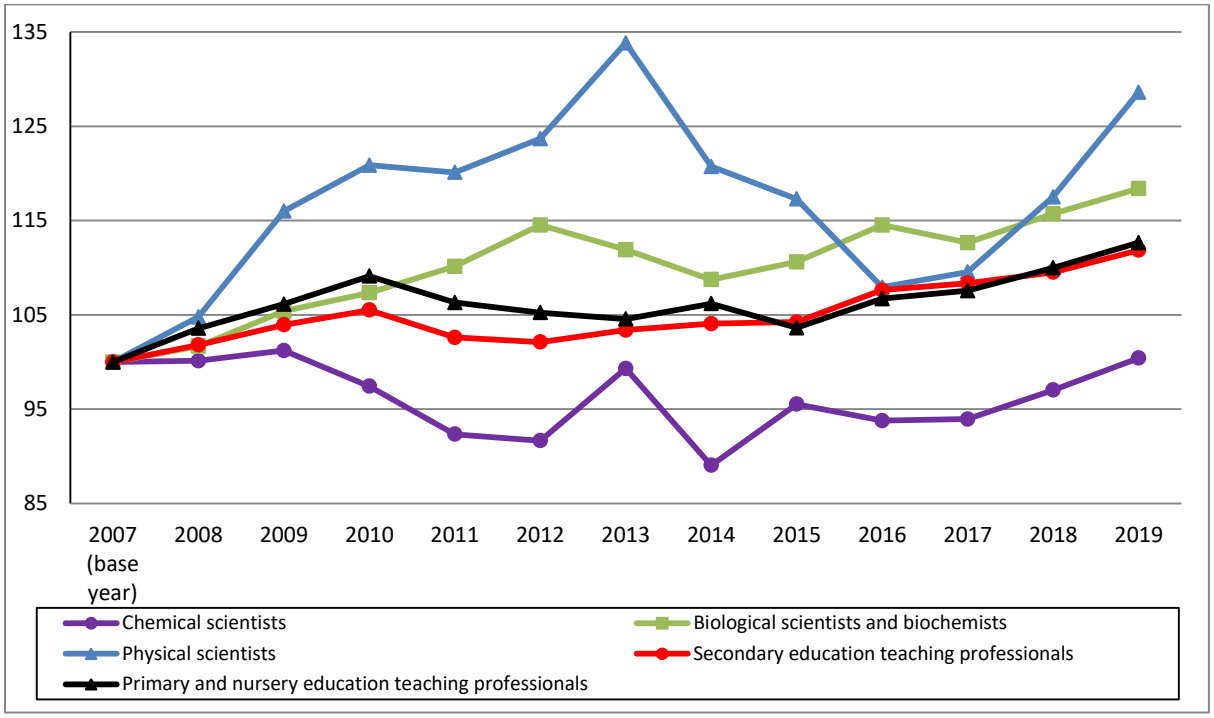
F Chartered surveyors



	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
2019	107.3	112.7	113.5

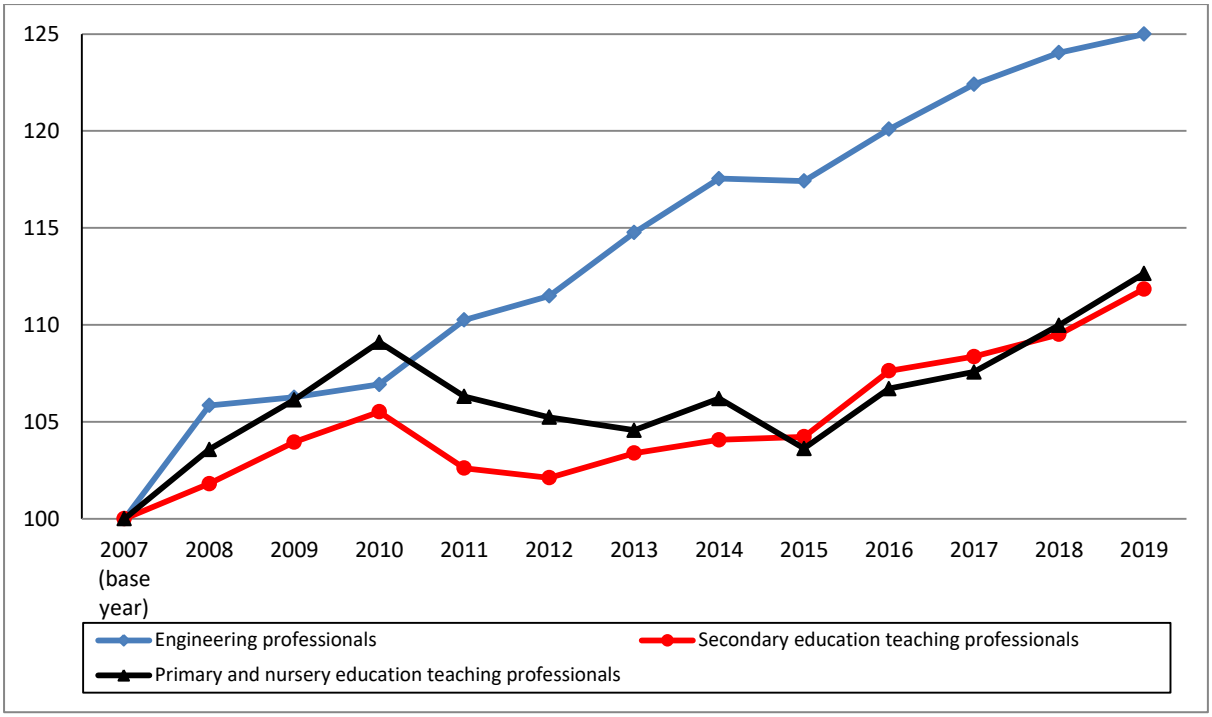
Appendix 2: Indexed average basic weekly earnings 2007 to 2019

A Science, Research, Engineering and Technology professionals



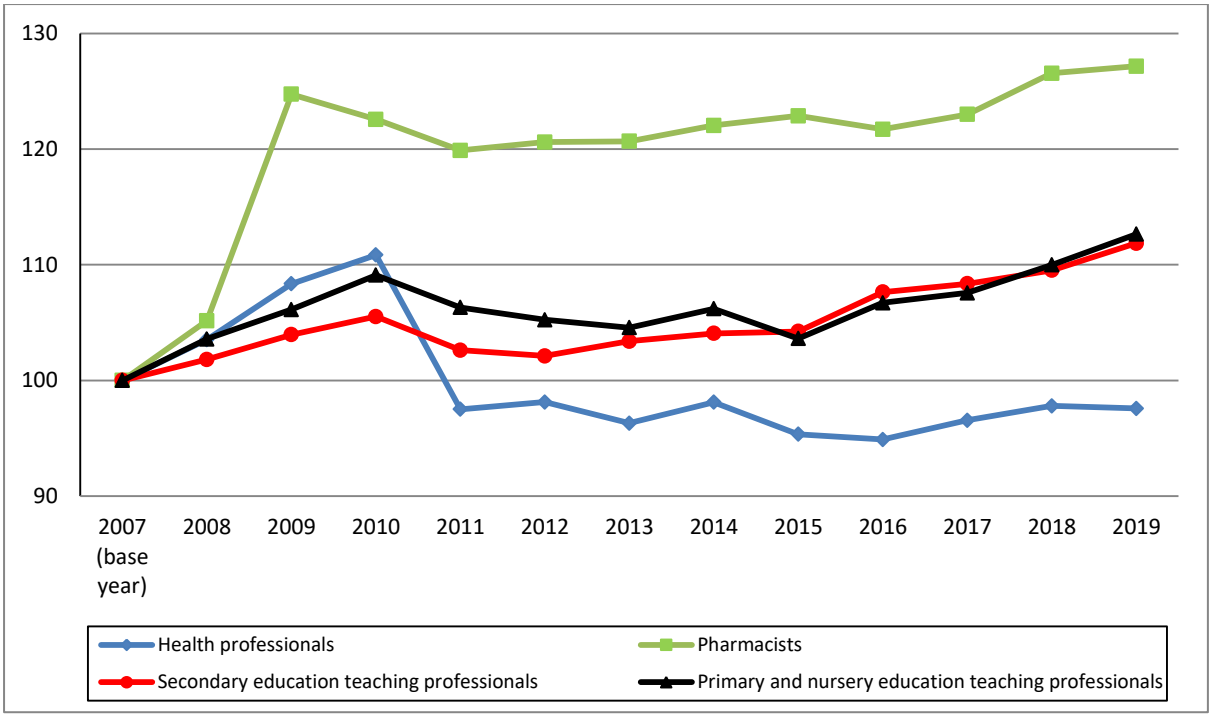
	Chemical scientists	Biological scientists and biochemists	Physical scientists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0	100.0
2008	100.1	101.7	104.8	101.8	103.6
2009	101.2	105.4	116.0	104.0	106.1
2010	97.4	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	117.5	109.5	110.0
2019	100.4	118.4	128.6	111.9	112.7

B Engineering professionals



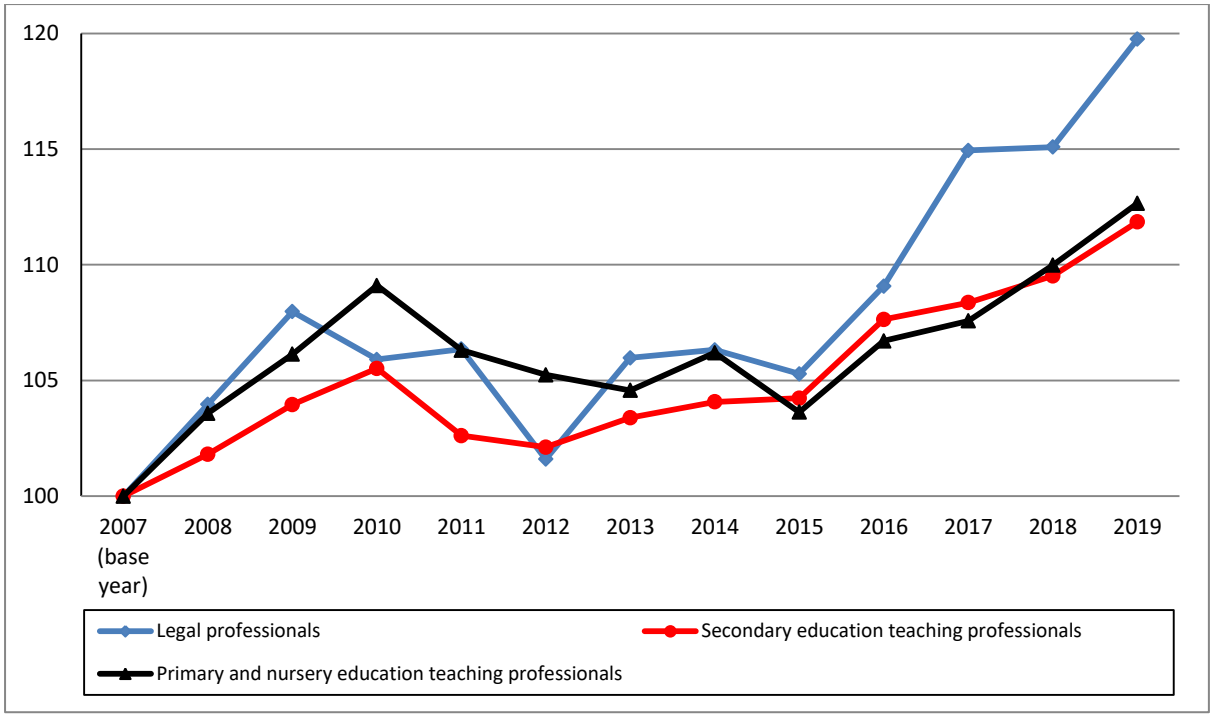
	Engineering professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	105.8	101.8	103.6
2009	106.3	104.0	106.1
2010	106.9	105.5	109.1
2011	110.3	102.6	106.3
2012	111.5	102.1	105.2
2013	114.8	103.4	104.6
2014	117.5	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	109.5	110.0
2019	125.0	111.9	112.7

C Health professionals



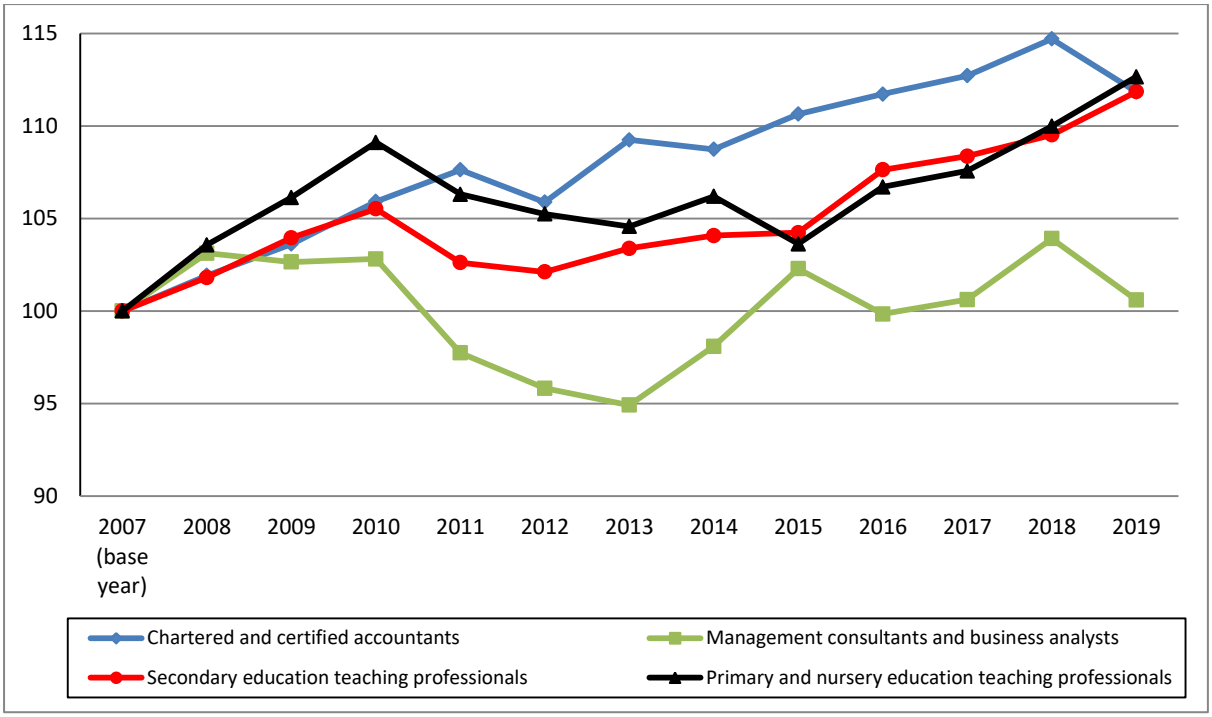
	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0
2008	103.5	105.2	101.8	103.6
2009	108.4	124.7	104.0	106.1
2010	110.8	122.6	105.5	109.1
2011	97.5	119.9	102.6	106.3
2012	98.1	120.6	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	97.8	126.6	109.5	110.0
2019	97.6	127.2	111.9	112.7

D Legal professionals

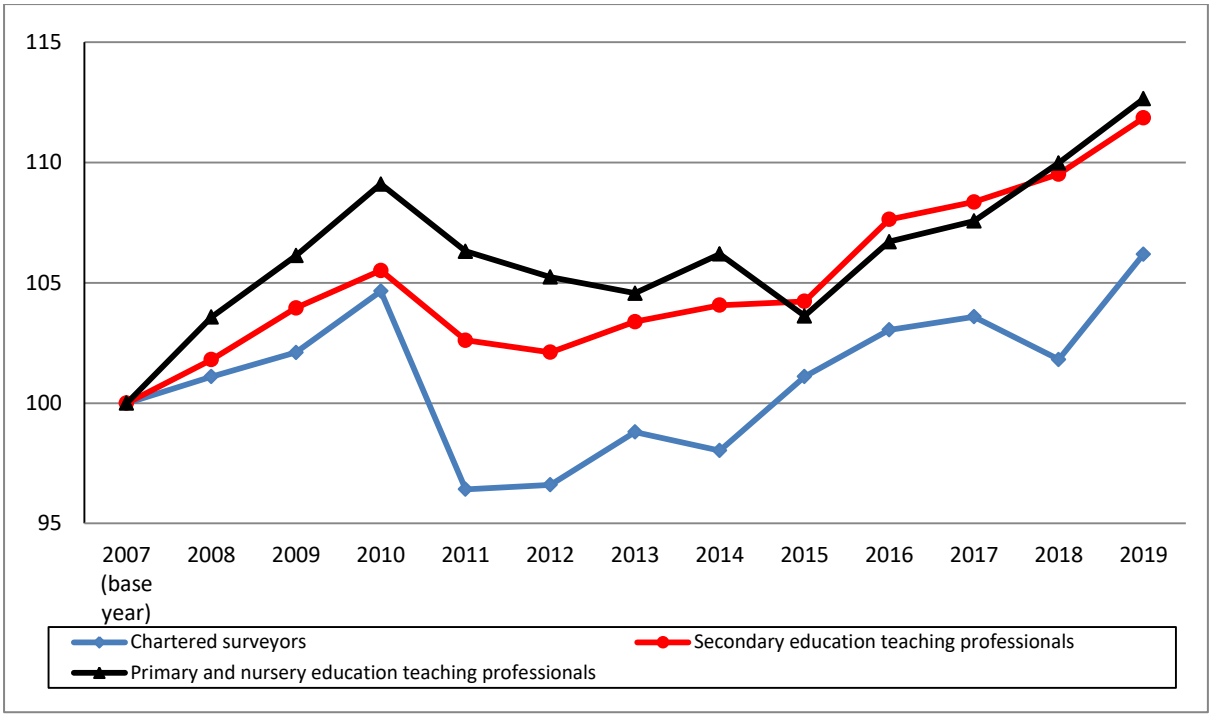


	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	104.0	101.8	103.6
2009	108.0	104.0	106.1
2010	105.9	105.5	109.1
2011	106.4	102.6	106.3
2012	101.6	102.1	105.2
2013	106.0	103.4	104.6
2014	106.3	104.1	106.2
2015	105.3	104.2	103.6
2016	109.1	107.6	106.7
2017	114.9	108.4	107.6
2018	115.1	109.5	110.0
2019	119.8	111.9	112.7

E Business, Research and Administrative professionals



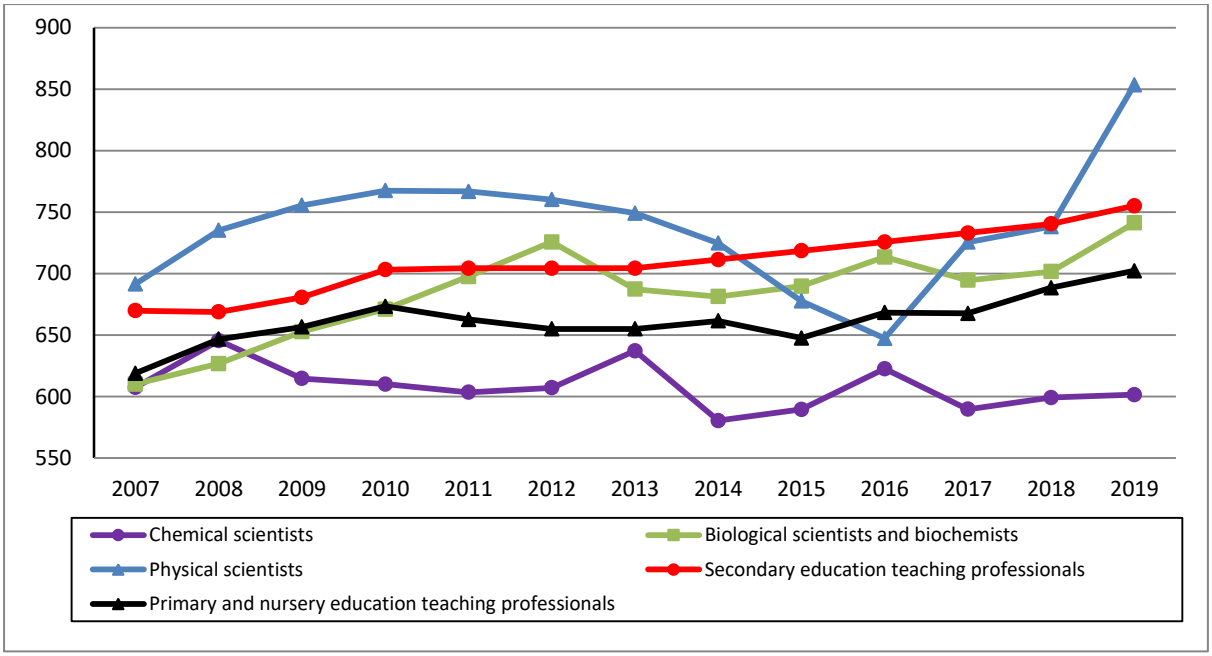
	Chartered and certified accountants	Management consultants and business analysts	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0
2008	101.9	103.1	101.8	103.6
2009	103.6	102.7	104.0	106.1
2010	105.9	102.8	105.5	109.1
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	114.7	103.9	109.5	110.0
2019	111.8	100.6	111.9	112.7



	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	101.8	109.5	110.0
2019	106.2	111.9	112.7

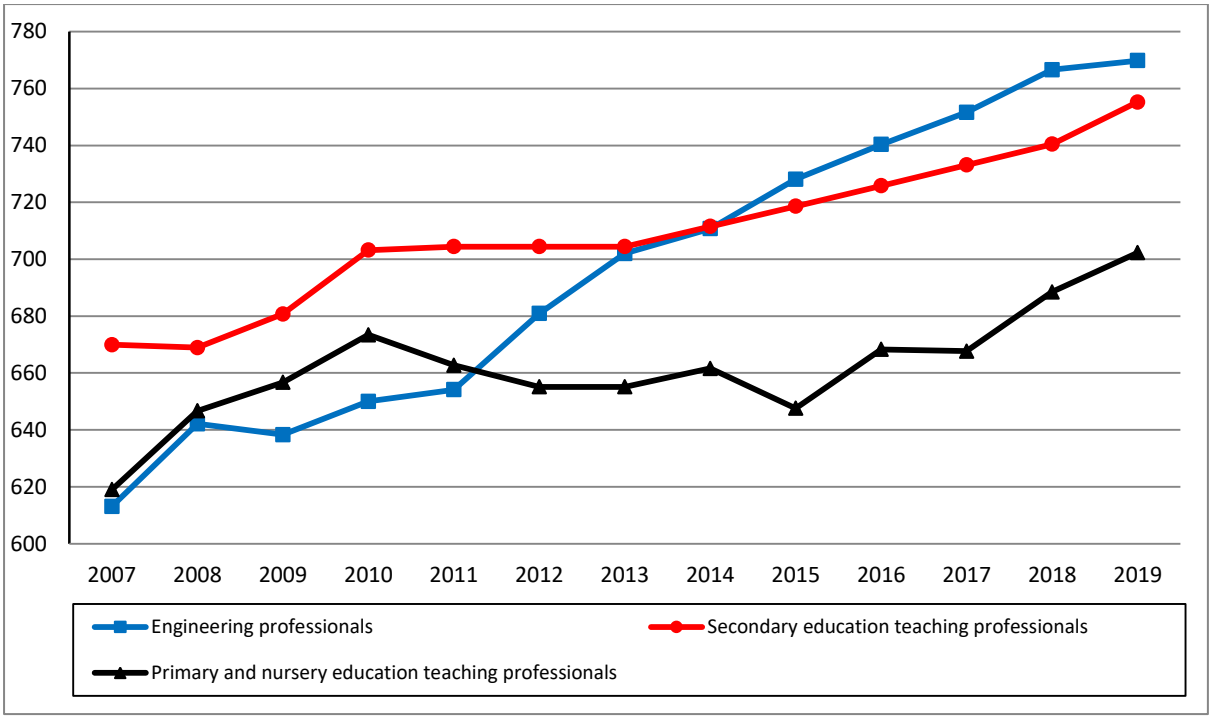
Appendix 3: Median basic weekly earnings (ASHE)

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



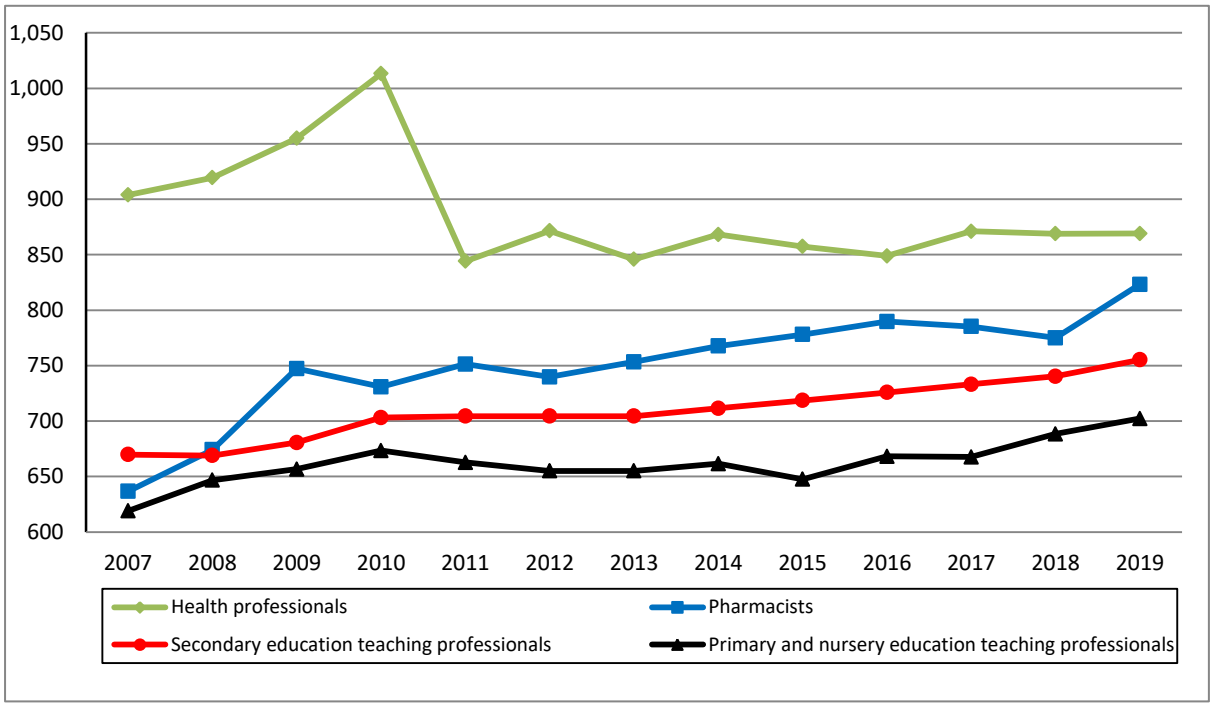
	Chemical scientists	Biological scientists and biochemists	Physical scientists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	607.6	610.2	691.6	669.9	619.0
2008	645.6	626.8	735.3	668.9	646.7
2009	614.8	652.9	755.5	680.7	656.7
2010	610.2	671.1	767.5	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	738.3	740.4	688.5
2019	601.6	741.2	853.5	755.2	702.3

B Engineering professionals (median basic pay £pw)



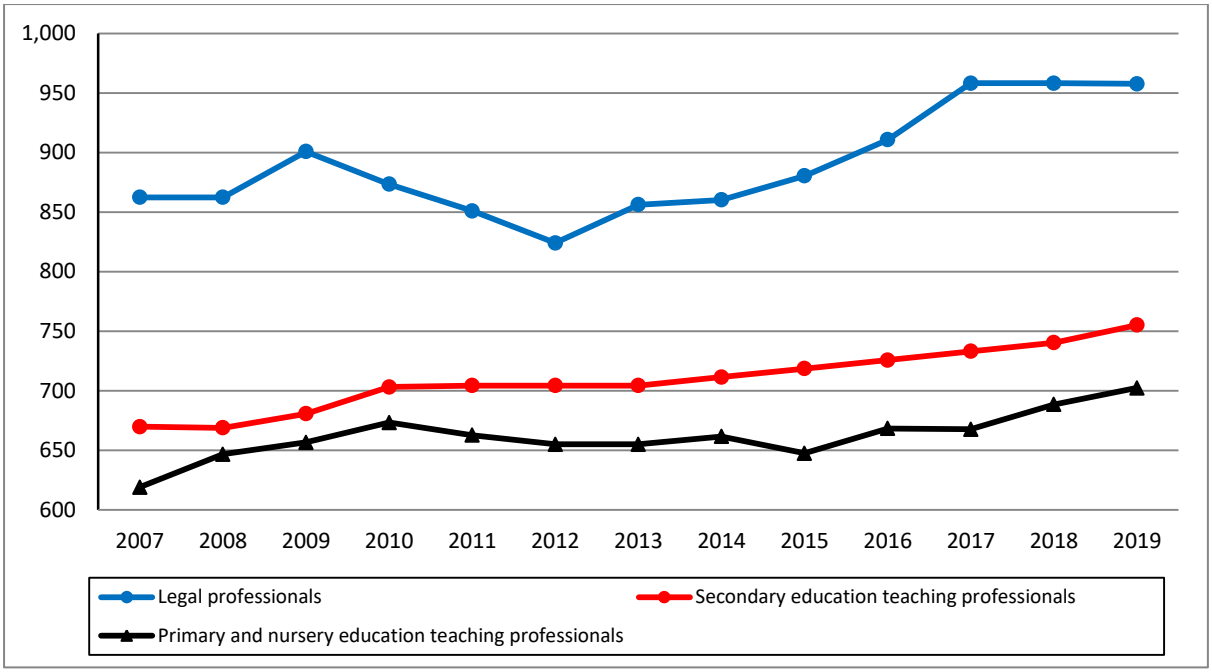
	Engineering professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	613.1	669.9	619.0
2008	642.1	668.9	646.7
2009	638.3	680.7	656.7
2010	650.0	703.2	673.4
2011	654.1	704.4	662.7
2012	680.9	704.4	655.1
2013	702.0	704.4	655.1
2014	710.7	711.5	661.6
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
2019	769.8	755.2	702.3

C Health professionals (median basic pay £pw)



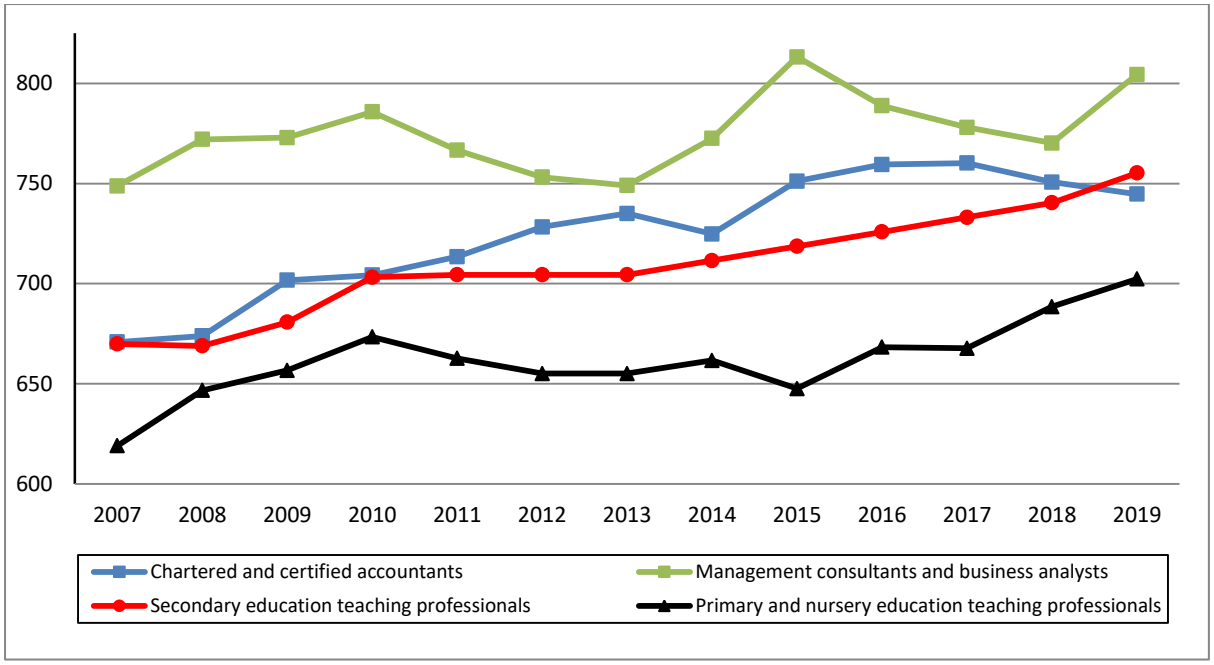
	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	903.9	636.7	669.9	619.0
2008	919.4	674.2	668.9	646.7
2009	955.0	747.3	680.7	656.7
2010	1,013.2	730.9	703.2	673.4
2011	844.1	751.4	704.4	662.7
2012	871.6	739.8	704.4	655.1
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	775.0	740.4	688.5
2019	869.1	823.2	755.2	702.3

D Legal professionals (median basic pay £pw)



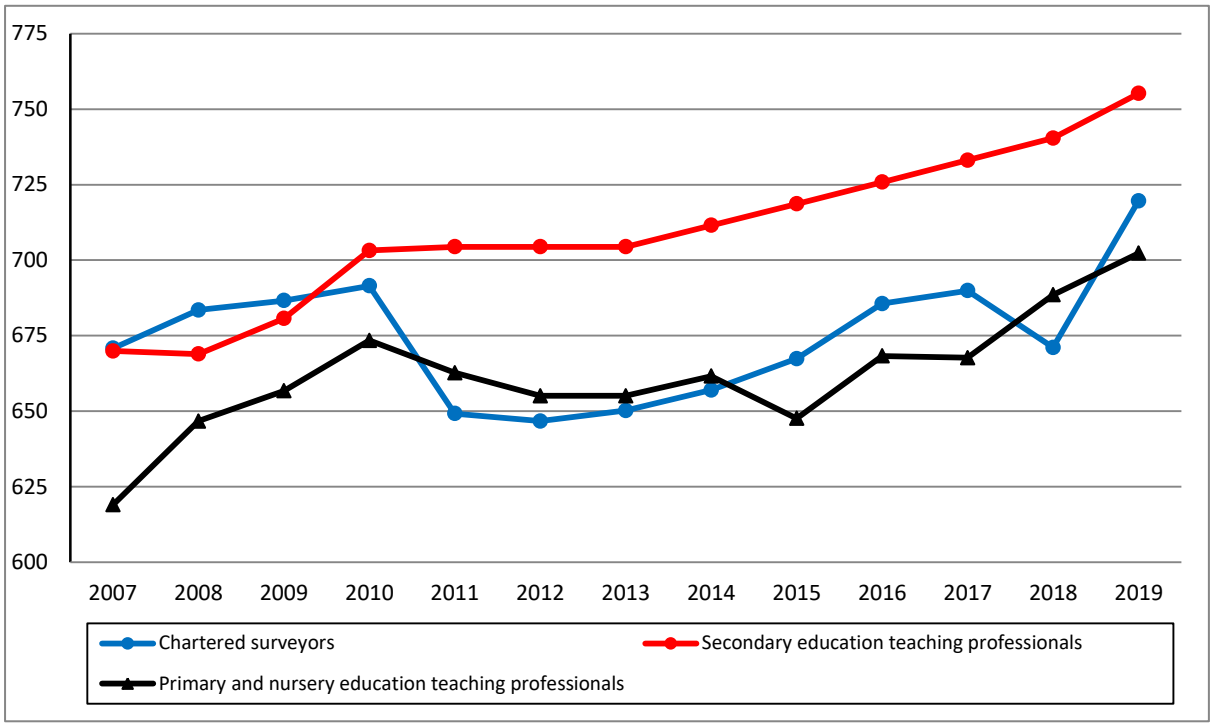
	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	862.4	669.9	619.0
2008	862.4	668.9	646.7
2009	900.8	680.7	656.7
2010	873.4	703.2	673.4
2011	851.0	704.4	662.7
2012	824.1	704.4	655.1
2013	856.2	704.4	655.1
2014	860.2	711.5	661.6
2015	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
2019	957.6	755.2	702.3

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



	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	750.7	770.2	740.4	688.5
2019	744.7	804.4	755.2	702.3

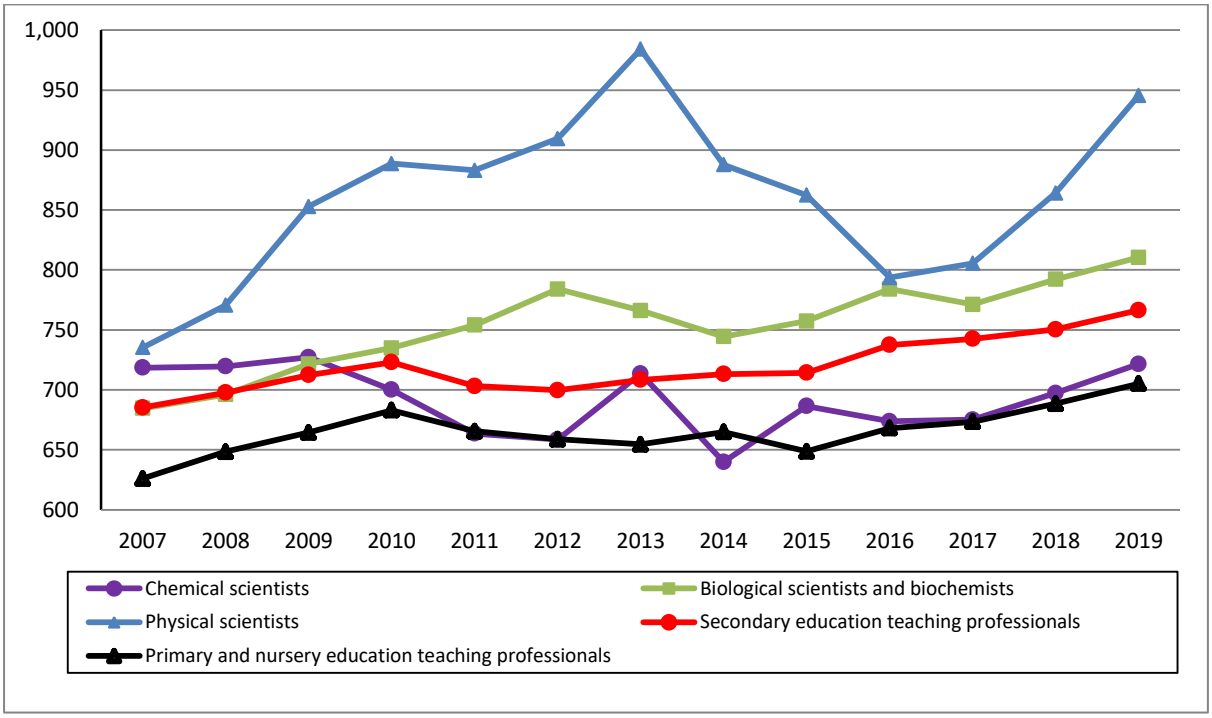
F Chartered surveyors (median basic pay £pw)



	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	671.1	740.4	688.5
2019	719.6	755.2	702.3

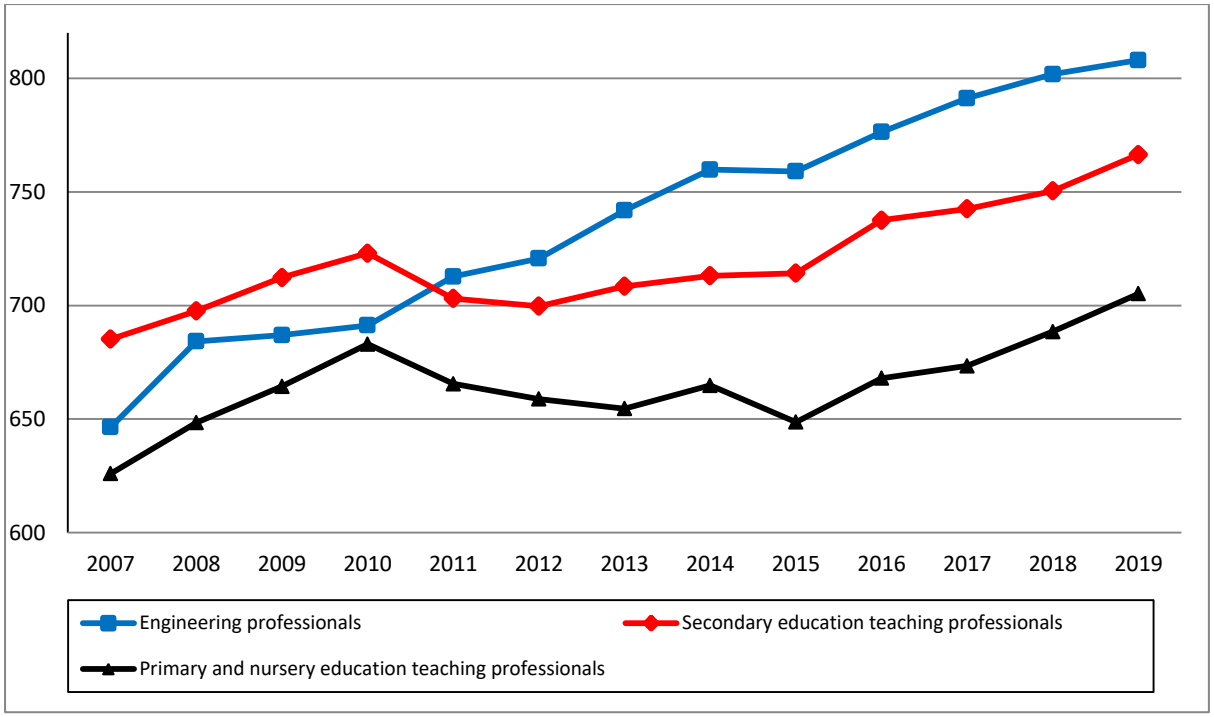
Appendix 4: Average basic weekly earnings (ASHE)

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



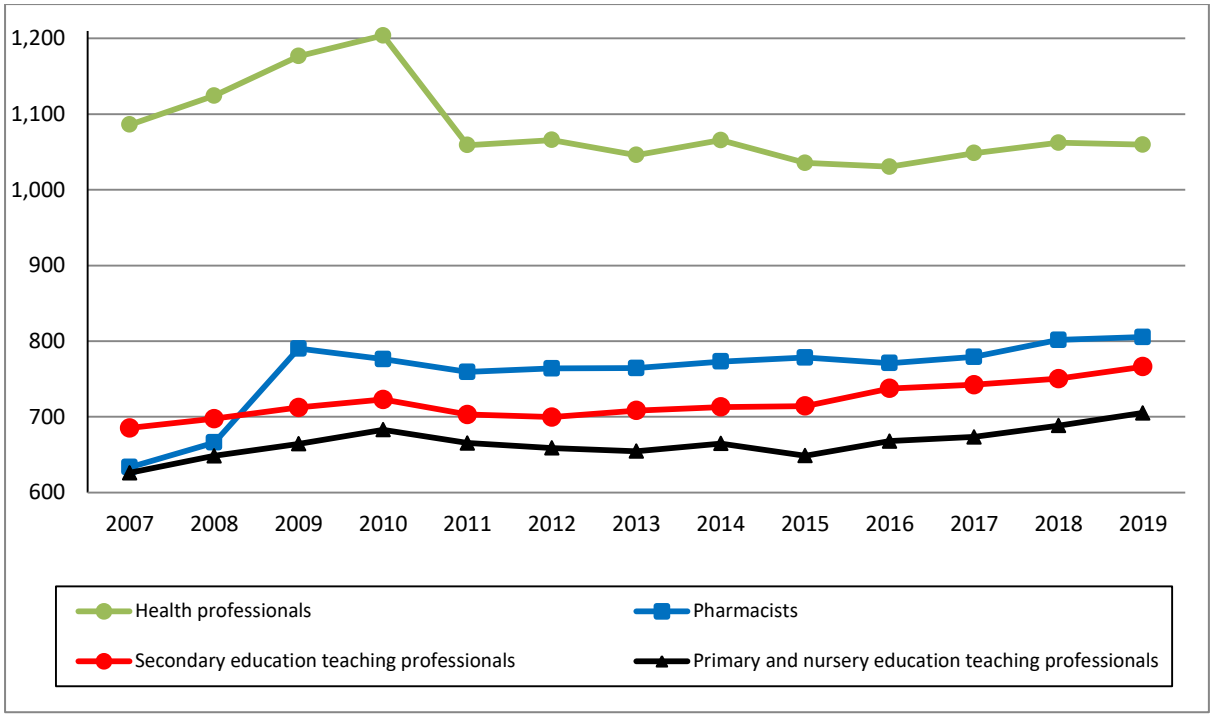
	Chemical scientists	Biological scientists and biochemists	Physical scientists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	718.5	684.6	735.3	685.2	626.0
2008	719.5	696.1	770.5	697.6	648.4
2009	727.2	721.5	852.9	712.3	664.4
2010	700.1	734.9	888.7	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	697.2	792.2	864.1	750.4	688.5
2019	721.5	810.5	945.5	766.4	705.2

B Engineering professionals (average basic pay £pw)



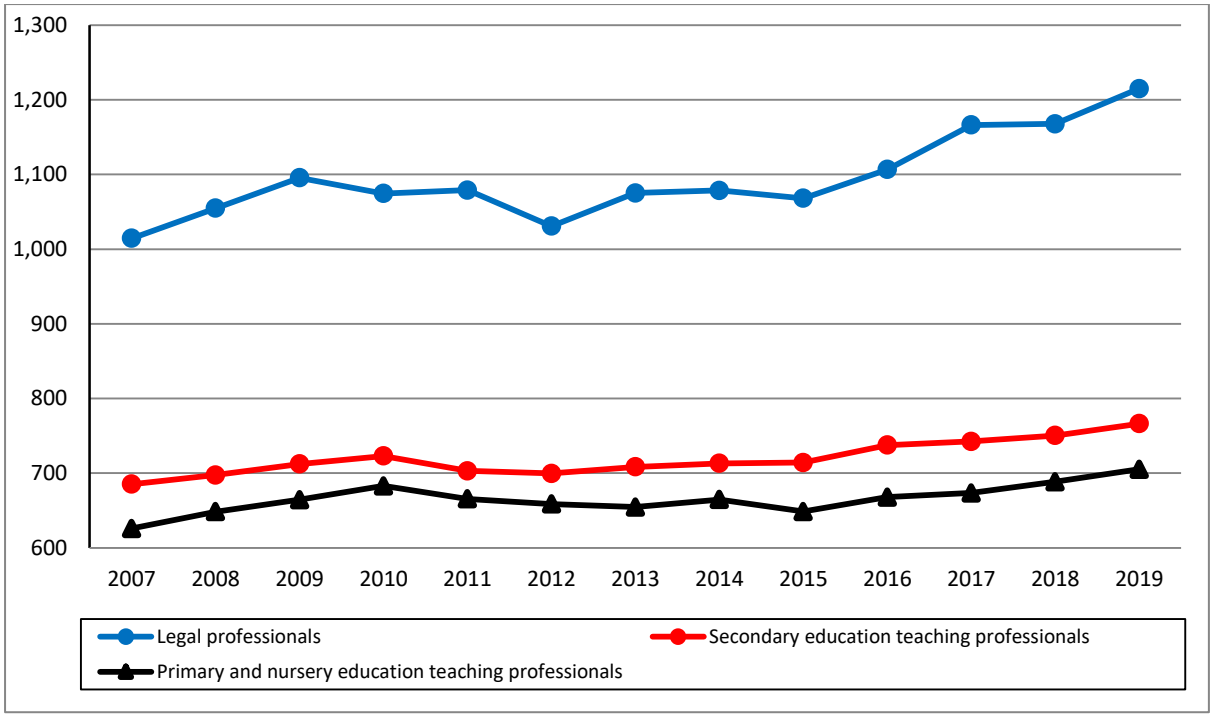
	Engineering professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	646.4	685.2	626.0
2008	684.2	697.6	648.4
2009	686.9	712.3	664.4
2010	691.2	723.0	683.0
2011	712.7	703.1	665.5
2012	720.7	699.7	658.8
2013	741.8	708.4	654.6
2014	759.8	713.1	664.8
2015	759.0	714.2	648.7
2016	776.3	737.5	668.0
2017	791.2	742.5	673.4
2018	801.8	750.4	688.5
2019	808.0	766.4	705.2

C Health professionals (average basic pay £pw)



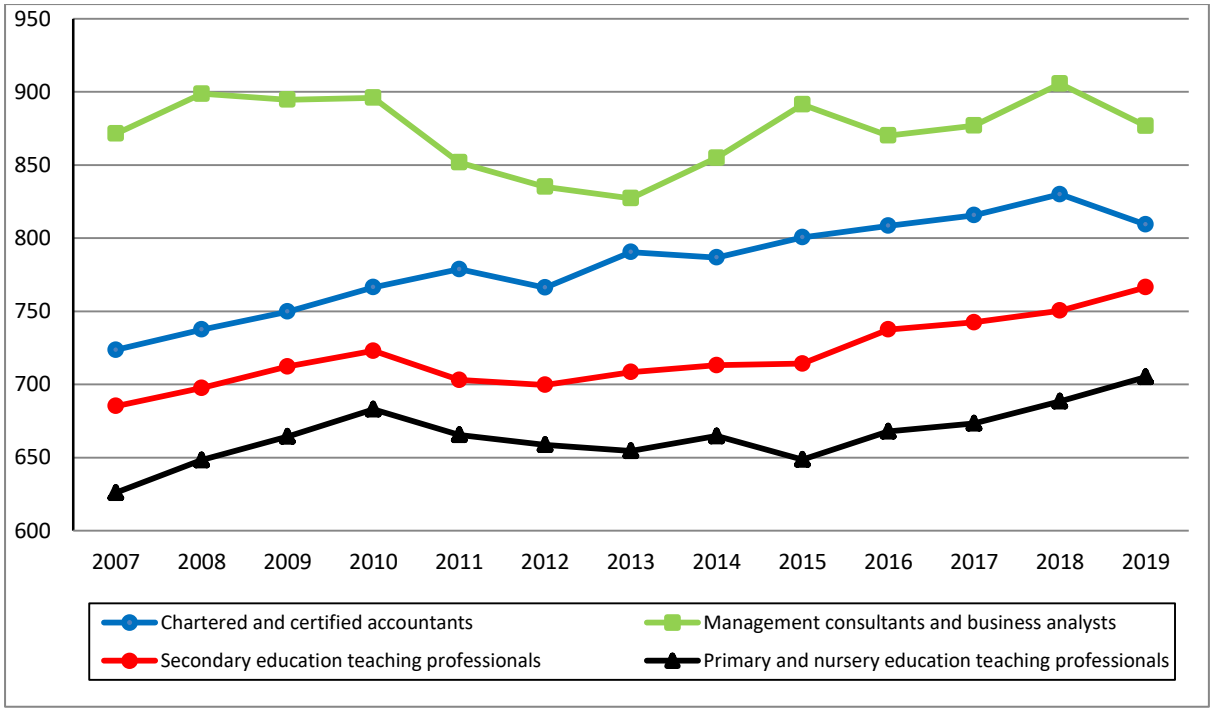
	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	1,086.0	633.4	685.2	626.0
2008	1,124.3	666.1	697.6	648.4
2009	1,176.7	790.1	712.3	664.4
2010	1,203.8	776.3	723.0	683.0
2011	1,059.0	759.3	703.1	665.5
2012	1,065.7	763.9	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	1,062.1	801.6	750.4	688.5
2019	1,059.7	805.4	766.4	705.2

D Legal professionals (average basic pay £pw)



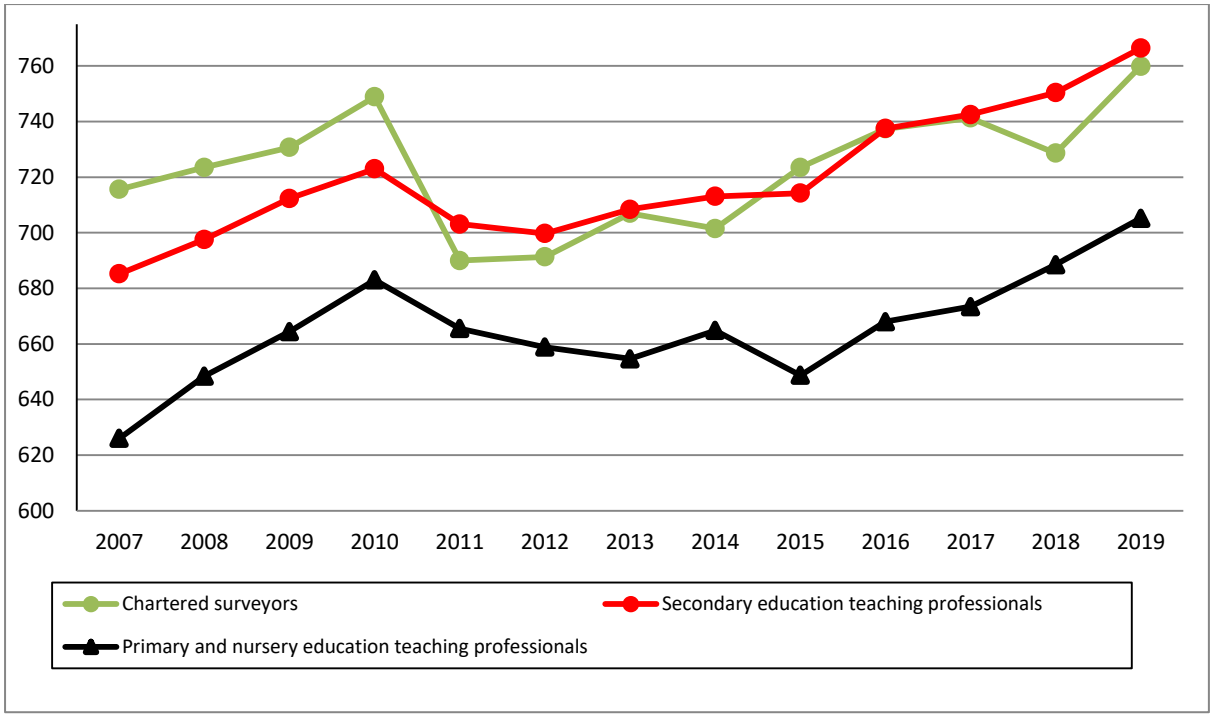
	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	1,014.6	685.2	626.0
2008	1,054.9	697.6	648.4
2009	1,095.5	712.3	664.4
2010	1,074.5	723.0	683.0
2011	1,079.1	703.1	665.5
2012	1,030.8	699.7	658.8
2013	1,075.2	708.4	654.6
2014	1,078.7	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	1,167.7	750.4	688.5
2019	1,215.0	766.4	705.2

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



	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	830.0	905.6	750.4	688.5
2019	809.3	876.7	766.4	705.2

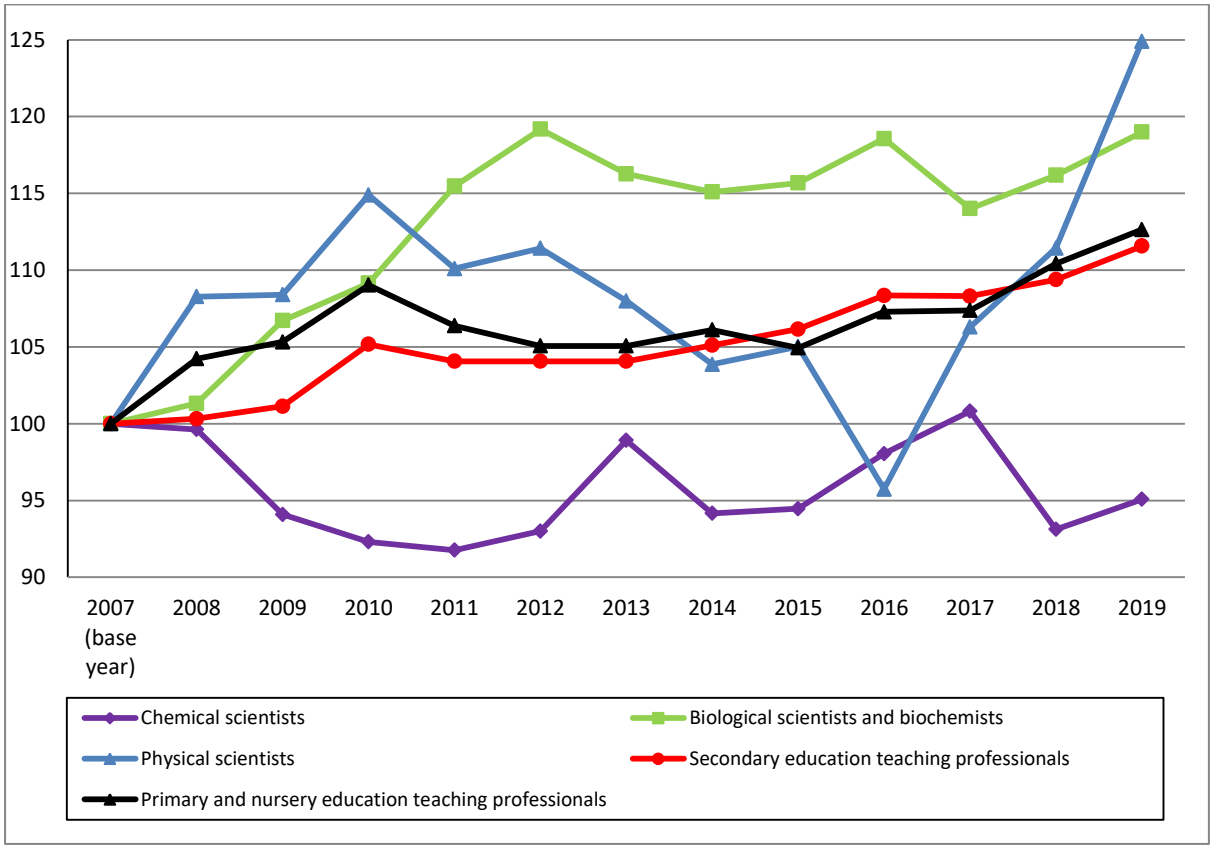
F Chartered Surveyors (average basic pay £pw)



	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	728.6	750.4	688.5
2019	759.9	766.4	705.2

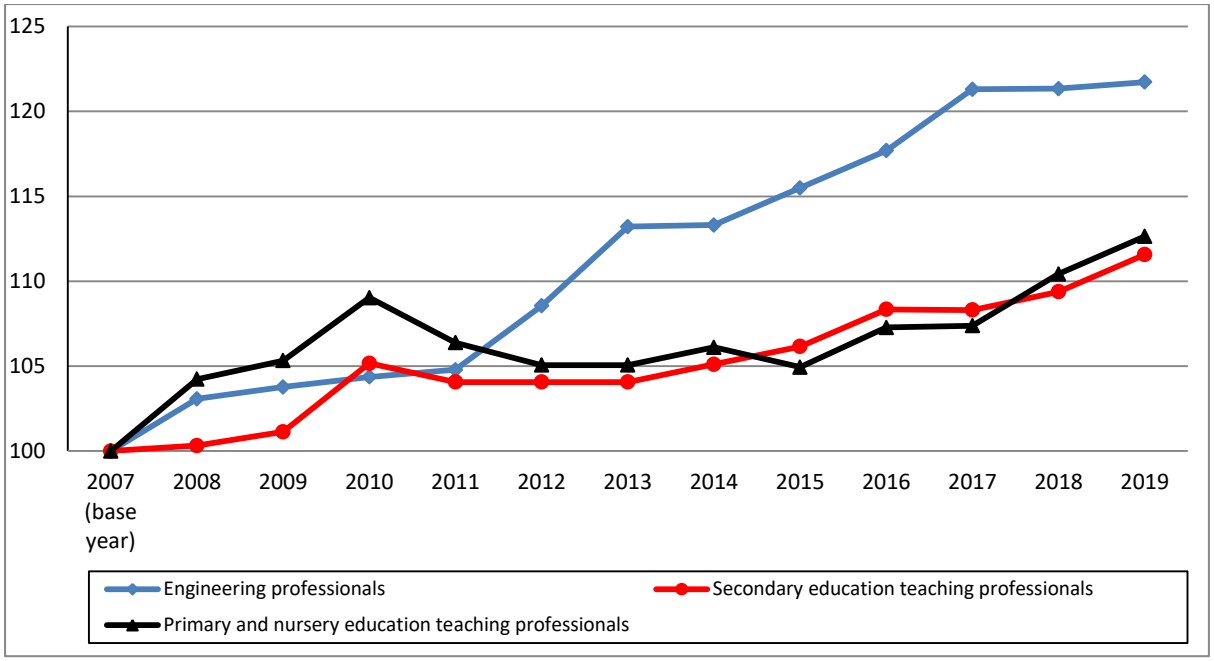
Appendix 5: Indexed median gross weekly earnings 2007 to 2019

A Science, Research, Engineering and Technology professionals



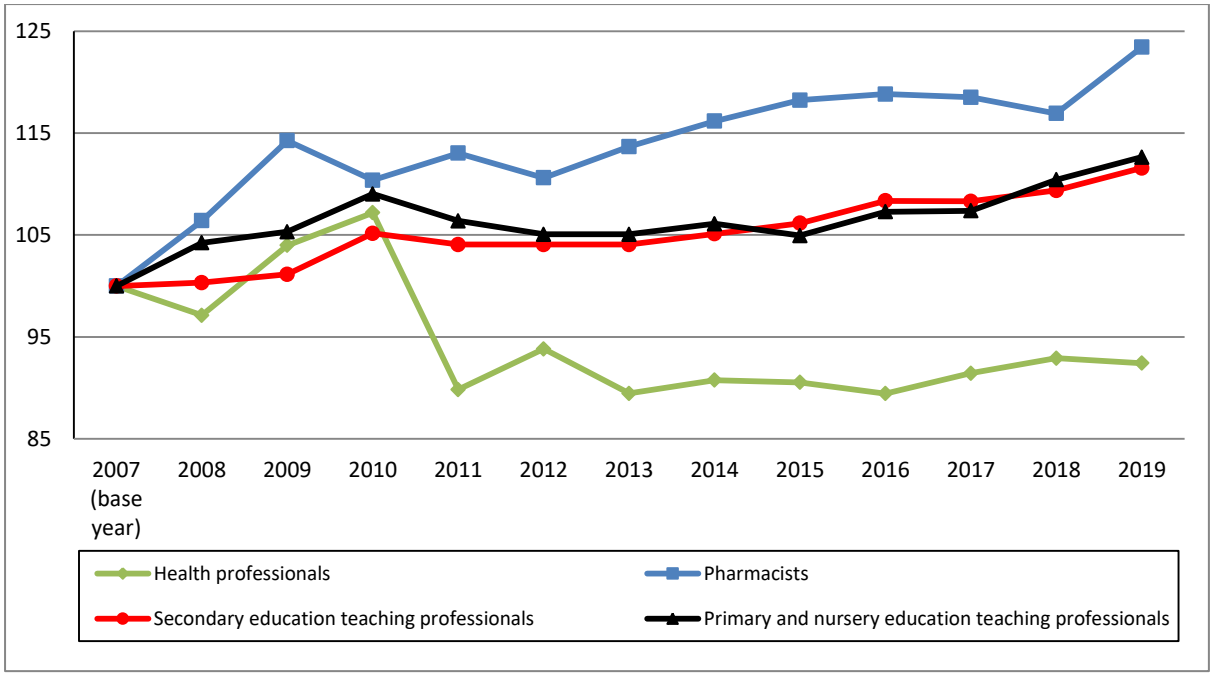
	Chemical scientists	Biological scientists and biochemists	Physical scientists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0	100.0
2008	99.6	101.3	108.3	100.3	104.2
2009	94.1	106.7	108.4	101.1	105.3
2010	92.3	109.1	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	111.4	109.4	110.4
2019	95.1	119.0	124.9	111.6	112.6

B Engineering professionals



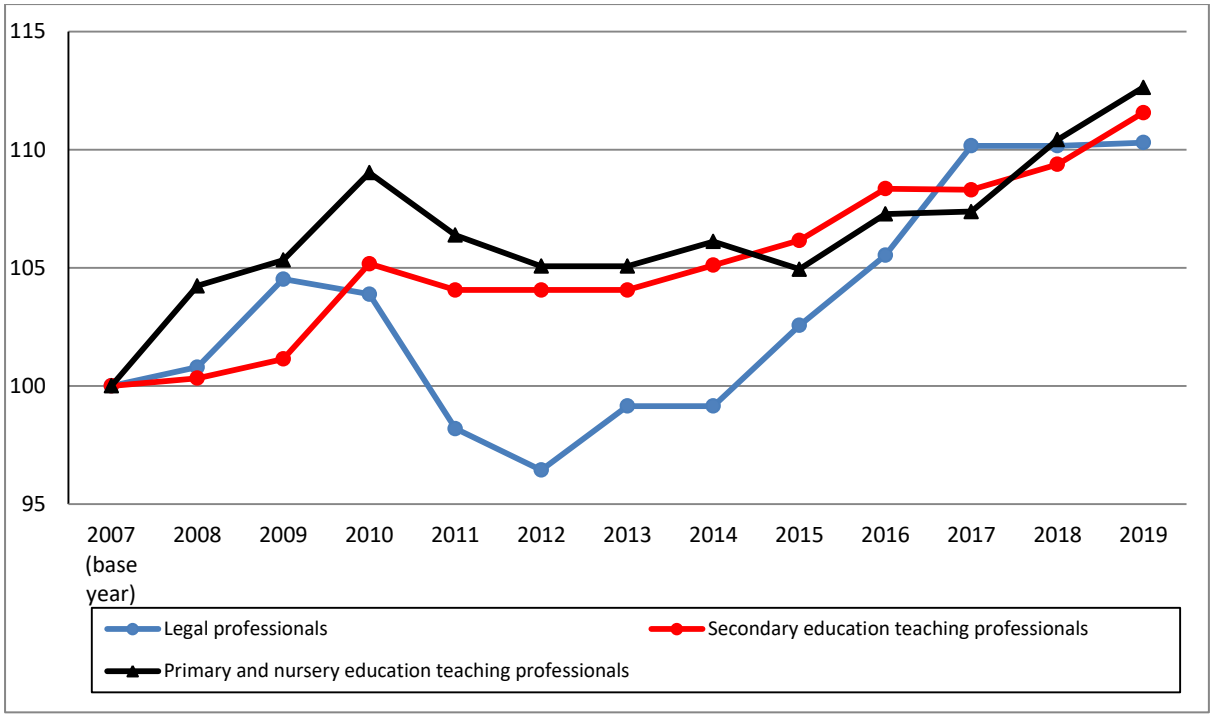
	Engineering professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	103.1	100.3	104.2
2009	103.8	101.1	105.3
2010	104.4	105.2	109.0
2011	104.8	104.1	106.4
2012	108.6	104.1	105.1
2013	113.2	104.1	105.1
2014	113.3	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
2019	121.7	111.6	112.6

C Health professionals



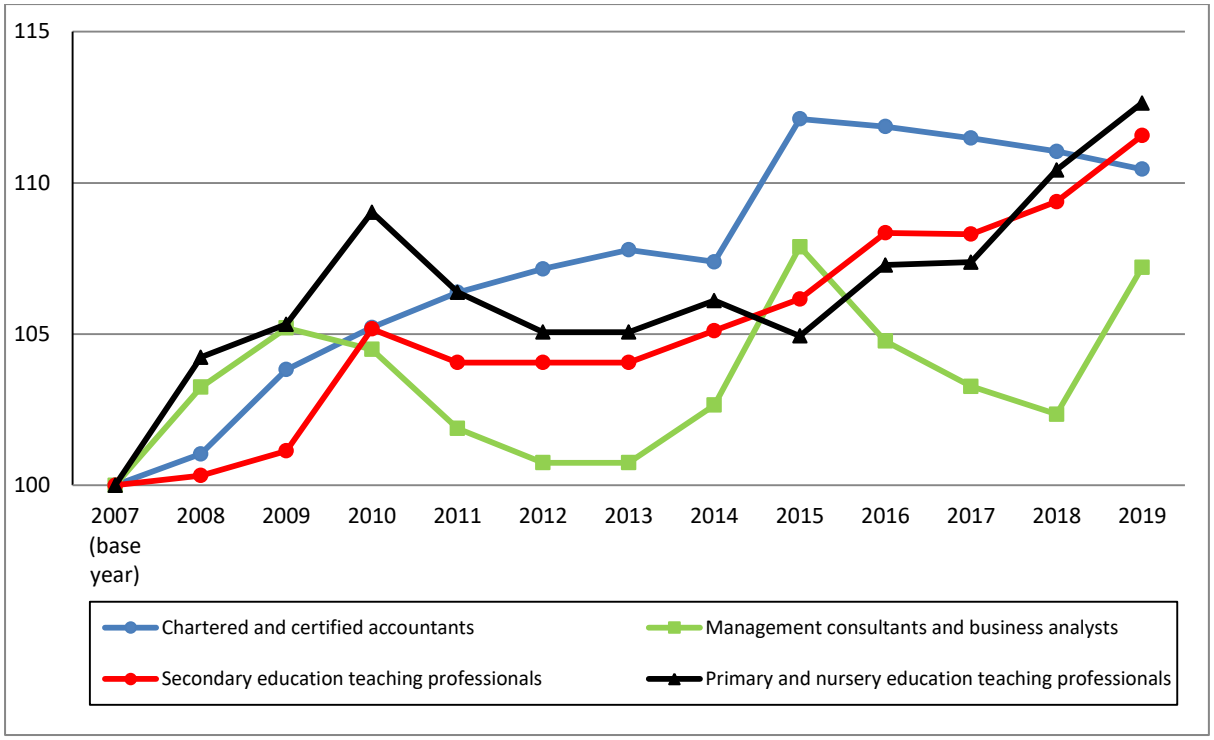
	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0
2008	97.1	106.4	100.3	104.2
2009	104.0	114.3	101.1	105.3
2010	107.2	110.4	105.2	109.0
2011	89.8	113.0	104.1	106.4
2012	93.8	110.6	104.1	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	116.9	109.4	110.4
2019	92.4	123.4	111.6	112.6

D Legal professionals

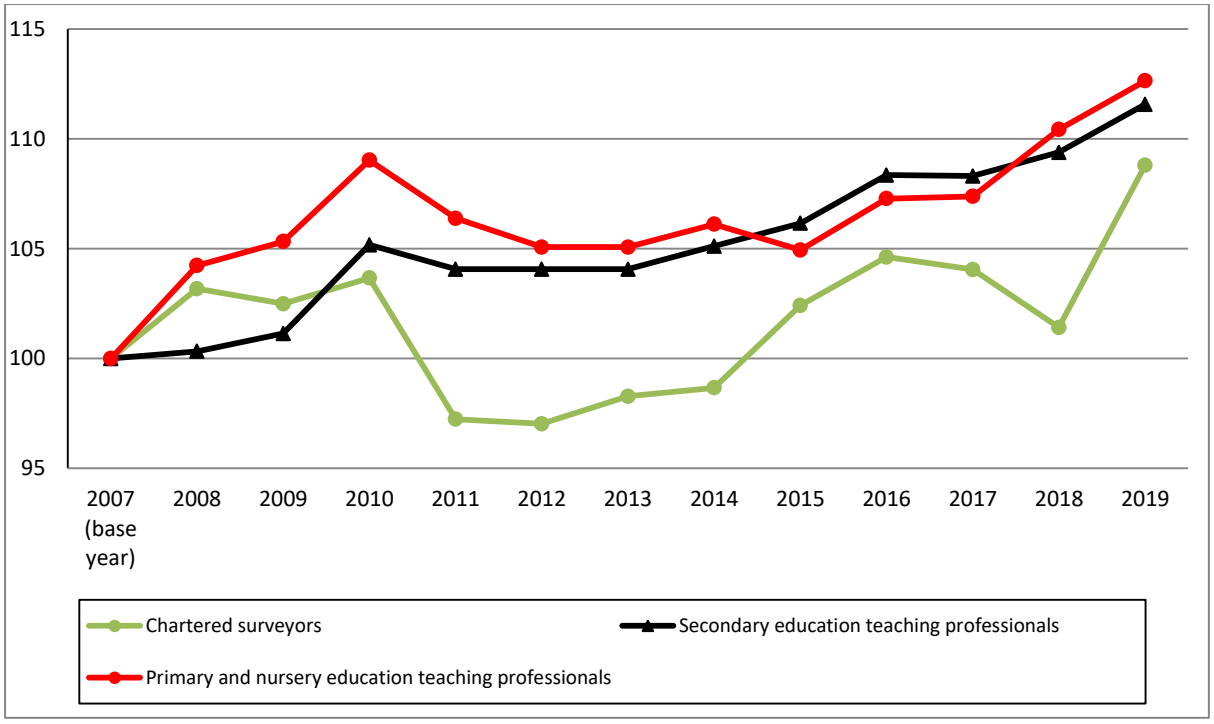


	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	100.8	100.3	104.2
2009	104.5	101.1	105.3
2010	103.9	105.2	109.0
2011	98.2	104.1	106.4
2012	96.4	104.1	105.1
2013	99.1	104.1	105.1
2014	99.1	105.1	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
2019	110.3	111.6	112.6

E Business, Research and Administrative professionals



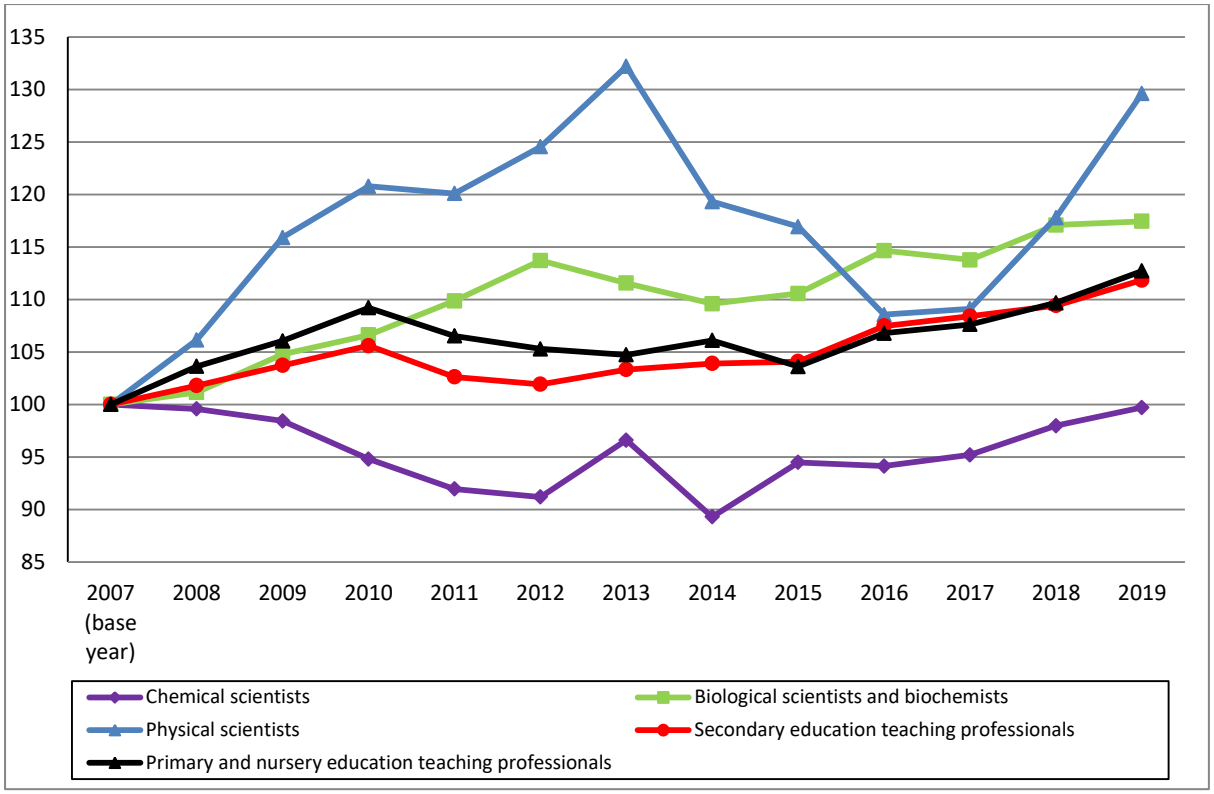
	Chartered and certified accountants	Management consultants and business analysts	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0
2008	101.0	103.2	100.3	104.2
2009	103.8	105.2	101.1	105.3
2010	105.2	104.5	105.2	109.0
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	111.0	102.4	109.4	110.4
2019	110.5	107.2	111.6	112.6



	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	101.4	109.4	110.4
2019	108.8	111.6	112.6

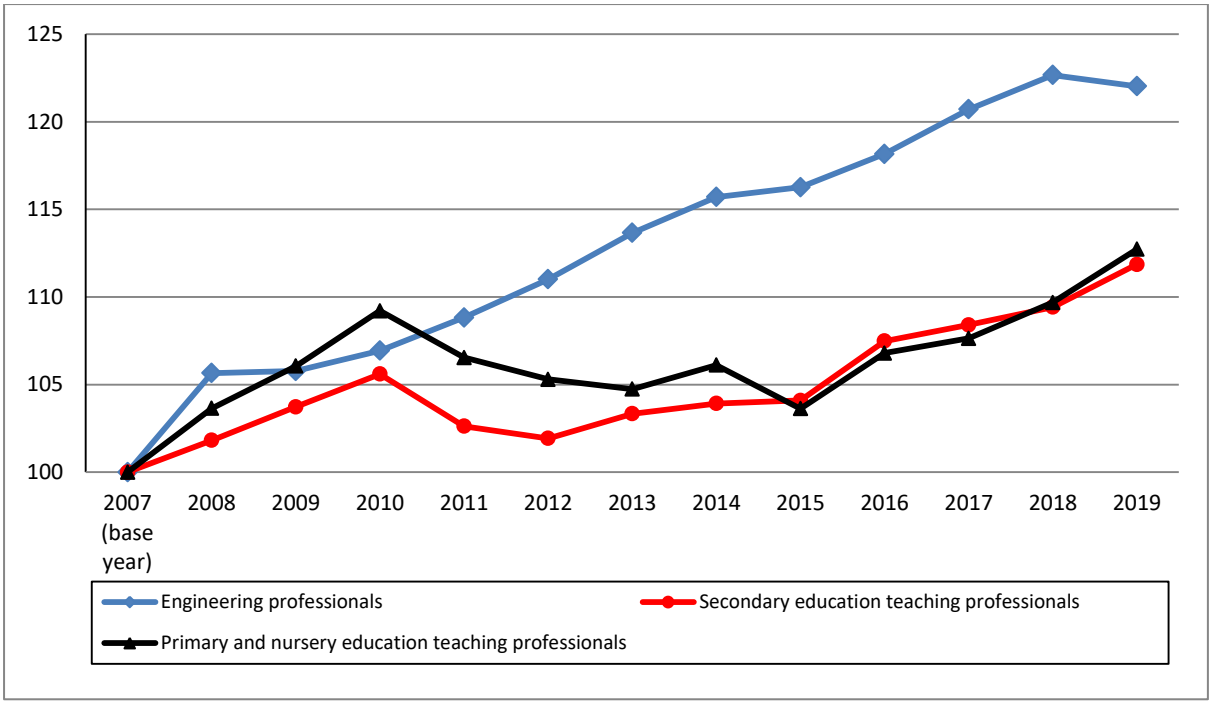
Appendix 6: Indexed average gross weekly earnings 1998 to 2015

A Science, Research, Engineering and Technology professionals



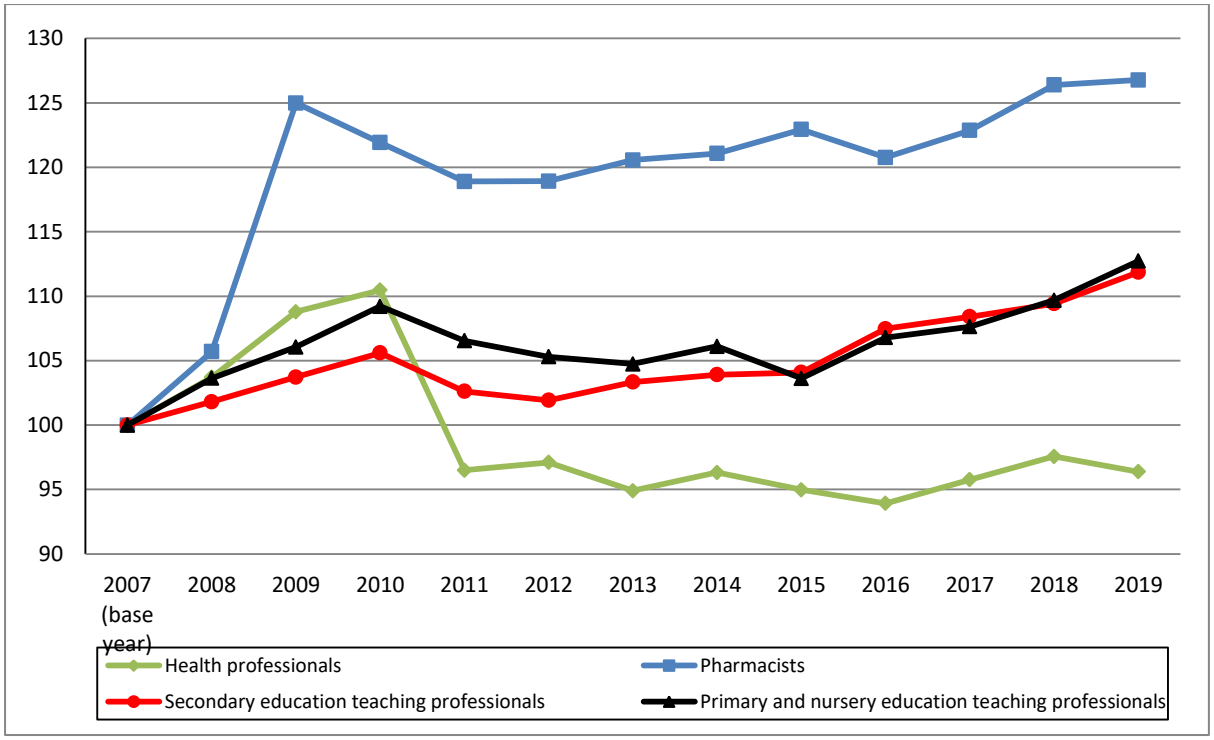
	Chemical scientists	Biological scientists and biochemists	Physical scientists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0	100.0
2008	99.6	101.2	106.2	101.8	103.6
2009	98.4	104.8	115.9	103.7	106.1
2010	94.8	106.6	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	98.0	117.1	117.8	109.4	109.7
2019	99.7	117.4	129.6	111.9	112.7

B Engineering professionals



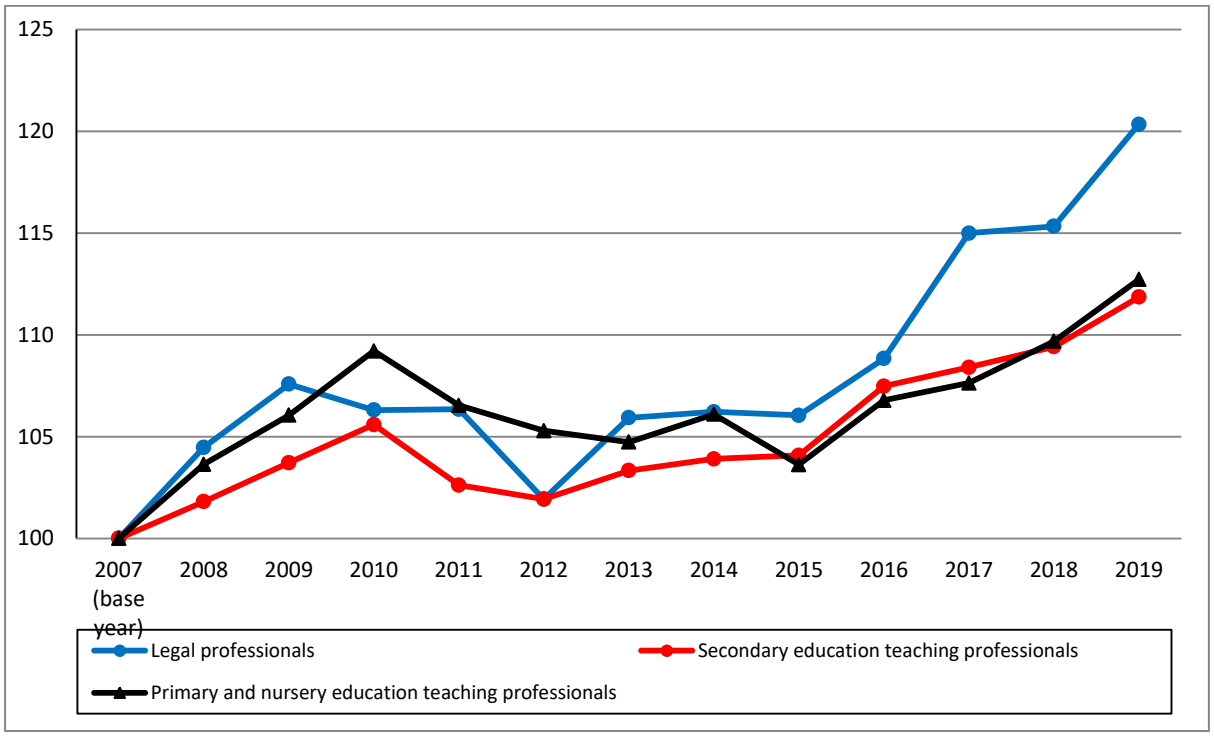
	Engineering professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	105.7	101.8	103.6
2009	105.8	103.7	106.1
2010	106.9	105.6	109.2
2011	108.8	102.6	106.5
2012	111.0	101.9	105.3
2013	113.7	103.3	104.7
2014	115.7	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	109.4	109.7
2019	122.0	111.9	112.7

C Health professionals



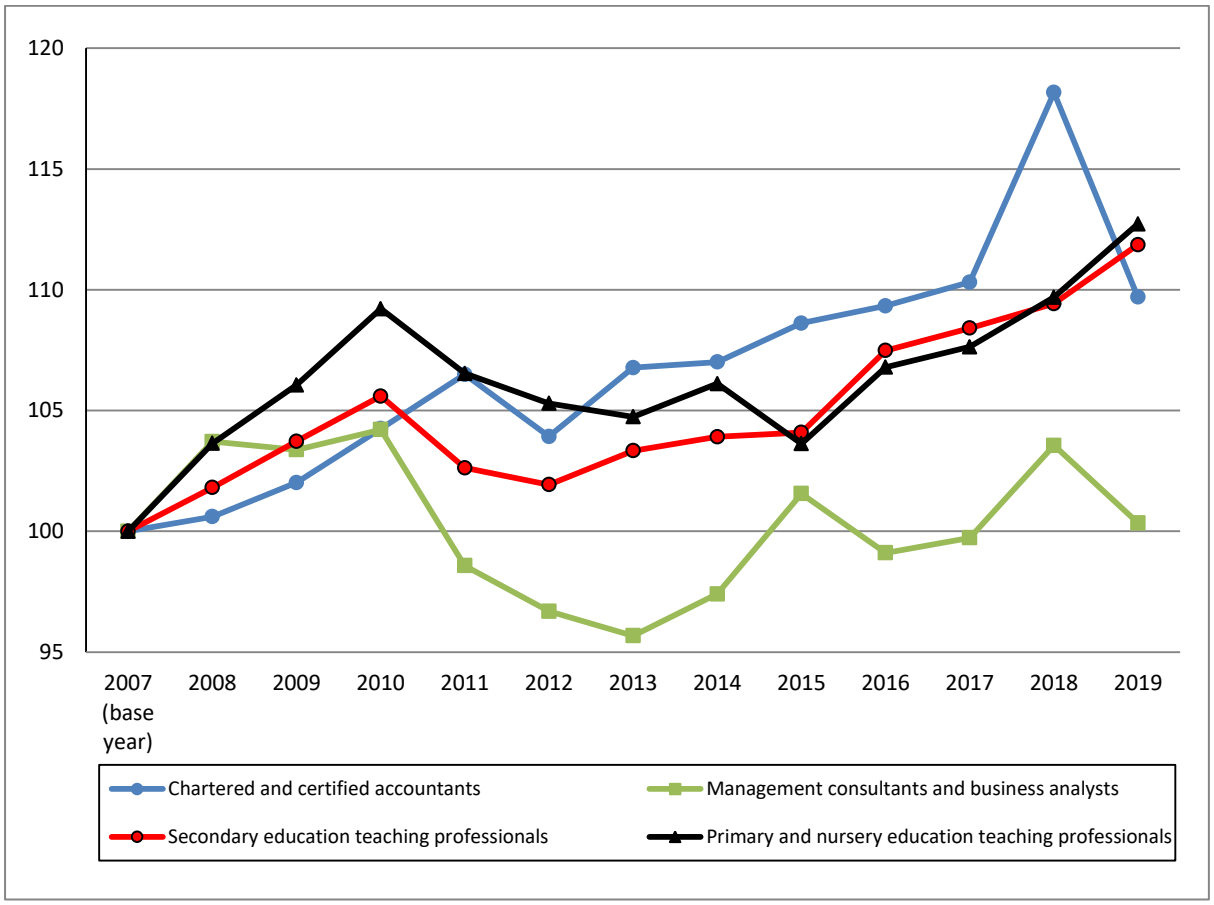
	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0	100.0
2008	103.7	105.7	101.8	103.6
2009	108.8	125.0	103.7	106.1
2010	110.5	121.9	105.6	109.2
2011	96.5	118.9	102.6	106.5
2012	97.1	118.9	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	97.6	126.4	109.4	109.7
2019	96.4	126.8	111.9	112.7

D Legal professionals



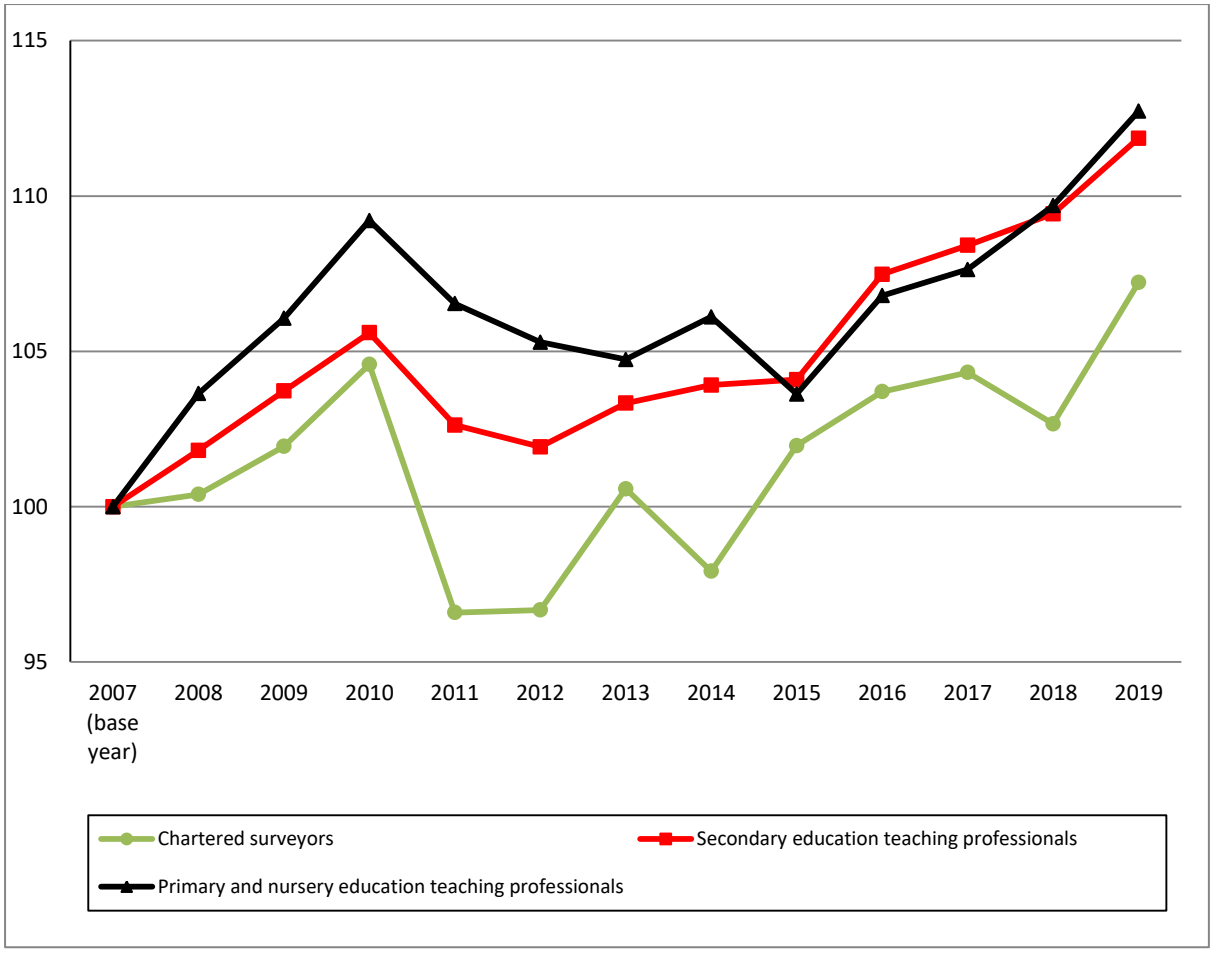
	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007 (base year)	100.0	100.0	100.0
2008	104.5	101.8	103.6
2009	107.6	103.7	106.1
2010	106.3	105.6	109.2
2011	106.3	102.6	106.5
2012	101.9	101.9	105.3
2013	105.9	103.3	104.7
2014	106.2	103.9	106.1
2015	106.1	104.1	103.6
2016	108.8	107.5	106.8
2017	115.0	108.4	107.6
2018	115.3	109.4	109.7
2019	120.3	111.9	112.7

E Business, Research and Administrative professionals



	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	118.2	103.6	109.4	109.7
2019	109.7	100.4	111.9	112.7

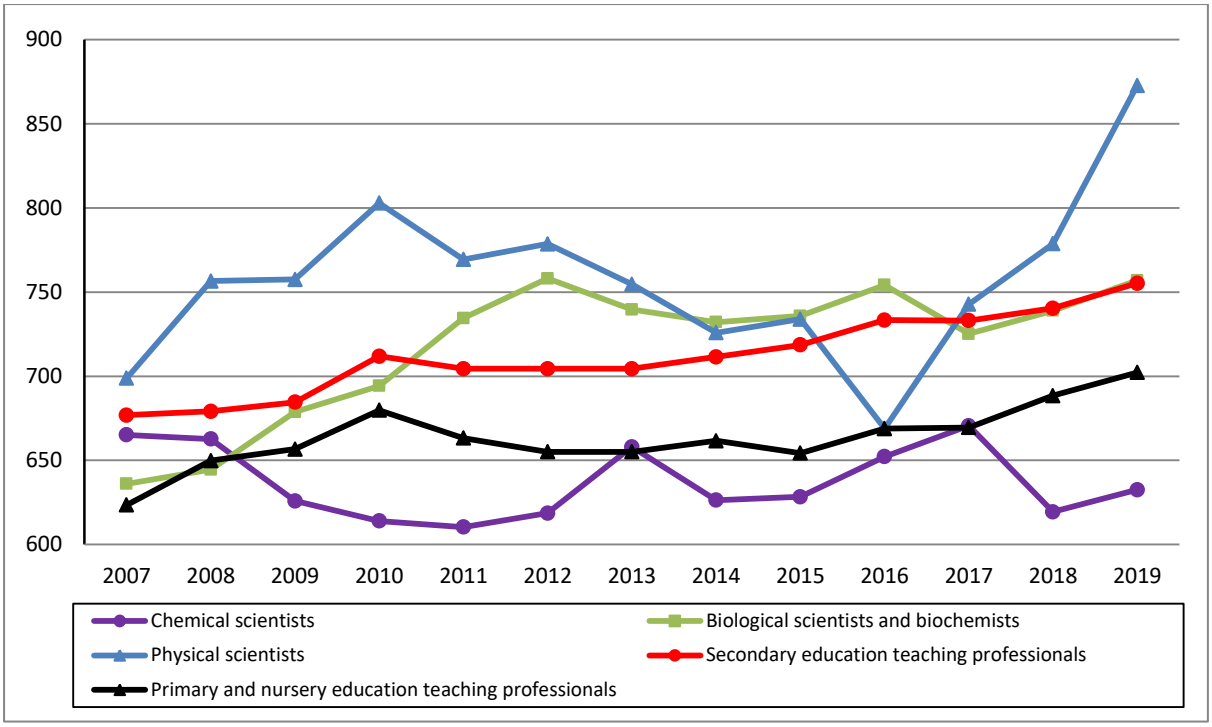
F Chartered Surveyors



	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	102.7	109.4	109.7
2019	107.2	111.9	112.7

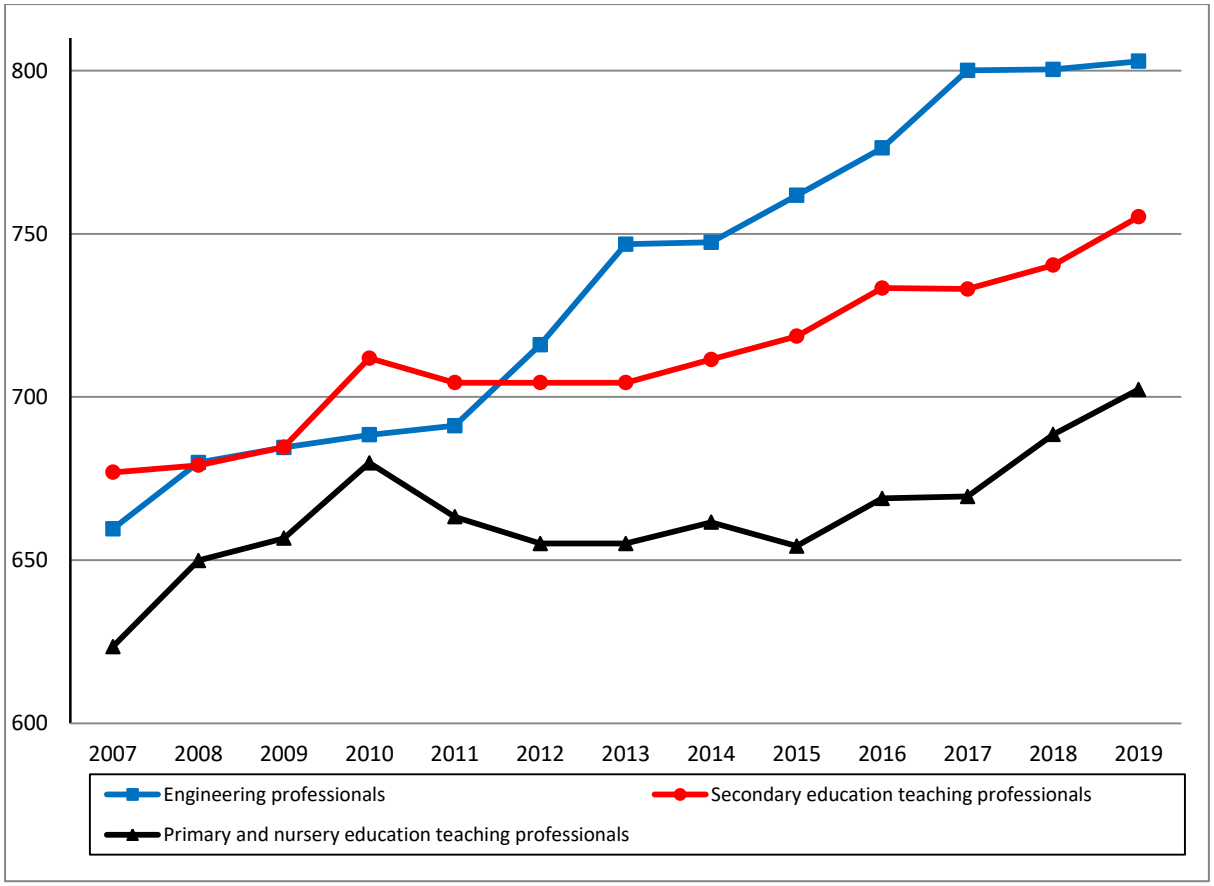
Appendix 7: Median gross weekly earnings 2007 to 2019 (ASHE)

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



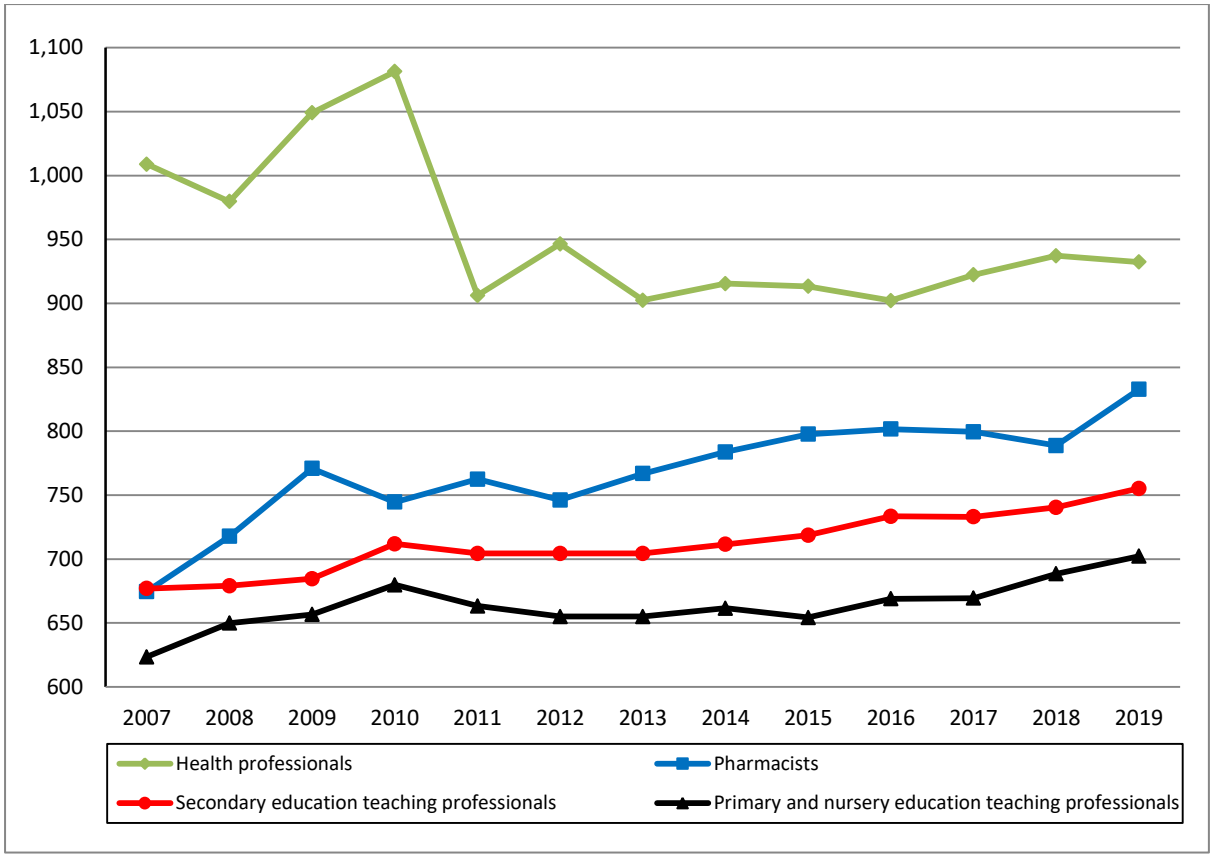
	Chemical scientists	Biological scientists and biochemists	Physical scientists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	665.2	636.1	698.8	676.9	623.5
2008	662.7	644.5	756.6	679.1	649.9
2009	625.9	678.8	757.5	684.6	656.7
2010	614.0	694.3	802.9	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	778.7	740.4	688.5
2019	632.5	756.9	872.8	755.2	702.3

B Engineering professionals (median gross earnings £pw)



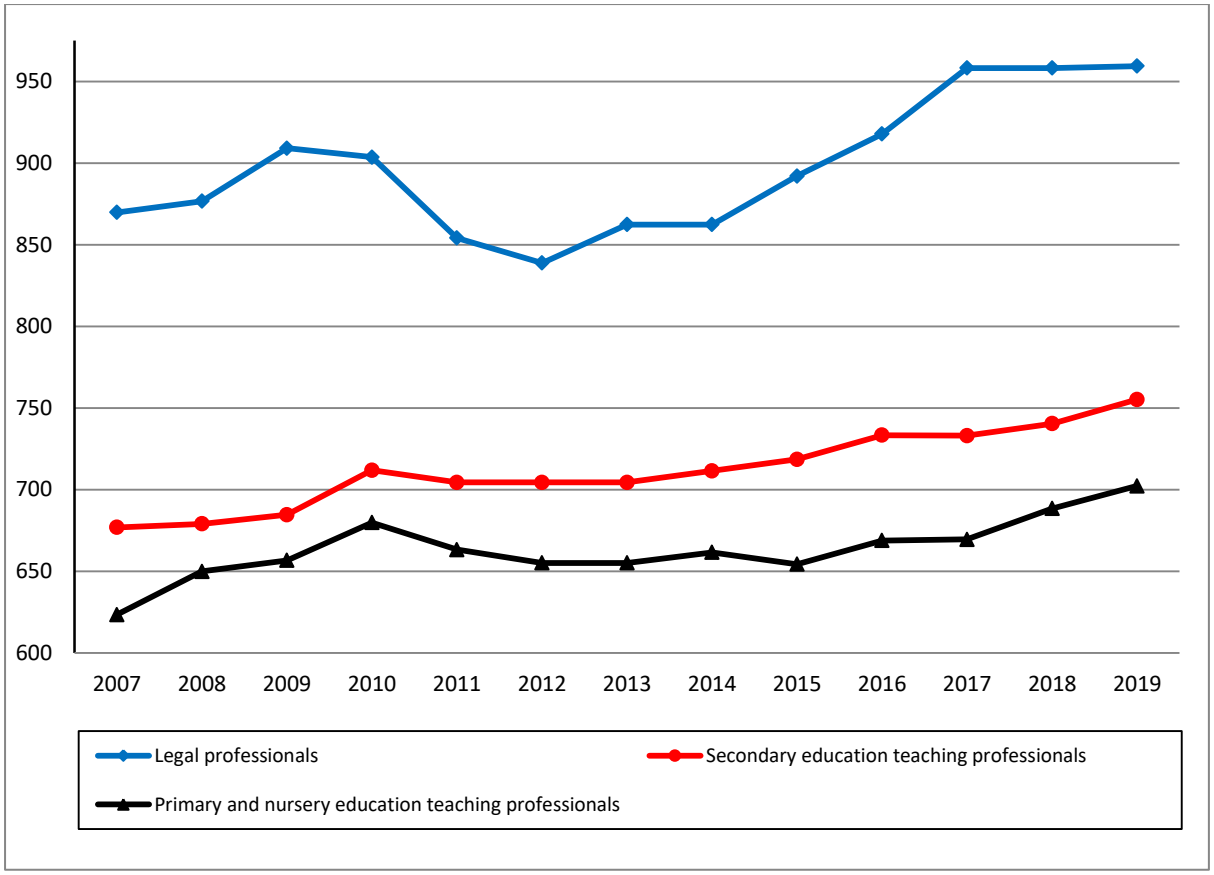
	Engineering professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	659.6	676.9	623.5
2008	679.9	679.1	649.9
2009	684.5	684.6	656.7
2010	688.4	711.9	679.8
2011	691.2	704.4	663.3
2012	716.0	704.4	655.1
2013	746.8	704.4	655.1
2014	747.4	711.5	661.6
2015	761.8	718.6	654.3
2016	776.3	733.4	668.9
2017	800.1	733.1	669.5
2018	800.4	740.4	688.5
2019	802.9	755.2	702.3

C Health professionals (median gross earnings £pw)



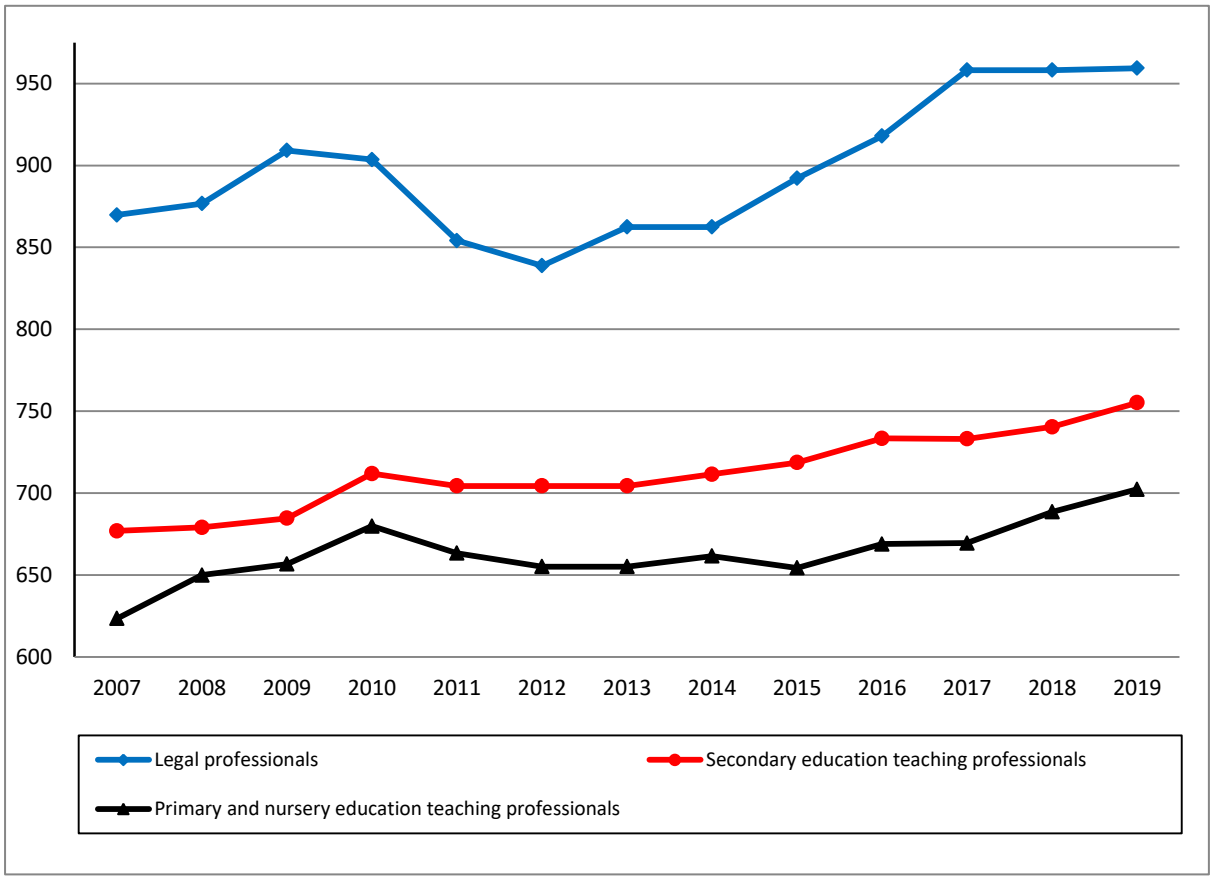
	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	1,008.8	674.6	676.9	623.5
2008	979.7	717.8	679.1	649.9
2009	1,049.0	770.8	684.6	656.7
2010	1,081.4	744.6	711.9	679.8
2011	906.2	762.5	704.4	663.3
2012	946.5	746.2	704.4	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	788.8	740.4	688.5
2019	932.3	832.7	755.2	702.3

D Legal professionals (median gross earnings £pw)



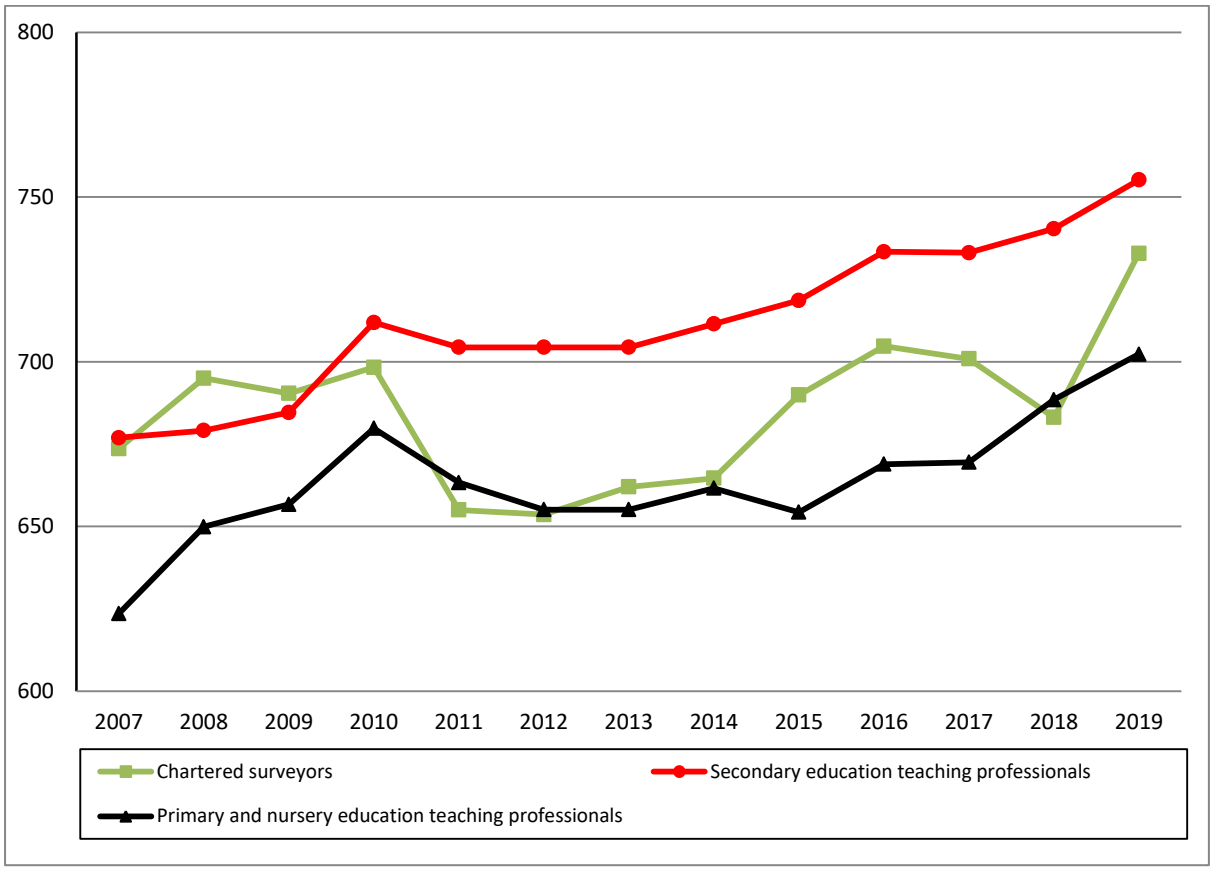
	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	869.8	676.9	623.5
2008	876.7	679.1	649.9
2009	909.1	684.6	656.7
2010	903.6	711.9	679.8
2011	854.1	704.4	663.3
2012	838.8	704.4	655.1
2013	862.4	704.4	655.1
2014	862.4	711.5	661.6
2015	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
2019	959.4	755.2	702.3

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



	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	757.2	778.8	740.4	688.5
2019	753.2	815.7	755.2	702.3

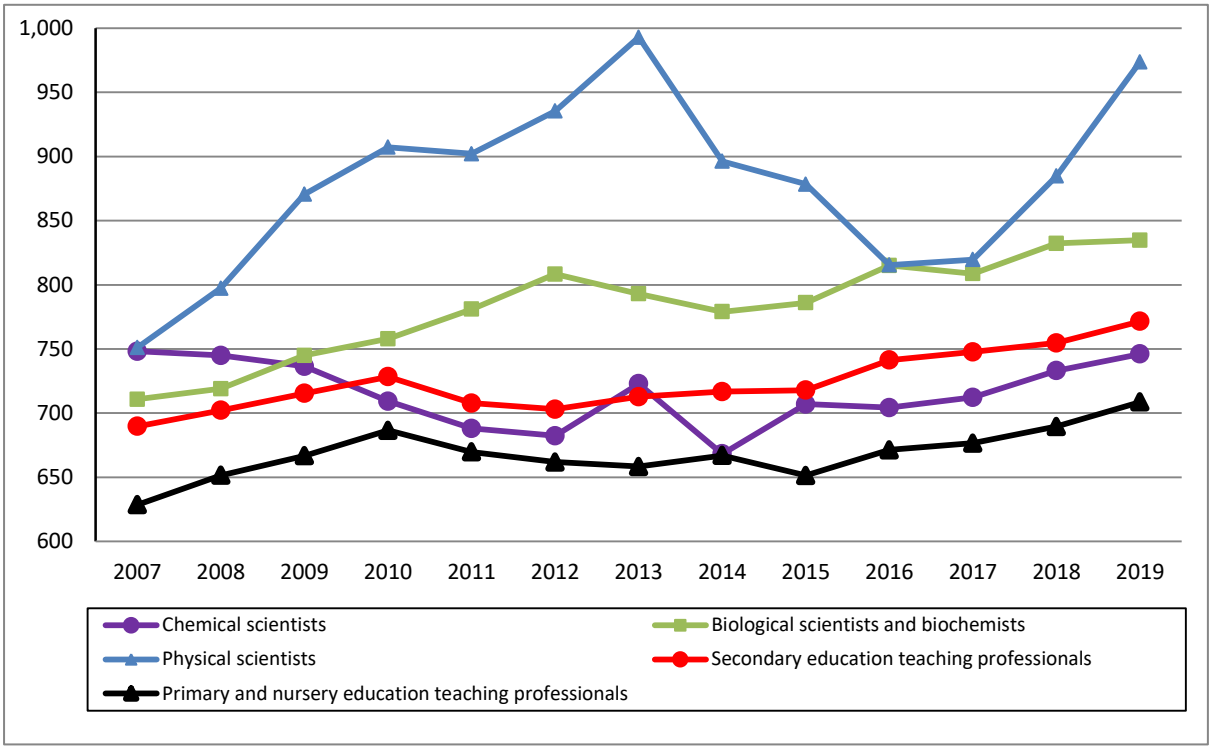
F Chartered Surveyors (median gross earnings £pw)



	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	683.1	740.4	688.5
2019	732.9	755.2	702.3

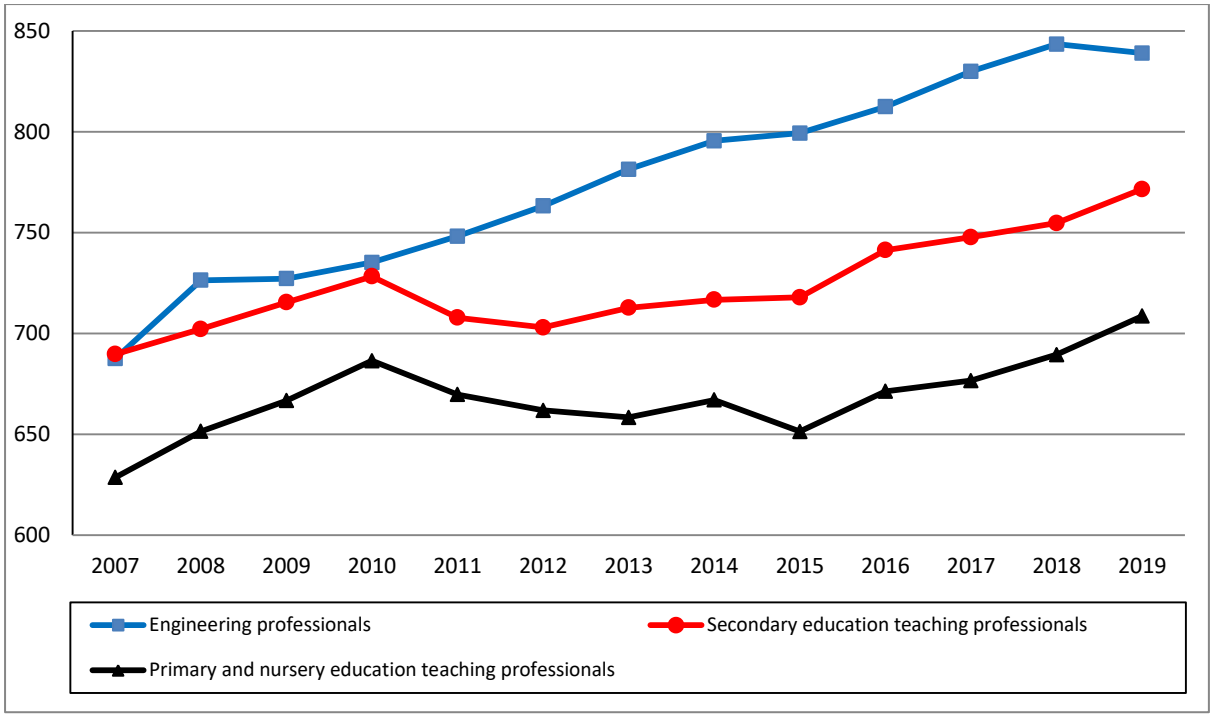
Appendix 8: Average gross weekly earnings 2007 to 2019 (ASHE)

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



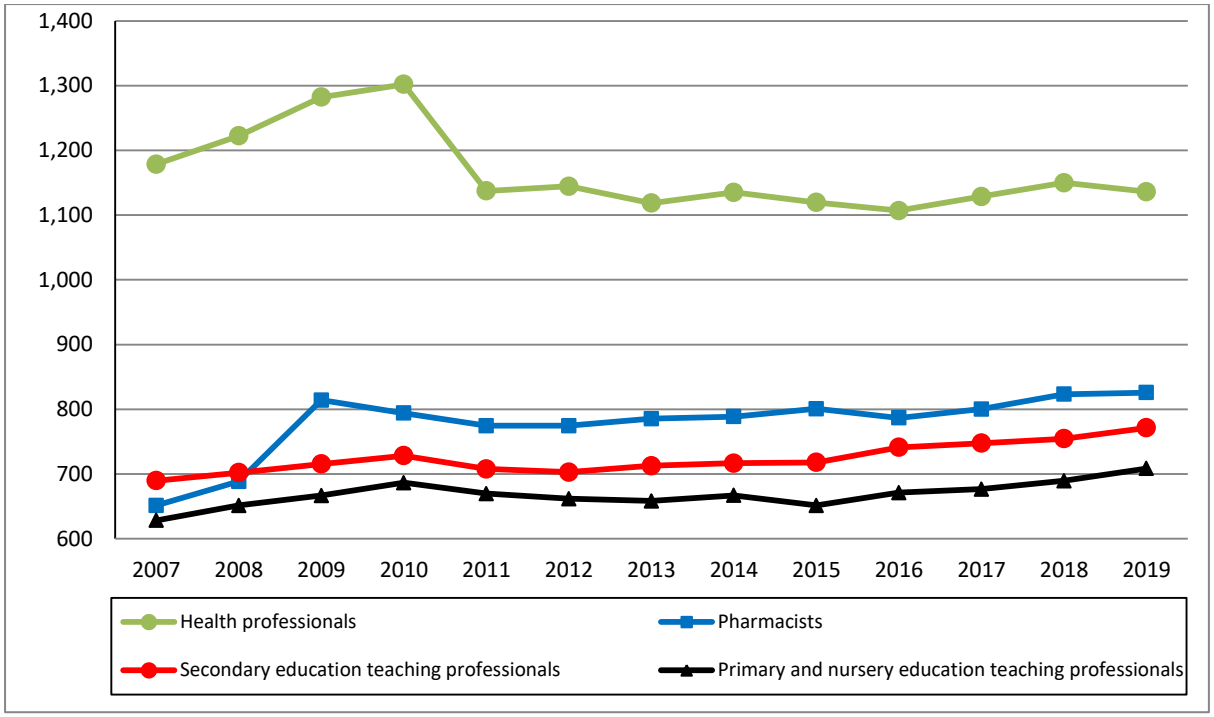
Occupational groups	Chemical scientists	Biological scientists and biochemists	Physical scientists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	748.2	710.8	751.1	689.7	628.6
2008	745.0	719.0	797.3	702.2	651.5
2009	736.5	744.9	870.6	715.4	666.7
2010	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	733.1	832.3	884.8	754.7	689.5
2019	746.1	834.8	973.7	771.5	708.6

B Engineering professionals (average gross earnings £pw)



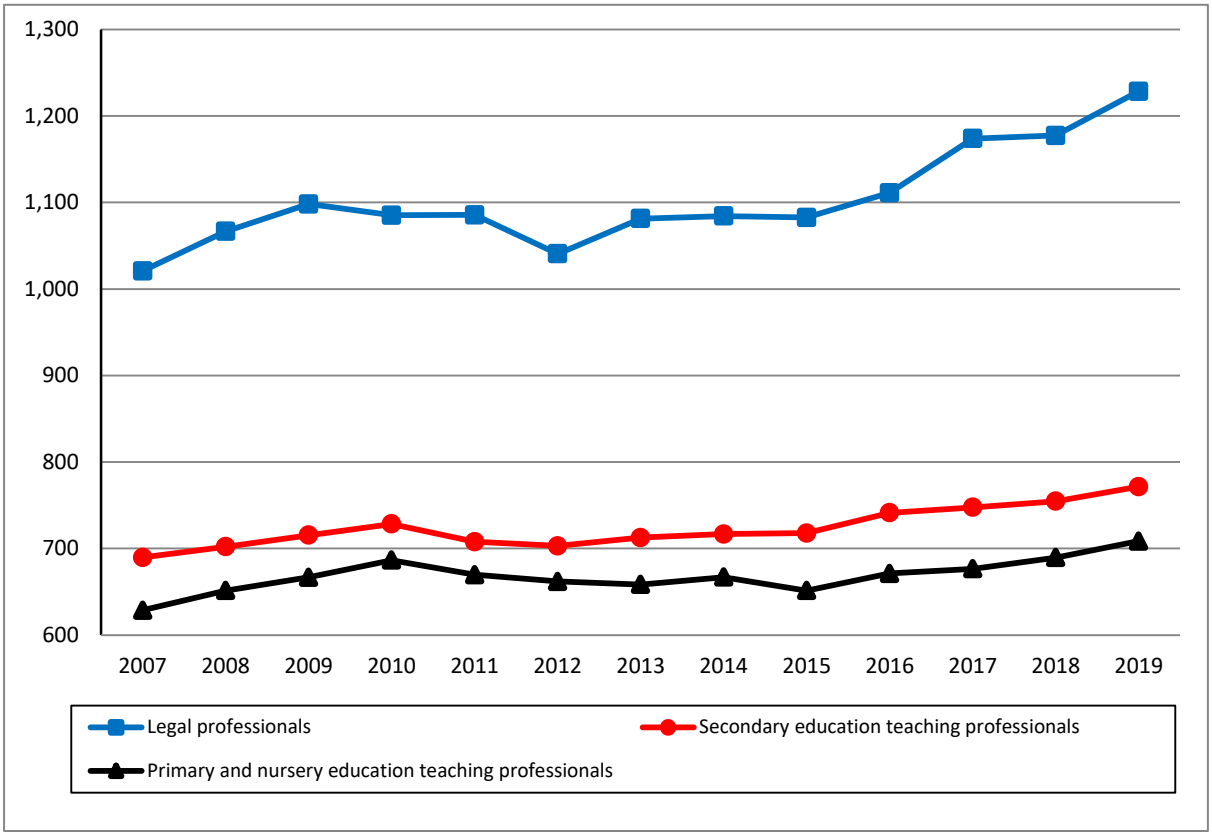
Occupational groups	Engineering professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	687.5	689.7	628.6
2008	726.4	702.2	651.5
2009	727.2	715.4	666.7
2010	735.2	728.3	686.5
2011	748.2	707.8	669.7
2012	763.2	703.0	661.9
2013	781.4	712.7	658.4
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	843.4	754.7	689.5
2019	839.0	771.5	708.6

C Health professionals (average gross earnings £pw)



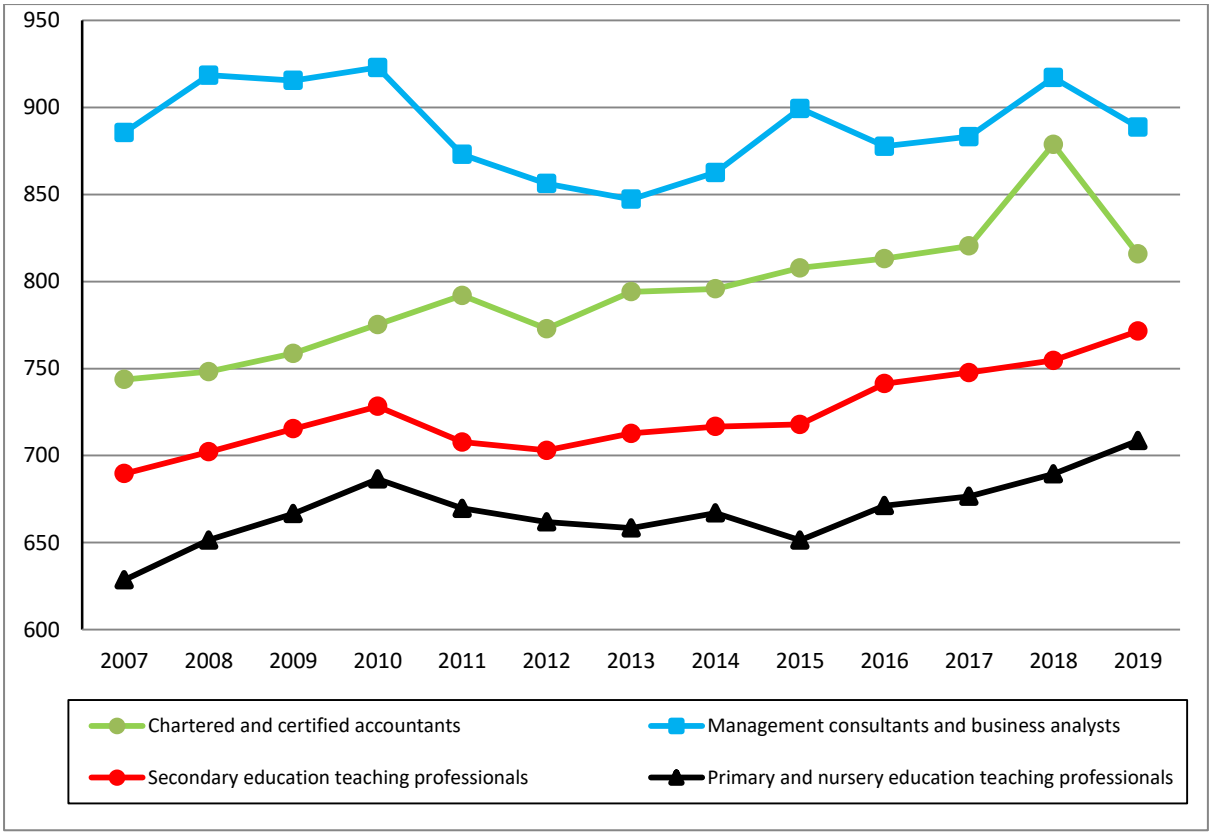
Occupational groups	Health professionals	Pharmacists	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	1,178.6	651.4	689.7	628.6
2008	1,222.4	688.5	702.2	651.5
2009	1,282.2	814.2	715.4	666.7
2010	1,302.0	794.2	728.3	686.5
2011	1,137.3	774.5	707.8	669.7
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	1,149.9	823.3	754.7	689.5
2019	1,136.0	825.8	771.5	708.6

D Legal professionals (average gross earnings £pw)



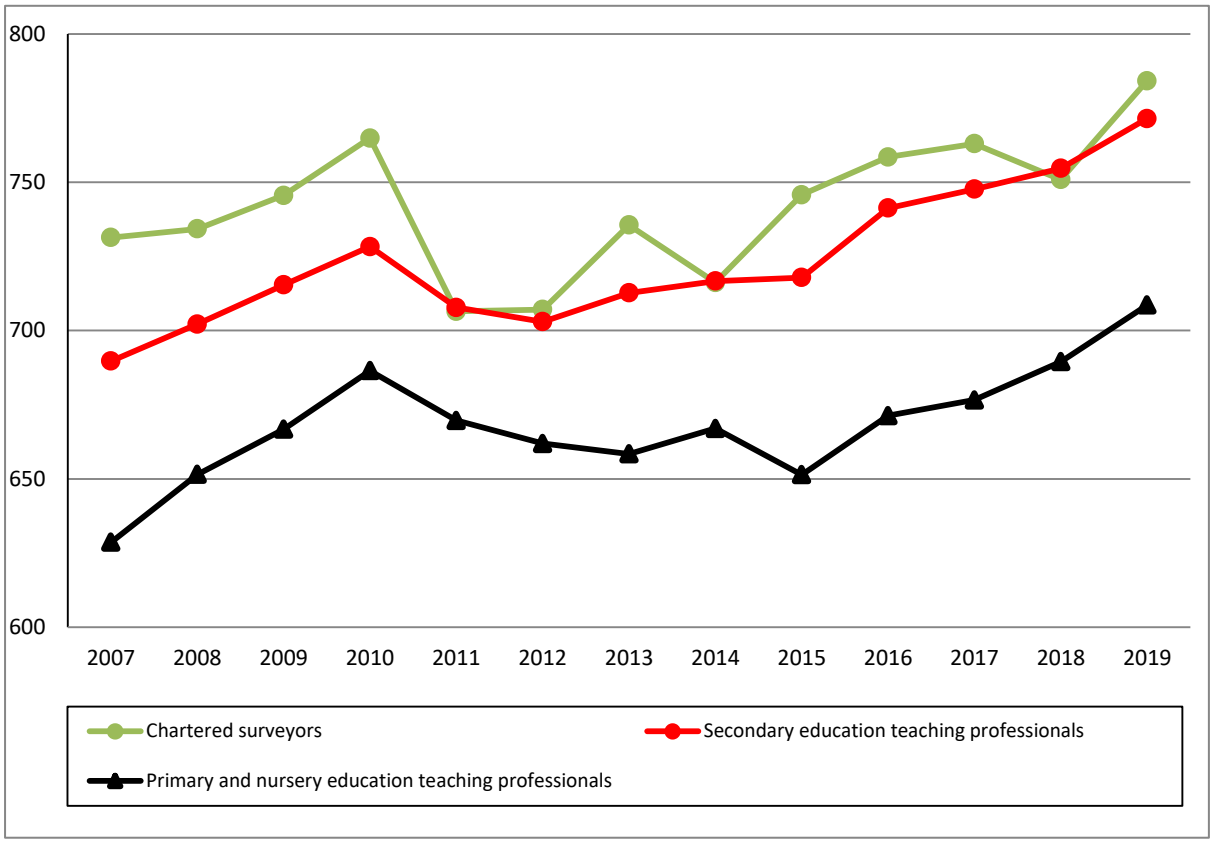
Occupational groups	Legal professionals	Secondary education teaching professionals	Primary and nursery education teaching professionals
2007	1,020.8	689.7	628.6
2008	1,066.5	702.2	651.5
2009	1,098.2	715.4	666.7
2010	1,085.2	728.3	686.5
2011	1,085.6	707.8	669.7
2012	1,040.6	703.0	661.9
2013	1,081.4	712.7	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	1,177.4	754.7	689.5
2019	1,228.5	771.5	708.6

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	878.8	917.1	754.7	689.5
2019	815.8	888.7	771.5	708.6

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	750.9	754.7	689.5
2019	784.2	771.5	708.6

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 2019.

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 nine 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	Occupational definitions 2002-2010	Definitions used in current report
2113	Physicists, geologists and meteorologists	Physical scientists
2213	Pharmacists/pharmacologists	Pharmacist
2423	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 (1.96 multiplied by 10% of £400 equals £78.40) . 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). For example, 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%.