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A review of school teachers' pay in Wales 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

This year represented a major change to the pay landscape affecting school teachers in Wales with the establishment of the new Independent Welsh Pay Review Body (IWPRB). Given that it is only a few months old, it is not surprising that many of the problems faced by the teaching profession in Wales feature in the concerns expressed by those providing evidence. The IWPRB's first set of recommendations were only focused on pay so there have not been any radical changes proposed but it did express a desire to reintroduce a national pay framework for Wales which could represent a further divergence from the approach in England.

This year also witnessed the Welsh Government's at least partial recognition of problems surrounding recruitment and retention rates. While it said that throughout Wales there is little evidence of concern with regard to these issues, it added that it was aware of anecdotal evidence of pockets of difficulty in recruiting to certain secondary subjects, in some geographical locations across Wales, as well as with certain Welsh-medium provision. While representing a slight change in attitude from the past, this still contrasts with the views of many of the teaching unions who believe that recruitment and retention in the profession is in crisis in Wales, especially given that pupil numbers are forecast to increase markedly in the future.

The Welsh Government asserts that pay does not appear to be the most significant factor contributing to teachers leaving the profession, arguing that of greater significance are a combination of factors linked to teachers' conditions, in particular, issues of workload and accountability. The trade union side, however, argued that pay has always been an important issue, citing an Education Policy Institute report from 2018 that suggested that pay is more important than workload for teacher retention. Either way, with the Government and Education Inspectorate addressing issues over workload, those on the union side argue that pay will return to the fore.

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 th
is area. In 2015, our report covered the UK as a whole but since 2016 the research has focused specifically on Wales and, 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.

In previous reports, the starting period for the analysis was 1998 whereas last year the focus changed so that the comparison period began in 2007. This year's study takes the same approach examining the years from 2007 to 2019. As we noted last year, a main reason for the change is that the economic and working environments have altered markedly since 1998, so a 20-year period of comparison is no longer such a useful barometer of change. Additionally, since 1998, some of the job categories defined by the Office for National Statistics (ONS) have undergone numerous changes making cross-year comparisons over the longer period less valid.

As a result, focusing on this more recent period means that the study starts from just before the economic crisis that began in 2008 and examines the trends exhibited in the years since then while still covering a period of 13 years. As with all the NASUWT reports we have produced, this latest one 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 spanning 2007 to 2019. More specifically, the report focuses on basic and gross weekly full-time earnings in Wales 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.

We focus on average as well as median statistics because a 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 in Wales where concerns have been expressed about pay at more experienced levels.

The 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.

In addition to comparisons of average earnings, the report analyses the annual percentage changes in median and average basic weekly earnings for teachers in Wales and each of the selected comparator occupations in relation to the average annual RPI and CPI rates of inflation from 2007 to 2019.

The report also sets out developments in teachers' pay in Wales 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 Wales 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 graduates' 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.

As in previous years, 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 Wales in some years for certain 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 for Wales in many of the years examined.

On top of this, 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 categories. 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. Moreover, in 2010, the ONS also created a new 3-digit 'health professionals' subgroup which excluded general medical

practitioners (GPs). Prior to this the 2-digit major group named 'health professionals' included both GPs and other health professionals. As a result of this change, all the earnings figures for aggregate health professional fell between 2010 and 2011.

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

1.2. Structure of the report

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

Chapter 4 provides an overview of the graduate labour market in Wales and analyses results from the IDR 2019 graduate recruitment and salary survey (and other sources) and reviews how starting salaries for graduates compare with those for school teachers in Wales.

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.

Note that we also wanted to conduct an extended analysis focusing on lower and upper quartile earnings levels for all the professions to determine how differentials vary beyond midpoint levels as measured by median and average statistics. However, the ONS sample sizes in Wales were insufficient to include quartile figures.

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

From September 2019, control over teachers' pay and conditions was devolved to the Welsh Government. Prior to this, teachers in Wales were subject to the same pay scales and rises as their counterparts in England with data on pay movements clearly demonstrating a lack of significant real-terms pay increases since before the recession a decade ago.

Under the new regime, in October 2019, the Welsh Minister for Education announced a 5% rise in the starting salary for newly-qualified school teachers in Wales, while the minimum and maximum of all other teacher pay ranges and allowances were increased by 2.75%. These increases were higher than the 2.4% rises recommended by the new Independent Welsh Pay Review Body and the rises were backdated to 1 September 2019. They also represent real-terms increases for all teachers in Wales at a point when the RPI was running at around 2.5% and the CPI around 1.6%.

Last year, under the previous pay-setting regime, increases for teachers employed on the main pay range (MPR) and the upper pay range (UPR) were differentiated with those on the UPR receiving a smaller increase. This year, there was no such differentiation with the nearly 60% of classroom teachers in Wales on the UPR receiving the same 2.75% as those on the MPR with the exception of newly-qualified teachers who received a 5% increase.

In the years prior to the devolution of pay determination, particularly since 2011, there was an overall real-terms erosion of pay for Welsh teachers with increases mostly trailing those received by other occupational groups. At that time, the teaching profession was subject to the two-year public sector pay freeze, followed by the 1% pay cap. In 2017, the cap was raised a little with a 2% rise for teachers on the main range (though teachers on the upper range only received 1%) while in 2018 some teachers received a real-terms increase. Those on the main pay range received 3.5% which represented real-terms increases whereas teachers on the upper pay range received just 2%, below both measures of inflation.

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. Since then, however, schools in Wales have had discretion over how and whether to pay progression increases to individual teachers unless they are at the bottom of the salary range.

Despite this, the new review body in Wales, the IWPRB, reported in June that this flexibility has not been used in Wales with a more collaborative approach preferred by all stakeholders. It argued that this has maintained more consistency across the nation as compared to England which it said has an approach that is more market-driven with greater variations in pay rises, a range of types of schools including academies and free schools and encouragement to relinquish local authority.

In response, when outlining the new Welsh independent review bodies' remit, the Minister for Education explicitly stated that: "Over recent years the approach of the Westminster Government to teachers' pay has led to the development of a pay structure that is no longer appropriate, relevant or to the advantage of the profession here in Wales."

As a result, the direction of travel in Wales appears to be towards a return to some form of incremental progression related to professional development. Currently, there are no concrete plans in place but the June 2019 IWPRB report said that ideally it would prefer the (re)introduction of scale points to provide national rates for all teachers but because this could involve significant changes to the statutory framework of teachers' pay in Wales a possible alternative suggested was for 'indicative scale points'. Such an approach, it was argued, would be simpler to administer, provide greater transparency and remove the need for time-consuming negotiations between local authorities and trade unions.

1.4. Pay rankings

In its first report, one of the conclusions of the IWPRB was that it agreed with trade unions that the level of teachers' pay is a factor in retention, although it added that by no means is it a primary or sole factor. Linked to this, the IWPRB found that teachers' starting salaries tend to be lower than those paid to other graduate level professions, adding that comparison of salaries at later career levels is more complex and requires further investigation which is planned.

The IWPRB conducted its own analysis of how teaching pay compares to a predominantly public sector group of professions using ASHE data from 2018. It concluded that the median gross earnings of both primary and secondary teachers were reasonably competitive when compared to both those for teachers in other regions and those for a comparator group of 17 mainly public sector professions.

It should be noted, however, that this was based on median pay rankings that tend to place teachers' earnings in a higher relative position than if averages are used, particularly when compared to earnings for private sector jobs as illustrated in this and our previous reports.

The Welsh Government supported the IWPRB's conclusion, highlighting findings from its 2019 survey of teachers' views, which showed that when teachers were asked what are the most important factors that keep them in teaching, pay and conditions only featured halfway down the list.

Responses from trade unions and other teacher representative groups paint a different picture however. For example, the latest available NASUWT survey of Welsh members' views from 2018 found that: 'the depression of pay has resulted in significant implications for teacher supply'. More specifically, it found that pay remains one of the top three reasons for leaving the profession and of those that had seriously considered leaving the profession in the last 12 months, 71% said that pay is a 'critical factor'.

Similarly, the National Education Union in Wales (NEU Cymru) argued that: 'the underlying cause of retention problems is the failure of the teaching profession to offer pay levels, pay prospects and working conditions of a high enough quality to retain the teachers we need'.

Given the level of disagreement on the importance of pay, it is essential to examine the latest available data more closely to help determine where both teachers' median and average earnings in Wales are currently positioned relative to those of other professions. Below, we compare the latest evidence on median and average gross earnings of teachers with those of 10 other graduate professions to create a ranked table of earnings.

Table 1 below, for instance, illustrates that when measured by median gross earnings the two Welsh teaching groups were ranked at around the midpoint level or lower when compared to the other graduate professions, depending on the year examined. Comparisons across the three years are complicated by the fact that median gross earnings data is available for only five non-teaching professions in 2007, as against eight in 2012 and six in 2019.

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

Group	2007 rank	2013 rank	2019 rank
Secondary education teachers	3	3	4
Primary and nursery education teachers	4	6	4

Source: ASHE

**Based on available data for five non-teaching professions in 2007, eight in 2013 and six in 2019*

Table 2 shows average gross earnings, and measured in this way teachers' rankings were even lower. In 2019, for instance, secondary teachers were placed seventh out of ten professions while primary and nursery school teachers were positioned ninth. As well as teachers, some other professions show comparatively low average earnings in Wales. Most notable among this group were chartered surveyors, accountants and management consultants, earnings for whom were consistently at or near the bottom when based on both median and average figures.

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 Wales 2007, 2013 and 2019*

Group	2007 rank	2013 rank	2019 rank
Secondary education teachers	6	5	7
Primary and nursery education teachers	7	9	9

Source: ASHE

**Based on available data for nine non-teaching professions in 2007 and nine in 2013 and eight in 2019*

For most professional and managerial occupations, average pay figures usually exceed medians because such groups often contain a higher proportion (compared to non-professionals) of senior employees with longer job tenure and greater access to incentive pay and who therefore have comparatively higher pay levels. For the two teaching groups in Wales, however, both average gross pay figures in 2019 were below the equivalent medians. For example, the primary teacher average stood at £713.30 per week compared to a median of £755.20. The 2019 secondary school teacher average gross earnings level was also £755.20 which was also higher than the corresponding average that stood at £729.60. By contrast, the average-median gross earnings differentials in 2019 for the other six professions with sufficient data were all positive and ranged from 1.6% for chartered surveyors to over 30% for management consultants and business analysts. This difference is likely due to the influence of a comparatively large number of lower-paid staff, eg newly-qualified or unqualified teachers, on the average figures for teachers.

Due to these differences, median gross earnings for teachers in Wales in 2019 are fourth and fifth highest-paid out of six professions whereas they are seventh and ninth out of ten when measured by average gross earnings.

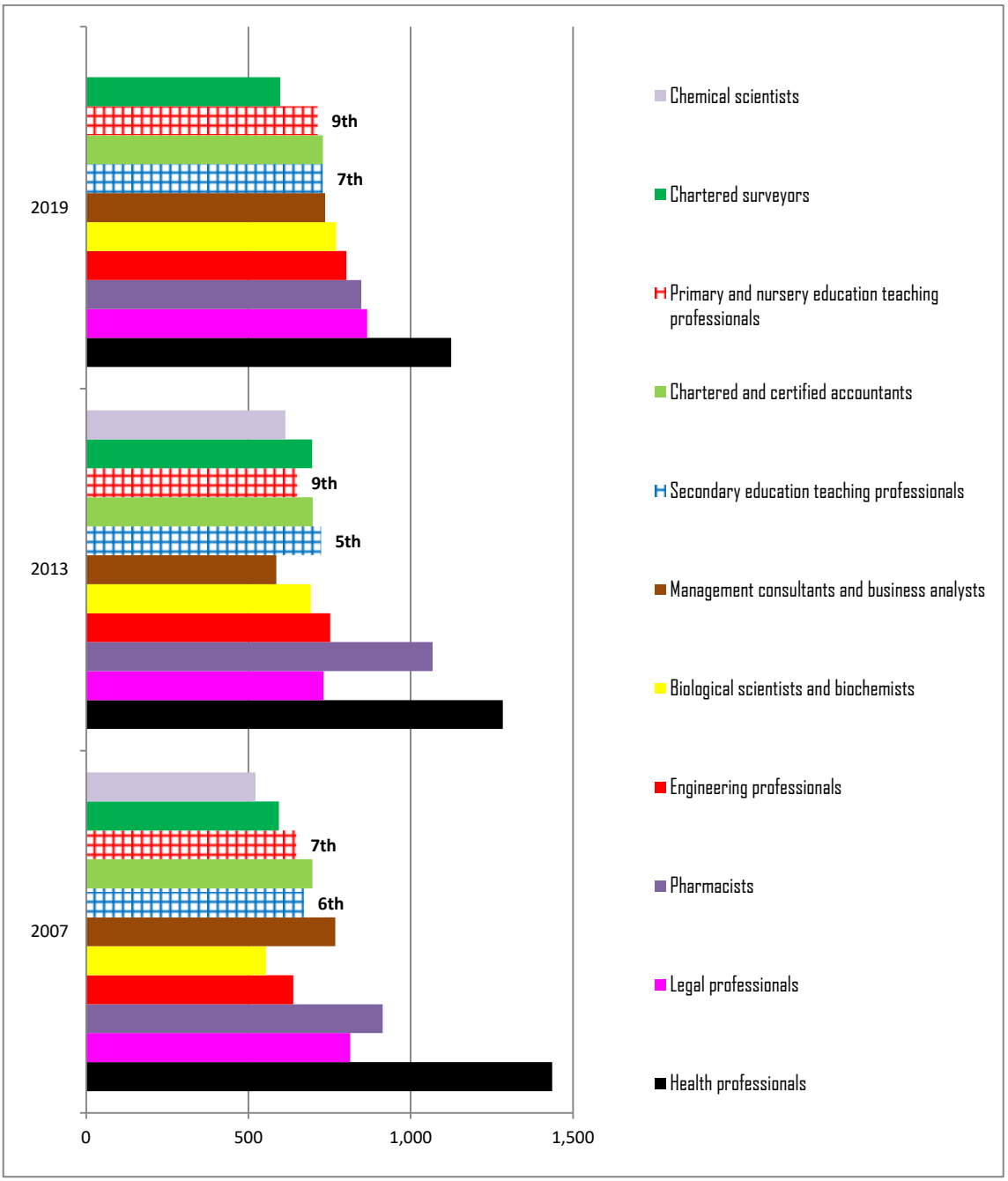
1.5. Magnitude of pay gaps

Rankings like the ones above, however, do not provide any insight into the *magnitude* of gaps that currently exist between the earnings of teachers and those for other professions. By contrasting the earnings figures for each of the comparator groups with those of the two teacher groups it is possible to show whether any differentials are significant. Graph 1 demonstrates this although unfortunately, not all of the occupations had sample sizes sufficient enough for the ONS to disclose data so for some years some bars are missing.

As with the rankings above, the graph below shows that secondary teachers in Wales were positioned towards the bottom of the average gross earnings table in 2019 whereas primary teachers were next to bottom. As well as these rankings, the graph provides greater insight into the degree of earnings differentials too, illustrating that some of the pay gaps are substantial.

For instance, in the latest year, health professionals' average gross earnings far exceeded those of the other groups. This group was followed by pharmacists, legal professionals and then engineers. Secondary teachers' average gross earnings were seventh in the rankings (out of 10) although they differed very little from those of accountants and management consultants. In contrast, the corresponding average amount for primary teachers was the second lowest although only slightly lower than the figure for accountants.

Graph 1 Comparison of average gross earnings (£pw) of all comparator graduate professions including school teachers in Wales: 2007, 2013 and 2019*



Source: ASHE

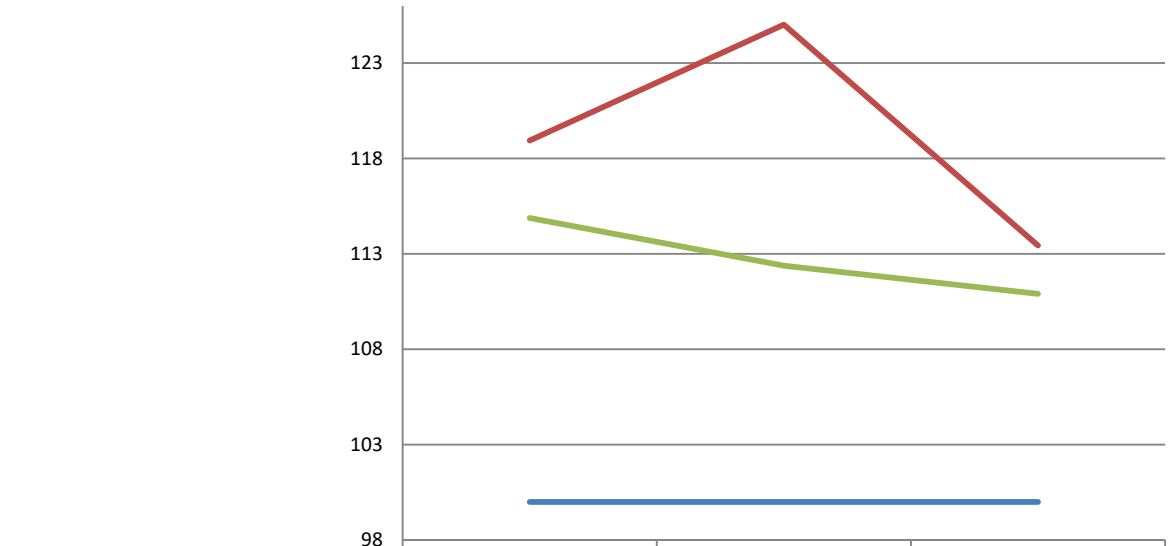
**Based on available data for nine non-teaching professions in 2007 and 2013 and eight in 2019*

1.6. Teachers' earnings persistently lag behind

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

The graph shows 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 10.9% above those for secondary school teachers and 13.4% ahead of average earnings for primary school teachers. The chart also exhibits a narrowing of the earnings differential between the non-teaching figure and secondary teachers across the whole period from 2007 to 2019. In contrast, for primary and nursery teachers, the gap widened between 2007 and 2013 before narrowing in the latter period. As mentioned above, however, a degree of caution needs to be exercised when drawing conclusions from cross-year comparisons due to the unmatched samples with fewer professions included in 2019 than the other two years.

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



	2007	2013	2019
School teachers	100.0	100.0	100.0
Average position of other professions versus primary and nursery school teachers	118.9	125.0	113.4
Average position of other professions versus secondary school teachers	114.9	112.4	110.9

Source: ASHE

**Based on available data for nine non-teaching professions in 2007 and 2013 and eight in 2019*

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

To address this, Table 3 provides an illustration of the magnitude of pay disparities between teachers and each individual graduate profession in 2019. For greater clarity, the table is colour-coded with differentials shaded blue where teachers' earnings are lower than those for the other professions and red where they are higher. It is clear that the table is predominantly blue with a little under 70% of the cells shaded in this colour.

Another notable aspect of Table 3 is that average amounts for non-teaching professions were almost all higher than the corresponding teaching amounts, whereas for medians, the picture was more

balanced with both primary and secondary teaching amounts standing above those of three non-teaching professions and below three others.

An examination of the magnitude of differentials demonstrates that for median figures, the teaching amounts were both over 29.2% higher than the equivalent figures for management consultants and chartered surveyors whereas they were around 17% greater than the amounts for the accountancy group. On the other hand, median gross earnings of teachers were only marginally below those for engineers and legal professionals whereas they trailed health professional amounts by nearly 25%.

The pattern for average gross earnings was markedly different with the non-teaching professions tending to have higher figures than the corresponding teaching amounts, in some cases, with large differentials. For example, health professionals had differentials of over 50% compared to both teaching groups. Legal professionals and pharmacists also had average gross earnings that were significantly higher than the corresponding teaching groups whereas the average figures for management consultants and chartered accountants were very similar to those found in teaching. Biologists and engineering professionals were the other two groups with higher average gross earnings while chartered surveyors were the only group with average amounts below both teaching groups.

Table 3 Median and average gross weekly earnings differentials of 10 graduate professions versus teachers in Wales 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 %
Secondary education teaching professionals	729.6			755.2		
Primary and nursery education teaching professionals	713.3			755.2		
Chemical scientists	No data			No data		
Biological scientists & biochemists	769.8	5.5	7.9	No data		
Physical scientists	No data			No data		
Engineering professionals	801.4	9.8	12.4	763.8	1.1	1.1
Health professionals	1124.5	54.1	57.6	942.6	24.8	24.8
Pharmacists	847.5	16.2	18.8	No data		
Legal professionals	866.2	18.7	21.4	771.5	2.2	2.2
Chartered & certified accountants	729.1	-0.1	2.2	643.9	-14.7	-14.7
Management consultants and business analysts	736.5	0.9	3.3	584.7	-22.6	-22.6
Chartered surveyors	598.5	-18.0	-16.1	589.0	-22.0	-22.0

Source: ASHE

1.7. Wales compared to England and Scotland

As in our previous two Welsh reports, this year we took a broader perspective by examining how the average gross earnings of teachers in Wales, England and Scotland compared to the other professions in each respective country. This is because teachers, like other graduate professions, are more mobile geographically than most non-graduate occupations. Indeed, as the IWPRB stated, the proportion of students from Wales choosing to train as a teacher in England is increasing.

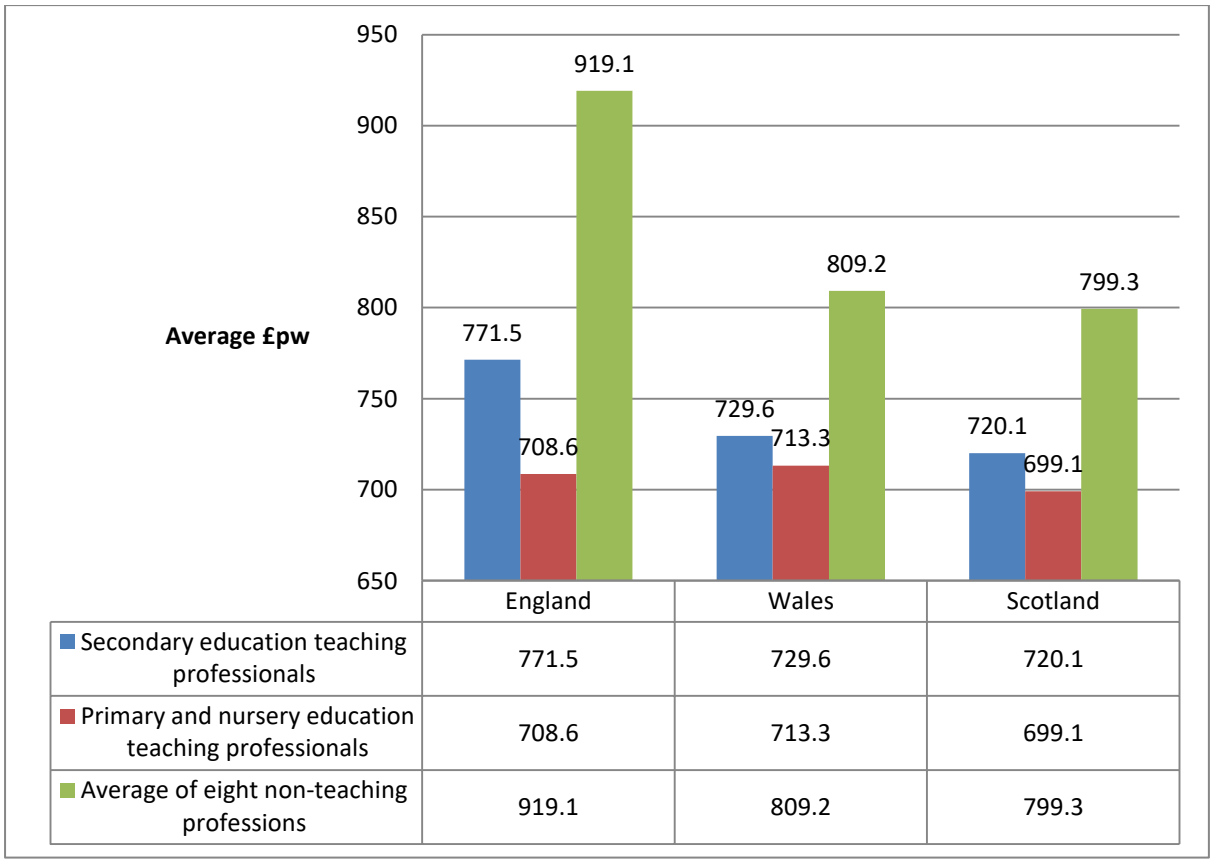
Graph 3 shows average gross earnings for secondary and primary teachers in Wales in comparison to the average of a group of the same eight non-teaching professions from all three countries – biological scientists, engineering professionals, health professionals, pharmacists, legal professionals, chartered surveyors, chartered accountants and management consultants. Only eight non-teaching occupations are used because data was not available for all 10 groups in both Scotland and Wales in 2019.

The graph illustrates that the average gross earnings of both teaching groups are significantly below those of the corresponding non-teaching groups in England, Scotland and Wales. In addition, the figures for secondary teachers in Wales were lower than the corresponding amounts for England but

greater than those in Scotland. In contrast, the average gross earnings figure for primary and nursery teachers in Wales was higher than in the other two countries.

An examination of the non-teaching levels also illustrates that the earnings for non-teaching groups are significantly lower in Wales and Scotland than in England so the gap between teachers' and non-teachers' earnings is wider in England than it is in the other two countries.

Graph 3 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

1.8. Main findings

School teachers' earnings

- Official data on pay movements demonstrates clearly that teachers in Wales have not had significant real-terms pay increases since before the recession.
- In the last two years, headline pay increases for teachers have improved slightly although real-terms increases for all teachers in Wales in recent years only re-emerged in the latest 2019 pay review.
- Despite this, average gross earnings for teachers in Wales still compare unfavourably with those for other graduate occupations in the country.
- When measured by median levels, the position is not so stark with both teaching groups positioned around the middle when ranked against comparable non-teaching professions.
- In terms of average gross earnings though, secondary teachers were positioned seventh out of ten occupations whereas the primary and nursery school teacher ranking was ninth.
- For the median gross figures, rankings were fourth and fifth out of eight job groups.
- When measured by median basic earnings, the picture for teachers is better reflecting the fact that teachers are not so reliant on the additions to pay found in some other private sector professions' earnings.
- On this measure, secondary school teachers were both placed in third position out of eight professions.
- An analysis according to average basic earnings demonstrated that the respective positions were lower at eighth and ninth place respectively within a sample of 10 job groups.
- A focus on the magnitude of differentials shows that where the teaching groups' pay levels exceeded those for other non-teaching professions, the positive differentials were generally small or marginal.
- In contrast, where teachers' pay levels trailed some of the higher-paying professions, the differentials were generally more significant.
- Average gross earnings for secondary teachers in Wales were lower than the corresponding amounts for England but greater than those in Scotland.
- In contrast, the average gross earnings figure for primary and nursery teachers in Wales was higher than in the other two countries.

Recruitment and retention

- In the past, the Welsh Government did not recognise any significant problems with recruitment and retention but this year there has been a slight shift in its perceptions.
- For example it said that "whilst overall recruitment and retention rates throughout Wales show little evidence of concern, we are aware of anecdotal evidence that there are pockets of difficulty in recruiting to certain secondary subjects, in some geographical locations across Wales, as well as with certain Welsh-medium provision".
- Teacher demand is likely to be a growing issue in the future due to a projected rise in pupil numbers over the next 10-15 years, particularly in the secondary sector.
- Based on existing conditions, however, it is not clear whether this demand will be met with the IWPRB reporting that current trends associated with teacher vacancies and applications are a cause for concern.
- For example, there has been a decline in the number of applications for posts when vacancies arise while more vacancies are being advertised despite a drop in total teaching posts over the last decade.
- On top of this, initial teacher education targets have been consistently missed in recent years making it appear less likely that the rise in demand will be met by new entrants.
- Perhaps this is why the Welsh Government said that in future there "will be reliance on primary sector re-entrants and an increasing reliance on secondary sector re-entrants to fill vacant positions".
- In terms of retention, some of teaching unions consulted for the IWPRB report went as far as to say that retention in the teaching profession is deteriorating and is beginning to enter a "crisis" period.
- Most cited the National Education Workforce Survey (EWC) from April 2017 that found that 33.6% of teachers stated that they wish to leave the profession in the next three years.
- Another striking statistic emerging from the IWPRB report was based on retention data from the EWC which showed that of the nearly 2,000 teachers that gained qualified status in 2005/06, 48.4% were no longer registered as school teachers ten years later.
- Despite this, the IWPRB reported that the percentage of teachers leaving the profession each year has remained consistent at around 2.7% with little difference between rates in primary and secondary schools.

Numbers of teachers and pupils

- Since 2013, the number of primary teachers has decreased by 2.5% whereas for those in secondary schools the fall was more significant at 14.5%.

- In terms of pupils, the IWPRB reports that for Welsh secondary schools, the number of pupils is projected to increase by 20,500 between 2018 and 2024 before decreasing by just over 8,000 by 2029 and then increasing by approximately 1,500 by 2034.
- Numbers in primary schools in Wales are projected to fall by 11,200 between 2018 and 2025 before seeing a slight increase of 1,500 by 2028. Moreover, the review body stated that further growth by 2030 will bring numbers back to the current levels of about 265,000 pupils.
- Since 2005, the pattern of pupil-teacher ratios demonstrates that the trends in secondary and primary schools differed somewhat. In primary schools, the ratio started the period at 20.7 pupils per teacher before falling to 19.8 and ending at 22 in 2018 and 2019, its highest point.
- In contrast, the ratio in secondary schools was more stable over the period, never falling below 16 pupils per teacher and not exceeding 17.
- Both levels are among the highest in the European Union.

2. Pay for school teachers in Wales in context

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

In the past, a primary source of information was the School Teachers' Review Body (STRB) which, each year, was tasked with looking at all the evidence available before making its pay recommendations for England and Wales. Since 2019, however, pay decisions for Wales have been devolved and since March 2019 a new body – the Independent Welsh Pay Review Body (IWPRB) – was established and now makes recommendations for teachers' pay in Wales.

Its first report, published in June 2019, provides a comprehensive account of the current situation pulling together information from numerous sources, including NASUWT Cymru and the other teaching unions. Much of the evidence focused on pay and recruitment and retention but many other factors that affect the teaching profession such as leadership and local variations are also covered. Many of the findings of the June 2019 IWPRB report indicate a continuation of issues that have persisted for many years in Wales as outlined below.

2.1 Latest pay deal and current pay levels

In its remit letter from February 2019, the IWPRB was told to only make recommendations for amendments on pay due to the challenge of a tight timescale and to provide time for more detailed consideration of potentially fundamental changes in the longer-term. The Welsh Government also felt that this would provide a period of stability during the initial transition period.

As a result, the IWPRB made eight recommendations, all concerned with pay with the two main ones being that all statutory pay ranges and allowances should be increased by 2.4% and the statutory minimum of the teacher main pay range (M1) be increased by 5%. In response, the Minister for Education, Kirsty Williams, proposed a higher pay rise for most teachers, of 2.75% (in line with that recommended by the STRB for England), and accepted the IWPRB's recommendation to uplift the minimum pay point by 5%.

Prior to devolution, the Welsh Government gave a commitment to teachers that there would be 'no detriment' as a result of the change to a new review body and the 2.75% increase abides by this by matching the award made to teachers in England this year.

Pay evidence

Based on evidence it gathered, the IWPRB argued that starting salaries for new teachers in Wales lag behind median entry points for other graduate professions in the UK but, once in post, pay levels become more competitive. For instance, the IWPRB presented findings on graduate starting salaries from various sources illustrating that Welsh teaching starting amounts were lower than those for other graduate jobs.

In comparison to teachers in other regions, however, the picture appears less bleak. For example, the IWPRB reported that once in post, the median pay of full-time primary school teachers in Wales was ranked second only to teachers in London while in secondary schools, the position of Welsh teachers was fourth. Compared to non-teaching professions, Welsh secondary teachers' median gross earnings were positioned third out of seventeen while for primary and nursery teachers, the equivalent ranking was seventh although the comparison was based mainly on other public sector employers.

It should also be noted, however, that the choice of median pay rankings means that the figures for teachers tend to fare comparatively better than those based on averages, particularly when compared to figures for private sector jobs that made up some of the comparator group.

One of the benefits of the new devolved review body is that it provides information more specific to Wales as illustrated in Table 4. For example, it shows average gross salary levels (excluding allowances) for qualified and unqualified classroom teachers. The information was gathered from local authorities and illustrated that the average salary for all qualified school teachers in 2017 was £35,232 while the corresponding amount for unqualified school teachers was £21,634.

Table 4 Average gross salary (excluding allowances) for qualified and unqualified classroom teachers 2017

	2017-18 range	Nursery/ Primary	Middle	Secondary	Special	All
Qualified teachers	22,917-38,633	34,767	35,600	35,586	35,896	35,232
Unqualified teachers	16,626-26,295	20,584	21,041	21,360	24,567	21,634

Source: IWPRB

Many of the teaching unions providing evidence on pay pointed to the fact that teachers have suffered real-terms decreases in their earnings. NASUWT Cymru, for example, compared the salaries of teachers in 2018/19 with what they would have been if they had been increased in line with RPI since 2010. Based on this analysis, NASUWT Cymru showed that the 2018/19 values of teachers' pay on the main pay range is currently between £3,529 (14.9%) and £4,818 (13.8%) lower in 2018/19 than if teachers' salaries had increased in line with RPI since 2010.

In addition, others argued that simply looking at comparisons of median pay against other professions does not consider the age profile, intensity and time/experience involved in teaching.

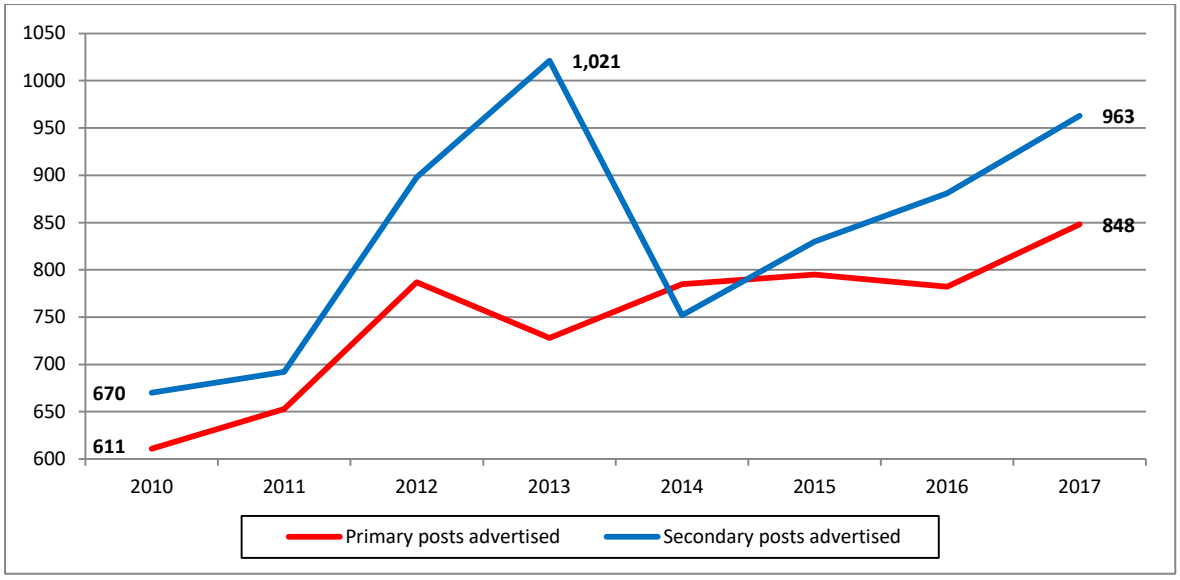
2.2 Recruitment and retention

Last year, the Welsh Government's submission to the School Teachers Review Body maintained that the recruitment climate in Wales had not changed significantly in the last three years but this year, under the new review body, there appears to have been a slight change in tone. For example, there was an acknowledgement by the new Welsh review body that the rise in pupil numbers over the next 10-15 years will require an increase in the demand for teachers. It also recognised that the rise in demand would not be uniform with more teachers likely to be needed in secondary schools where most of the increase in student numbers will occur.

The IWPRB also said that current trends associated with teacher vacancies and applications are a cause for concern, particularly with the looming rise in pupil numbers. For example, there has been a decline in the number of applications for posts when vacancies arise, while more vacancies are being advertised despite the drop in total teaching posts over the last decade.

Graphs 4 and 5 demonstrate the trends more clearly showing that the number of posts advertised in secondary schools rose overall from 670 in 2010 to 963 in 2017 while the corresponding figures in primary schools were 611 and 848 respectively.

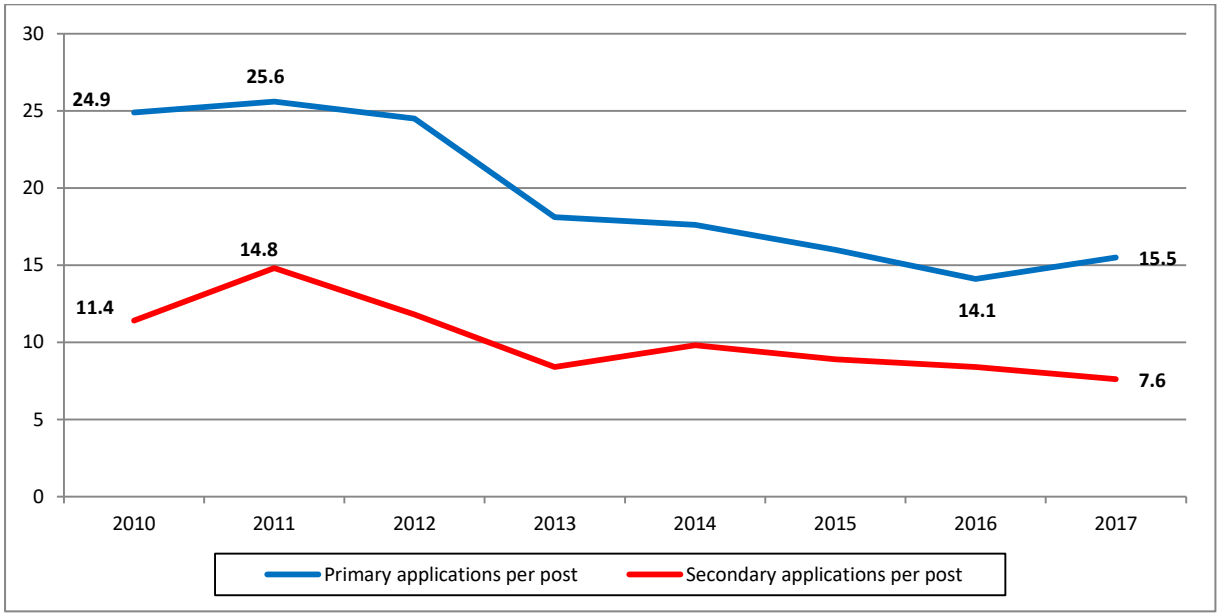
Graph 4 Number of posts advertised in primary and secondary schools 2010 to 2017



Source: PLASC 2017/Welsh Government

Graph 5 shows that the number of applications per post has followed the opposite trend. In secondary schools, the number of applications per post fell from a peak of 25.6 in 2011 down to 15.5 in 2017. Applications per post in primary schools also peaked in 2011 at 14.8 and finished the period at their lowest level of 7.6 in 2017. These trends have led the IWPRB to state that 'the current trends in teacher vacancies and applications per post give cause for concern, particularly given the demographic trends which are resulting in an increase in pupil numbers'.

Graph 5 Number of applications per post in primary and secondary schools 2010 to 2017



Source: PLASC 2017/Welsh Government

Within these trends, there is also significant variation, both by subject level and by geographical area with particular difficulty in filling positions in rural areas. In addition, applications for leadership posts have also dropped in the last few years with some consultees ascribing this to the erosion of differentials between teacher and leader scales among other factors. Actual figures on the percentage of vacant posts actually filled were provided by the Education Workforce Council in 2017. These showed that 91.8% of vacant posts were filled in primary education, compared to 91.3% in secondary schools, representing a declining rate over previous years.

In terms of retention, the IWPRB reported that the percentage of teachers leaving the profession each year has remained consistent at around 2.7% with little difference between rates in primary and secondary schools. The sub-groups with the largest proportions leaving are those in the first five years of working in the profession and those with over 31 years of service. By subject, the proportion of teachers leaving secondary schools was greatest in science, technology, engineering and maths subjects as well as modern foreign languages and Welsh.

In contrast, some of those consulted for the IWPRB believe retention in the teaching profession is deteriorating and is beginning to enter a 'crisis' period. Most cited the National Education Workforce Survey (EWC) from April 2017 that found that 33.6% of teachers stated that they wish to leave the profession in the next three years. Others pointed out that teacher supply issues in England could have implications for Wales while another striking statistic based on retention data from the EWC

showed that of the nearly 2,000 teachers that gained qualified status in 2005/06, 48.4% were no longer registered as school teachers ten years later.

In spite of this, the Welsh Government said there is little evidence for concern with regard to retention rates although it conceded there was anecdotal evidence of pockets of difficulties in certain secondary subjects, and some geographical locations as well as certain Welsh-medium provision. Perhaps in recognition of this, it said that in future there "will be reliance on primary sector re-entrants and an increasing reliance on secondary sector re-entrants to fill vacant positions".

When discussing why teachers are leaving the profession, the IWPRB concurred with those providing evidence that said the level of teachers' pay is a factor in retention, although it made clear it believed that this is not the sole factor. This was supported by a research study on the attractiveness of teaching and the retention of teachers for the Welsh Government in 2019 that found that pay and conditions featured halfway down the list of most important issues in respect of recruitment and retention.

Such lists may underplay the specific concerns of teachers regarding pay though, not because pay is considered unimportant, but because issues around workload and discipline are even greater sources of discontent. As the NASUWT members' survey found, pay remains one of the top three reasons for leaving the profession and of those that had seriously considered leaving the profession in the last 12 months, 71% said that pay is a "critical factor".

2.3 Current numbers of teachers

Table 5 below shows that the number of full-time equivalent teachers in Wales has been falling in every year since 2014 while, at the same time, the total number of pupils has been rising. More specifically, it shows that the number of full-time equivalent teachers fell by over 1,200 while the number of pupils rose by over 17,500.

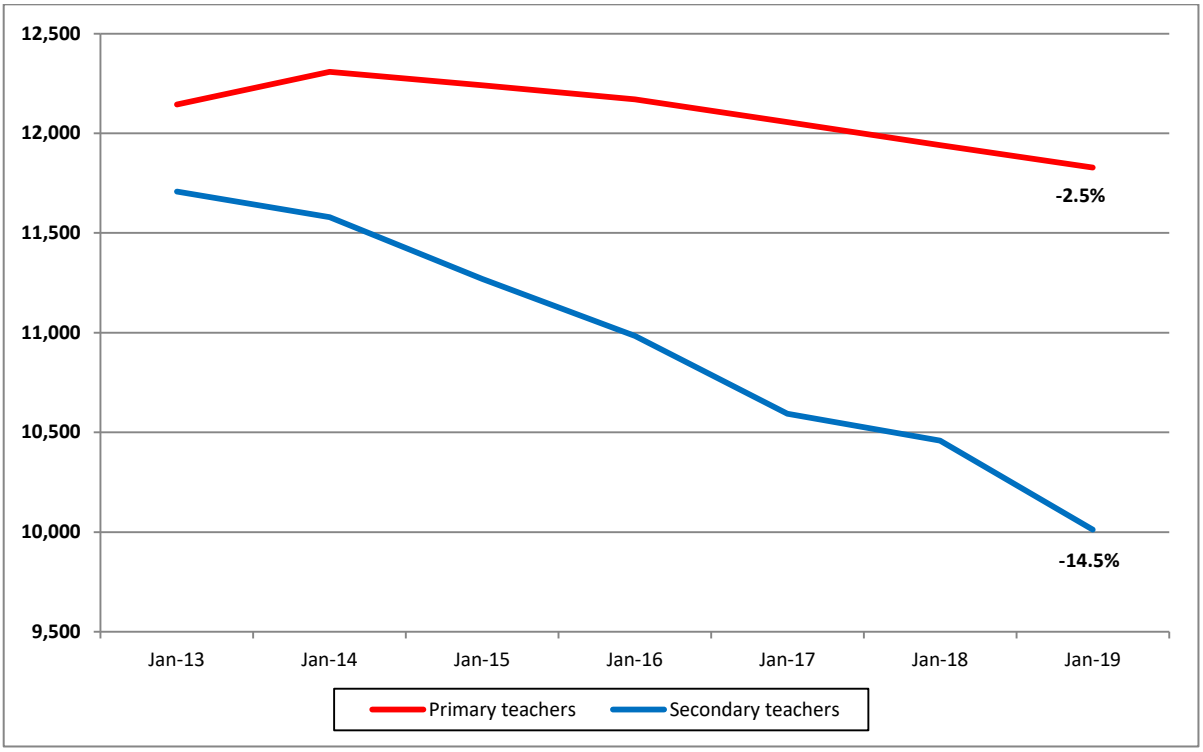
Table 5 Number of full-time equivalent teachers and pupils in Welsh local authority maintained schools 2012 to 2019

	January 2012	January 2013	January 2014	January 2015	January 2016	January 2017	January 2018	January 2019
Nursery teachers	63.6	58.3	52.8	43.4	42.3	33.5	38.9	30
Primary teachers	12,026	12,144	12,308	12,240	12,171	12,056	11,941	11,829
Primary pupils	262,144	264,186	269,421	273,400	276,954	276,940	277,095	274,799
Middle teachers	No data	222.7	221.7	290.0	345.2	532.7	713.7	981
Secondary teachers	11,868	11,707	11,579	11,269	10,984	10,594	10,459	10,012
Secondary pupils	198,015	191,279	186,427	182,408	178,669	174,812	172,218	170,277
Special teachers	643	638	661	668	694	694	719	741
Total teachers (FTE)	24,601	24,771	24,823	24,511	24,236	23,910	23,871	23,593
Total pupils (FTE)	451,790	450,833	450,711	465,704	466,555	466,508	467,112	468,398

Source: Welsh School Census Results, January 2019

Graph 6 shows the downward trends in teacher numbers in both primary and secondary schools more clearly. For primary teachers, the decrease of 2.5% was relatively small whereas for those in secondary schools the fall was more significant at 14.5%.

Graph 6 Full-time equivalent number of primary and secondary school teachers in Wales 2013 to 2019



Source: Welsh School Census Results, January 2019

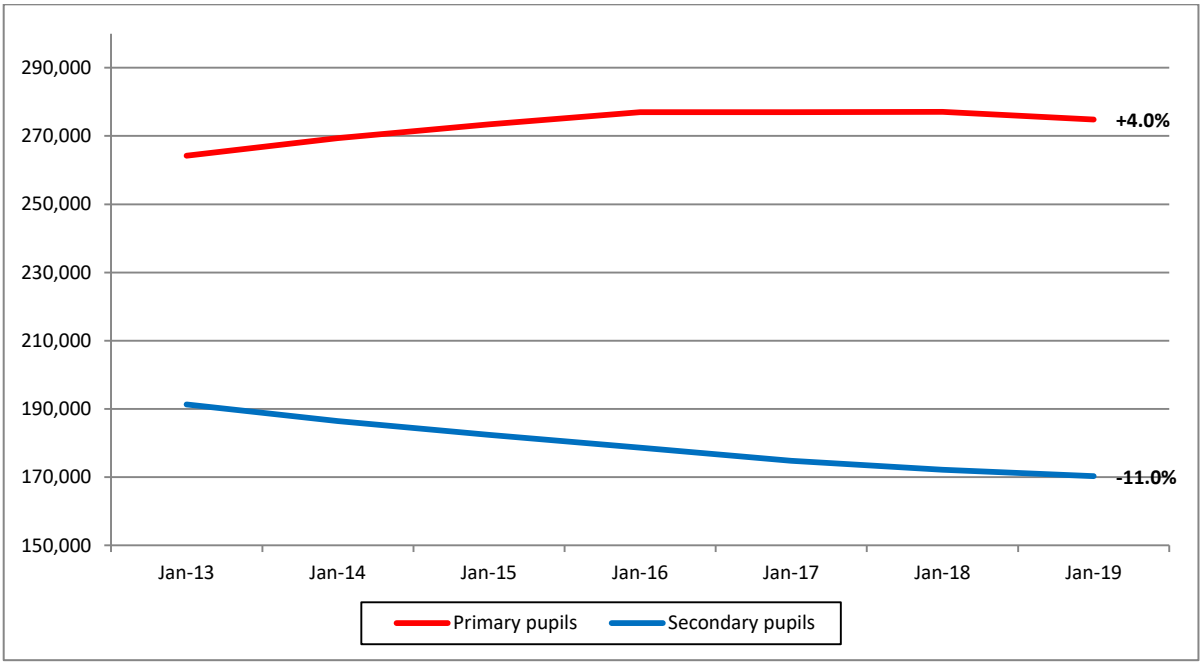
2.4 Pupil numbers

Graph 7 presents data from the Welsh School Census illustrating that from 2013 to 2016 the number of primary school pupils had been increasing before falling between 2017 and 2019. In contrast, the trend for secondary pupils has been continually downwards, decreasing by 11% over the period.

However, these trends look set to reverse in the future with the IWPRB reporting that pupil numbers in maintained primary schools in Wales are projected to fall by 11,200 between 2018 and 2025 before seeing a slight increase of 1,500 by 2028. Moreover, it stated that further growth by 2030 will bring numbers back to current levels of about 265,000 pupils.

For Welsh secondary schools, the number of pupils is projected to increase by 20,500 between 2018 and 2024 before decreasing by just over 8,000 by 2029 and then increasing by approximately 1,500 by 2034.

Graph 7 Number of primary and secondary school pupils in Wales 2013 and 2019

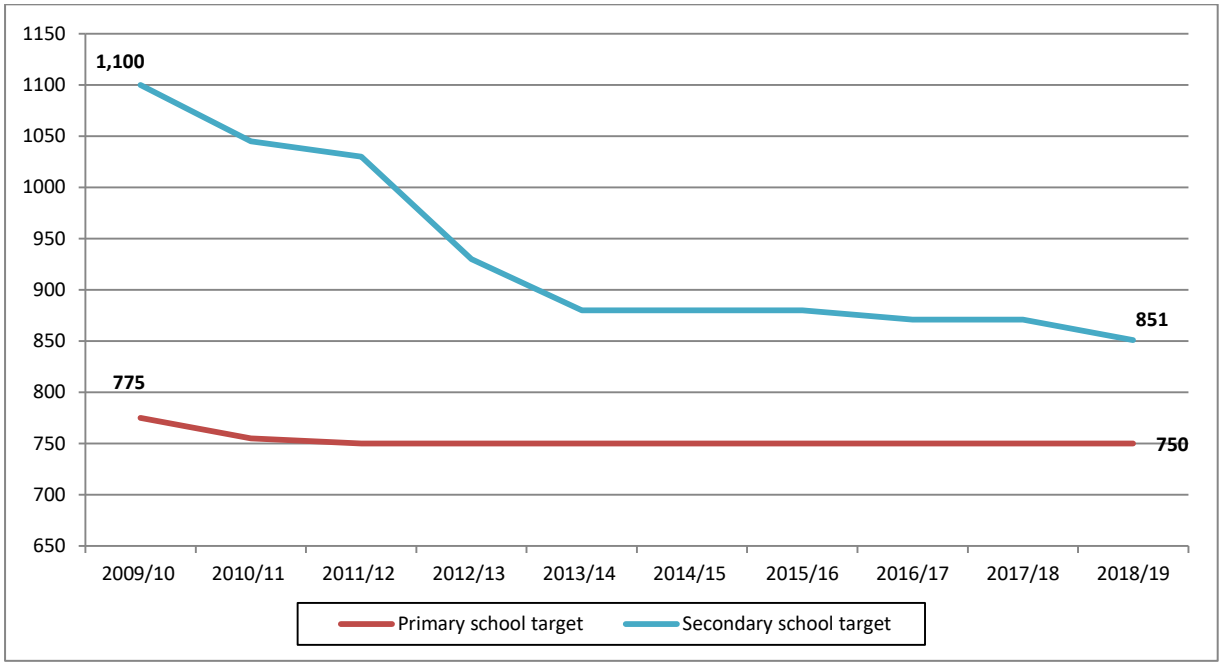


Source: Welsh School Census Results, January 2019

2.5. Teaching entrants

In Wales, qualified teaching status can be achieved via initial teacher education (ITE) or part-time and employment-based routes. Between 2009/10 and 2018/19 the targets for student numbers on ITE courses fell from 1,100 to 851 for secondary education and from just under 775 to 750 for primary schools over the same period. These falls were planned as the Welsh Government aimed to reduce the number of people taking ITE courses to better match the needs of schools in Wales between 2005/06 and 2013/14. Since 2013/14, the targets have remained relatively constant as the graph below demonstrates.

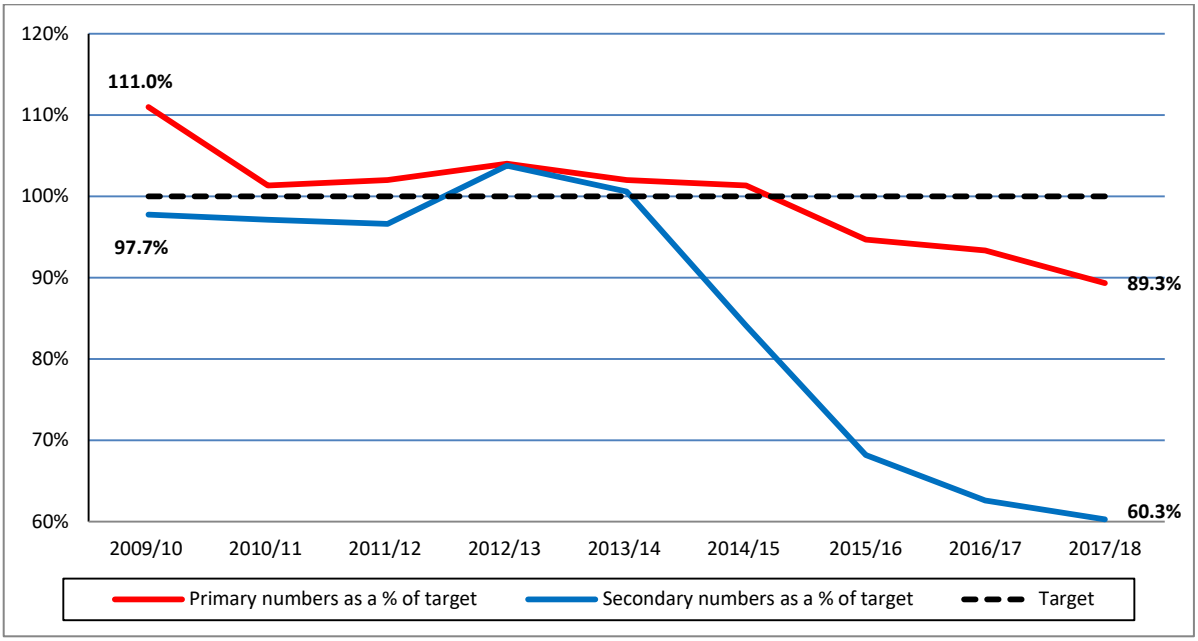
Graph 8 Initial teacher training intake targets in Wales 2009 to 2019



Source: Welsh Government Schools' Census results, 2019.

An examination of the actual enrolments illustrates that numbers entering primary school courses exceeded or mirrored the planned targets until around three years ago. Since then there have been growing shortfalls as shown in Graph 9. Numbers enrolling on secondary courses trailed the stated target for most years. The deficit varied over these periods but the largest shortfall was in the latest year for which figures are available – 2017/18 - when the secondary course target was missed by nearly 40% – a shortfall of over 400 students.

Graph 9 Proportion of initial teacher training intake targets in Wales met 2009 to 2017



Source: Welsh Government Schools' census results, 2019.

The IWPRB report also referred to these missed targets, commenting that there were particular problems in the STEM subjects, geography, modern foreign languages, English and Welsh. The report also mentioned that applications from England into Wales have reduced over the period 2012 to 2018 and are much lower than applications from Wales into England. At the same time, the proportion of students from Wales choosing to train as a teacher in England is increasing. Both of these factors may partially explain the missed targets in Wales.

While not available from the Welsh Government Schools' Census, the 2019/20 targets were provided by the IWPRB report in June 2019. With data sourced from UCAS, the IWPRB said that the current primary target has been reduced by 7.2% and the secondary one increased by 15.5%. Applications are ongoing but the IWPRB provided a table demonstrating how in 2019 the numbers of people seeking to become teachers in Wales fell in practically every month compared with 2018 as shown in table 6.

Table 6 Initial teacher education applications to Wales providers (rounded to the nearest 10)

	Primary				Secondary			
	2017	2018	2019	Change versus 2018 %	2017	2018	2019	Change versus 2018 %
January	1,080	880	730	-17.0	710	560	570	1.8
February	1,230	1,070	890	-16.8	900	730	680	-6.8
March	1,260	1,110	980	-11.7	1,010	830	780	-6.0
April	1,290	1,160	1,060	-8.6	1,090	930	880	-5.4
May	1,300	1,240	1,110	-10.5	1,180	1,030	990	-3.9

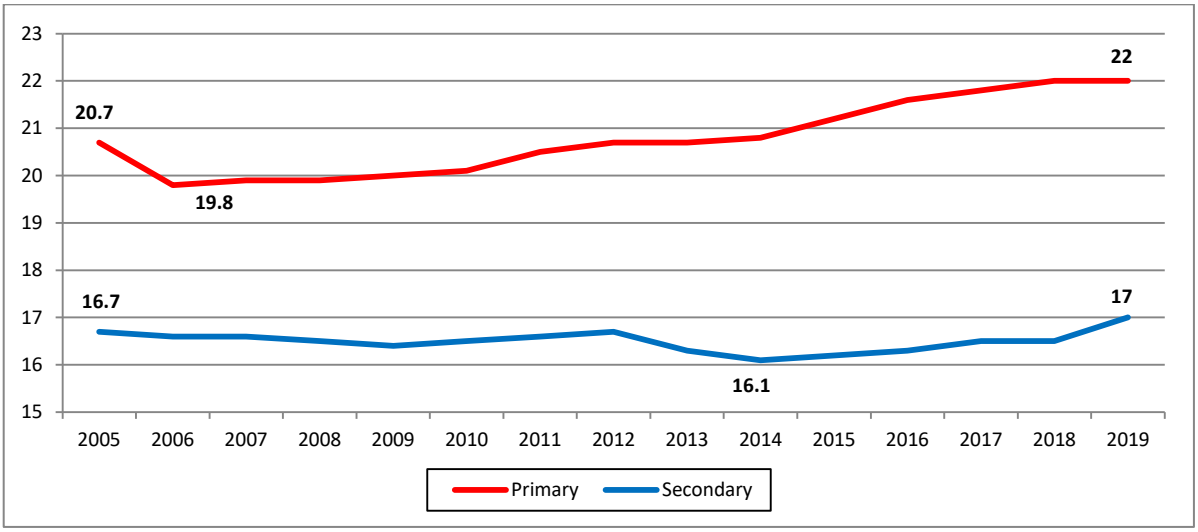
Source: UCAS/IWPRB

2.6. Data on the number of pupils per teacher

Looking at changes in the numbers of pupils and teachers in isolation is only of limited use because we need to understand the pattern of both in order to calculate a more important statistic – the pupil per teacher ratio. This ratio is important because it is widely considered a good indicator of educational quality. In broad terms, the lower the ratio the better the quality of education, and the higher the ratio, the worse the quality of education is likely to be.

Graph 10 presents the pattern of pupil-teacher ratios since 2005, demonstrating that the trends in secondary and primary schools differed somewhat. In primary schools, the ratio started the period at 20.7 pupils per teacher before falling to 19.8 and ending at 22 in 2018 and 2019, its highest point. In contrast, the ratio in secondary schools was more stable over the period, never falling below 16 pupils per teacher and not exceeding 17. Because the number of secondary pupils is set to rise significantly, maintaining the ratio at this level will require more teacher recruitment.

Graph 10 Pupil to teacher ratios in Welsh primary and secondary schools 2005 to 2019



Source: Welsh School Census Results, January 2019.

To place the current situation into a wider perspective, the latest EU figures for 2017 show that the United Kingdom 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 EU countries measured. For primary schools, the average across the EU was 14.7 in 2017 while the highest was 19.6 in France with the UK positioned fifth. By contrast, examining the Welsh figures in isolation shows the ratio is even worse standing at 22:1 in 2019 and 21.8:1 in 2017, the date the EU figures were compiled. Welsh secondary schools do not fare much better with a ratio of 17:1 placing them among the worst in the EU.

2.7. IWPRB pay recommendations

Because this is the first year that decisions on teachers working conditions have been devolved to the Welsh Government, the IWPRB's remit was limited to just pay and it made eight recommendations in total. The main two are mentioned above but the full list is shown here:

1. A recommendation that the statutory minimum of the MPR be increased by 5% and that the statutory maximum of the MPR be increased by 2.4%.
2. A recommendation that the statutory minimum and the statutory maximum of all other pay ranges (UPR, LGPR and unqualified teachers), and all allowances, be increased by 2.4%.
3. A recommendation that the current discretionary point 6a be removed, with those currently on 6a moving to the new statutory maximum of the MPR.
4. A recommendation that discretionary scale points M2-M5 on the MPR:

- be increased to remove the detrimental effect of the 1% differential relative to points M1 and M6 that was introduced through the implementation of the 2017 pay award; and
- be increased by a further 2.4%.
- 5) A recommendation that the discretionary scale points on all other pay ranges (UPR, LGPR and unqualified teachers) be increased by 2.4%.

5. A recommendation that revised pay scales incorporating recommendations R1-R5 (shown as Appendix B) be implemented by all local authorities and local authority maintained schools in Wales.
6. A recommendation that the pay scales at Appendix B should become statutory and published in the STPCD for Wales. Ideally this recommendation should be implemented for 2019 but, if not, there should be a commitment to do this for 2020 onwards.
7. A recommendation a fundamental review of teachers' and leaders' pay and conditions of service in Wales to support the education reform agenda. Our recommendations R1-R7 are the starting points in this process.

Looking further ahead

The recommendations above are in line with the IWPRB's remit and only cover pay but last year, an independent review commissioned by the Welsh Government titled *Teaching: a valued profession – the report of the independent review* set out some broader principles on the direction of travel that is likely to be followed. Because many of these recommendations are still to fully emerge, some of those that are likely to have longer-term implications for teachers are outlined once more below:

Pay

- The Welsh Government wants to see the development of a new, 'made-in-Wales pay and conditions framework, enshrining a national approach to professional learning and standards, and the freedom for teachers to use their professionalism and knowledge'.
- With immediate effect, the flexibility exercised by Governing Bodies over the salary levels of head teachers should cease. Where a positive flexibility has already been applied, the head teacher's current salary shall be pegged until such time as cost of living increases equalise their pay point with the salary they are receiving.
- There should be an adjustment in the starting point on the main pay scale for those entering teaching with relevant prior work experience in other occupations.

'Guarantees'

- Any change will result in no detriment in pay and conditions.
- Pay ranges should remain unchanged relative to the School Teachers' Pay and Conditions Document (2018) for the purposes of recruitment to the profession.

- Pay ranges for teachers and leadership for Wales should initially retain direct comparability with England as set out in the School Teachers' Pay and Conditions document.
- Pay portability – teachers moving between schools in Wales or who, after a career break, continue to work in Wales should be paid according to their last pay point when working.
- The panel recommends that the new pay progression arrangements are implemented from September 2019 and that the distinction between the Main and Upper Pay Ranges be discontinued from that point and the concept of the threshold removed.

Pay review process

- The new framework will be based on a reasoned comparison, particularly in relation to other employment sectors and England.
- Processes should be put in place to continually monitor teachers' pay in Wales relative to that for other graduate occupations as part of future pay setting arrangements.
- Detailed consideration should be given to the feasibility of establishing an independent board to determine the initial head teacher salary level for each individual school that seeks to appoint a head teacher to a vacancy.

3. School teachers' pay awards compared with the wider economy

Prior to devolvement, Welsh teachers were subject to the same pay awards as their English colleagues. Because of this, an examination of how the historic increases for school teachers in Wales have compared with increases across the economy as a whole since 2007 includes both countries with the exception of the latest year, ie the one in which devolvement occurred.

What this examination shows is that the teaching profession in Wales has tended to receive lower pay awards than those for other groups, apart from 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 1% between 2013 and 2014, while in 2015, the headline increase was again 1% with a 2% increase to the maximum of the main 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 the last two years the uplifts to the upper pay range have been lower than the increases for the main range. For instance, pay points on the upper pay range was 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. As mentioned earlier, the first year of devolvement saw a 2.75% uplift to the main and upper pay ranges and a 5% increase in the starting rate for newly-qualified teachers.

3.1. Measuring pay awards

General salary increases for school teachers approved by government ministers from 2007 onwards are detailed in Table 7. 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, with the introduction of appraisal-related progression most schools in Wales continue to apply the awarded increase to all pay points (in spite of an attempt to replace these with ranges) 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' annual pay review. The percentage figures used in the table measure the headline increases in basic pay levels, excluding bonuses or lump sum payments. For settlements and awards where the percentage rise varies for different employees (for example, increases based on individual performance), the figure used is the average increase where this is known, the increase received by the largest number of employees, or the pay bill increase. The cost of other improvements, such as any increase in holiday entitlement or in the value of allowances, for example, is excluded.

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

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

Table 7 also presents the difference between teachers' pay increases and those elsewhere and shows the only period in which teachers enjoyed higher annualised awards, apart from most recently, was between 2009 and 2010 during the economic downturn. At this time, a three-year deal starting in 2008 was concluded before the burgeoning financial crisis deteriorated significantly, which protected teachers' pay in relative terms.

From 2015 onwards, formal comparisons for teachers are more 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, 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 which trailed the all-economy median which stood at 1.78%. In 2017, the all-economy figure was 2% and that year the minimum and maximum of the main teachers' 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 Wales kept pace with pay 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%, ahead of the increases for the majority of teachers in Wales.

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

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

Table 7 School teachers' pay awards compared with those in the wider economy, 2007 to 2019

	School teachers England & Wales		Pay settlements – whole economy (WE)			Variance between teachers' rise and WE median
	% general award		Lower quartile %	Median %	Upper quartile %	Percentage point difference
2007	Salary increase of 2.5%	Q3	3	3.5	4.1	-1.0
2008	General salary increase of 2.45%	Q3	3	3.7	4	-1.25
2009	General salary increase of 2.3%	Q3	0	1.8	2.5	0.5
2010	General salary increase of 2.3%	Q3	0.3	2	2.4	0.3
2011	No general salary increase	Q3	0	2	3	-2.0
2012	No general salary increase	Q3	1	2	3	-2.0
2013	General salary increase of 1%	Q3	1	2	2.5	-1.0
2014	1% increase in range minima, maxima and reference points within ranges	Q3	2	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 the main and upper pay ranges and a 5% increase in the starting rate for newly-qualified teachers	Q3	2.0	2.5	3.0	0.25

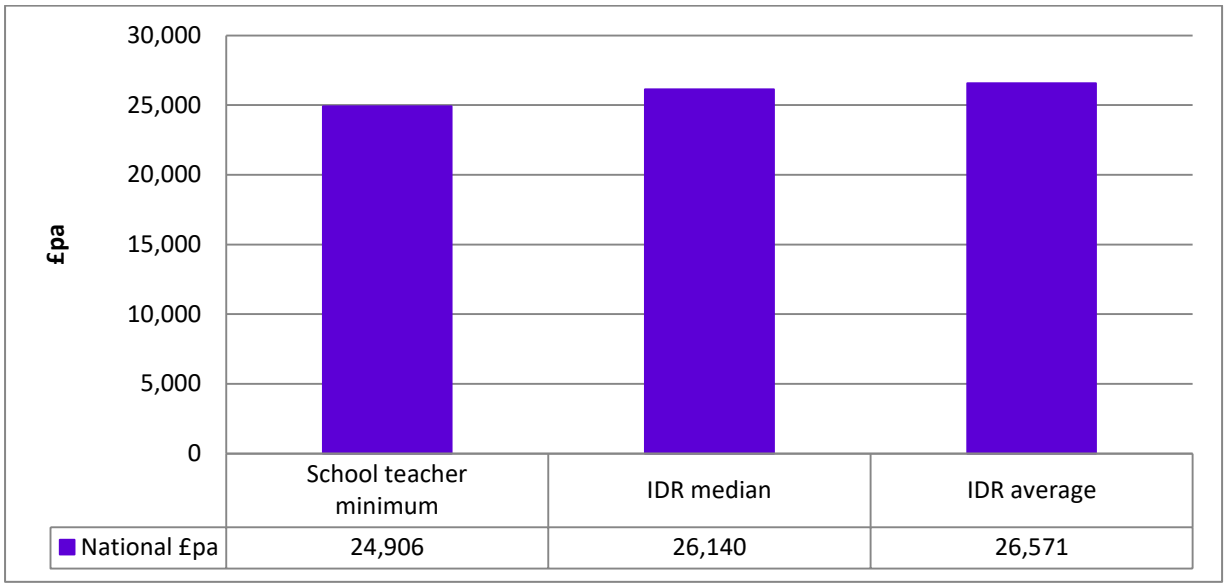
**Provisional and subject to revision.*
Note: we have analysed whole-economy pay awards for the third quarter of the year (Q3), to align with the teachers' pay review in September. Source: IDR

4. The graduate labour market

The data in Graph 11 shows that the IDR median graduate starting salary in Wales is £26,140, 5% higher than the current national minimum point on the school teachers' main pay range. The

average graduate starting salary is slightly higher than the median at £26,571, ahead of the current minimum salary for teachers by 6.7%. It should be noted that there has been a significant narrowing of the gap between the minimum starting salary for teachers in Wales and the median and average graduate starting salaries as reported by IDR. Our 2018 report for the NASUWT reported a lead for graduates of 20.2% on the median and 16.6% on the average graduate salaries compared to the teachers' minimum in Wales. This is a result of both a variable and smaller sample size in the IDR graduate survey, combined with a relatively high percentage uplift to the minimum teachers' salary in Wales (an uplift of 5%). This 5% uplift compares to a 2.75% uplift to the minimum salary for teachers in England.[1]

Graph 11 Starting salaries for graduates compared with teachers' minimum 2019



Source: IDR.

As well as data on current graduate starting salaries, the IDR survey asked recruiters about the basic salaries for graduates on completion of training programmes. The average graduate salary on completion of training at organisations in Wales is £33,166 and schemes typically last for two years. Therefore, if we compare the average graduate completion salary to the salary for teachers on M3 of the main pay range in Wales, which is £28,413, this means the average completion salary for graduates is 16.7% ahead of that for teachers on point M3 of the main range.

Pay after graduate training programmes

[1] Though it may be worth noting that the IDR research on graduates' pay was conducted during the summer, ahead of the 5% uplift to the minimum of the main pay scales.

As well as current salaries for graduates, the IDR survey captures information on potential salaries for graduates after completion of their training. The average graduate salary paid after 3 years of completion of the graduate training programme is £37,379. If we compare the average graduate completion salary to the salary for teachers on M5 of the main pay range in Wales (equivalent to an employee who completed their graduate scheme three years' previously), the salary is £33,010. This means the average salary for graduates after three years of completing a graduate programme is 13.2% ahead of teachers starting on point M5 of the main range.

The IWPRB report also includes data on graduate salaries, and how these compare with teachers' pay in Wales. The table below, which is taken from the report, shows that the starting salary for teachers in 2017 was 9% lower than the median starting salary for professional occupations (DHLE (SOC)), and 9% higher than the starting salaries for all occupations in Wales following graduation (DHLE Wales).

Table 8 Graduate salaries in comparison with teachers' pay in Wales

	2013 Graduates £	2014 Graduates £	2015 Graduates £	2016 Graduates £	2017 Graduates £	2018 Graduates £
Institute of Student Employers	26,500	27,000	27,000	27,500	28,000	28,500
High Fliers	29,000	29,500	30,000	30,000	30,000	30,000
DLHE (SOC)	25,000	25,000	25,000	25,000	n/a	n/a
DLHE (UK)	20,500	21,000	21,000	21,500	22,000	n/a
DLHE Wales	20,000	20,000	20,000	20,000	21,000	n/a
Teachers*	21,804	22,023	22,244	22,467	22,917	23,720

Note: DLHE = Destination of Leavers in Higher Education); *Statutory teachers' pay minimum

The IWPRB regards the graduate labour market as one of the factors influencing teachers' pay and in line with this it concludes: 'We believe that teachers make a highly valued contribution to society and should be rewarded accordingly. This is even more important in a time of competition for graduates.'

5. ASHE earnings analysis

In this chapter we draw on data from the Annual Survey of Hours and Earnings (ASHE), produced by the Office for National Statistics (ONS). More specifically, the chapter uses the separate breakdown for Wales, making it possible to examine how the earnings of school teachers have changed over time compared to a basket of other comparator graduate occupations in the same country.

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 midpoint and a phase characterised by a 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 represents the first year following the end of the lengthy period of often severe pay restraint in the public sector.

When considering the findings some caveats need to be borne in mind. Firstly, the samples for each year are not based on matched data. In addition, because Wales has a significantly smaller population than the United Kingdom as a whole, some of the sample sizes are limited. In addition, in some years there are gaps in the information where the ONS deemed the data collected as not reliable, statistically-speaking.

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 table 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 table 9 illustrates, the reliability of the occupational pay data for Wales is mixed. It illustrates that the most precise data relates to the teaching groups along with engineering professionals, followed by chartered surveyors, health and legal professionals and management consultants.

In contrast, figures for physical and chemical scientists were deemed insufficient to provide reliable pay estimates while data for many of the other groups is only 'acceptable'. Despite these weaknesses, where the ONS has deemed the reliability of the data to be acceptable or better we have carried out an analysis although the level of precision of the data needs to be borne in mind when interpreting the results.

Table 9 Assessment of reliability of Welsh earnings data 2019

Job group	2019 average basic earnings figure £pm	Level of precision	2019 average gross earnings figure £pm	Level of precision
Secondary education teaching professionals	728.1	Precise	729.6	Precise
Primary and nursery education teaching professionals	704.8	Precise	713.3	Precise
Chemical scientists	No data	Unreliable or no data	No data	Unreliable or no data
Biological scientists and biochemists	768.7	Acceptable	769.8	Acceptable
Physical scientists	No data	Unreliable or no data	No data	Unreliable or no data
Engineering professionals	758.2	Precise	801.4	Precise
Health professionals	1,064.9	Reasonably precise	1,124.5	Reasonably precise
Pharmacists	838.1	Acceptable	847.5	Acceptable
Legal professionals	851.5	Reasonably precise	866.2	Reasonably precise
Chartered and certified accountants	729.1	Acceptable	729.1	Acceptable
Management consultants and business analysts	735.8	Reasonably precise	736.5	Reasonably precise
Chartered surveyors	574.4	Reasonably precise	598.5	Precise

Source: ONS

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/country, which permits the ONS to produce figures for the whole of Wales.

For the purposes of our analysis, we have used weekly earnings figures from ASHE for 10 non-teaching graduate occupations as listed in the table below, on the basis that these occupations (all from Standard Occupational Classification major group '2') are reasonable comparators with school teaching on the basis that they are all 'professional' roles, with employers competing for potential staff from a single pool of graduates. These occupations have been identified and used as suitable earnings comparators in previous research reports for the NASUWT. It should be noted that ASHE does not provide sample counts so the 'number of jobs' column below is actually an estimate based on information taken from another ONS study – the Labour Force Survey – and so 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 earnings on which the indices are based for all the occupations covered and all the years under review.

Table 10 Comparator graduate occupations in ASHE and SOC codes

ASHE main occupational groups	Occupational groups used in analysis	SOC codes	No. of jobs in Wales*
Science, research, engineering and technology professionals	Chemical scientists	2111	Disclosive**
	Biological scientists and biochemists	2112	Unreliable estimate
	Physical scientists	2113	Disclosive**
Engineering professionals	Engineering professionals	212	13,000
Health professionals	Health professionals	221	14,000
	Pharmacists	2213	Unreliable estimate
Business, media and public service professionals	Legal professionals	241	Unreliable estimate
Business, research and administrative professionals	Chartered and certified accountants	2421	Unreliable estimate
	Management consultants and business analysts	2423	6,000
Architects, town planners and surveying professionals	Chartered surveyors	2434	Unreliable estimate
Teaching and educational professionals	A. Secondary education teaching professionals	2314	17,000
	B. Primary and nursery education teaching professionals	2315	19,000

**Full-time jobs. Estimates in 2019. ** 'Disclosive' means that the sample size is so small that an individual could be identified if the data was published. Therefore, the ONS exclude the results from its data.*
Source: ASHE

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

The following section of the report shows how median and average earnings differentials between the two teaching groups and a selection of comparator graduate occupations vary 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 full 13-year period.

The section begins with an examination of the overall findings for all the jobs covered followed by a calculation of the combined median and average differentials between earnings for the 10

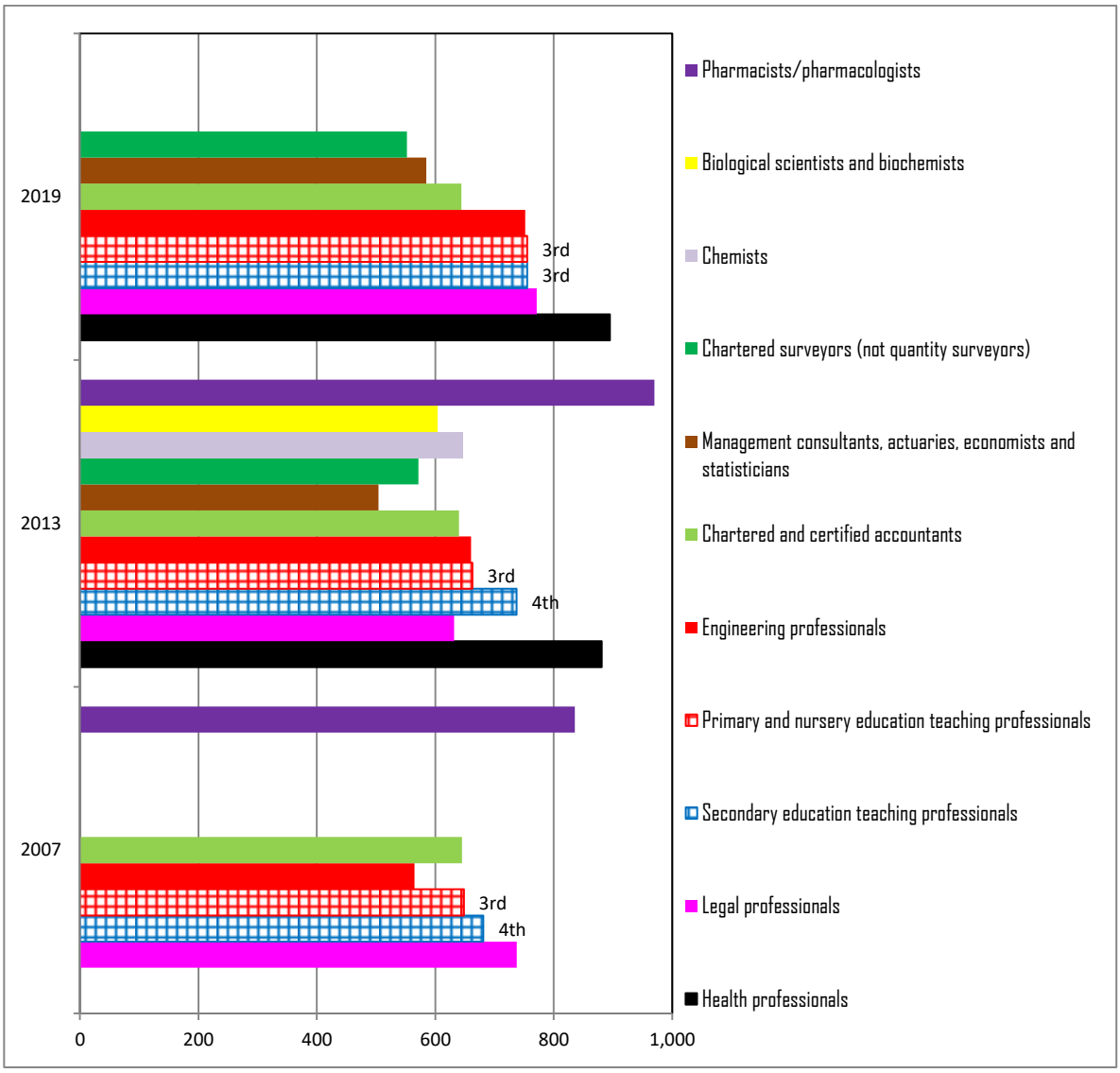
comparator graduate occupations (where data is available) and those for the two teaching groups. We then present a more detailed analysis of indexed median and average basic earnings for each of the occupational groups, relative to those for secondary and primary education school teachers in each of the same three years.

Teachers' pay is predominantly made up of basic salary but for other professions 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 a look at the median and average gross earnings of the selected graduate occupations compared to the corresponding figures for teachers.

Graphs 12 and 13 provide details of the median and average rankings of median and average basic earnings for all the professions we examined in Wales, including both teaching groups, across the three years in focus. The graphs illustrate that in most years secondary teachers in Wales are generally slightly higher-paid than those who teach younger children. The two graph bars for the teaching professions are shaded with a crossed pattern and labelled with their ranking position so they stand out from the other non-teaching occupations.

Not all of the chosen professions are shown in each year because the data was not available in some periods due to sample size limitations. Moreover, even where data is disclosed, some sample sizes are relatively small and, as a result, the figures for most non-teaching professions are not as precise as those relating to the two teaching professions.

Graph 12 Comparison of median basic earnings of all comparator graduate professions in Wales including school teachers: 2007, 2013 and 2019



Source: ASHE

**Based on available data for four non-teaching professions in 2007 and nine in 2013 and six in 2019.*

Bearing these factors in mind, the graph illustrates that in terms of median basic earnings, secondary and primary teaching professions were positioned third and fourth respectively in 2007 and 2013 while they were both positioned third in the latest period.

Dominating the earnings table in the latest year were health professionals while pharmacists, a group with an insufficient sample size to have a figure in 2019, were also relatively well-paid in the other two years. Similarly, median basic earnings data was unavailable for health professionals in 2007, illustrating how sample sizes for some groups are inconsistent across the three years. This variability in sample sizes together with changes in job definitions across the period means that the

rankings can change across the period. Therefore, comparisons based on un-matched samples across the different years need to be made with a certain measure of caution.

Table 11 Ranking of median basic earnings levels of selected graduate professions in Wales 2007, 2013 and 2019

Group	2007 rank	2013 rank	2019 rank
Secondary education teachers	3	3	3
Primary and nursery education teachers	4	4	3

Source: ASHE

**Based on available data for four non-teaching professions in 2007 and nine in 2013 and six in 2019.*

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 in Wales where concerns have been expressed about pay at more experienced levels.

By contrast, averages take greater account of the whole distribution of earnings, including both the highest and the lowest figures. Therefore, to gain a fuller picture, Graph 13 provides comparative details based on average basic earnings for the professional groups examined. It is clear that the overall distribution in Graph 13 is broader than that for median earnings in all three years. For example, whereas Graph 12 showed that the highest median salary level for a non-teaching job is around 18.5% greater than the figure for primary and nursery teachers, the highest average figure shown in Graph 13 is over 50% greater.

Another consequence of using different statistics is that the ranking of both teaching groups falls somewhat when measured by the average figures as opposed to medians. For example, secondary school teachers fall from third to eighth place by switching from medians to averages in 2019, while the pay of primary teachers fell from third to ninth.

The drop in rankings is explained by the fact that while the average figures for all the comparator groups have increased compared to the corresponding medians, the average levels for both teaching groups in Wales were actually lower than the corresponding median levels. For example, non-teaching profession average amounts were between 0.8% and 25.8% higher than the equivalent medians whereas the secondary average basic pay figure was £728.10 per week which was 3.6%

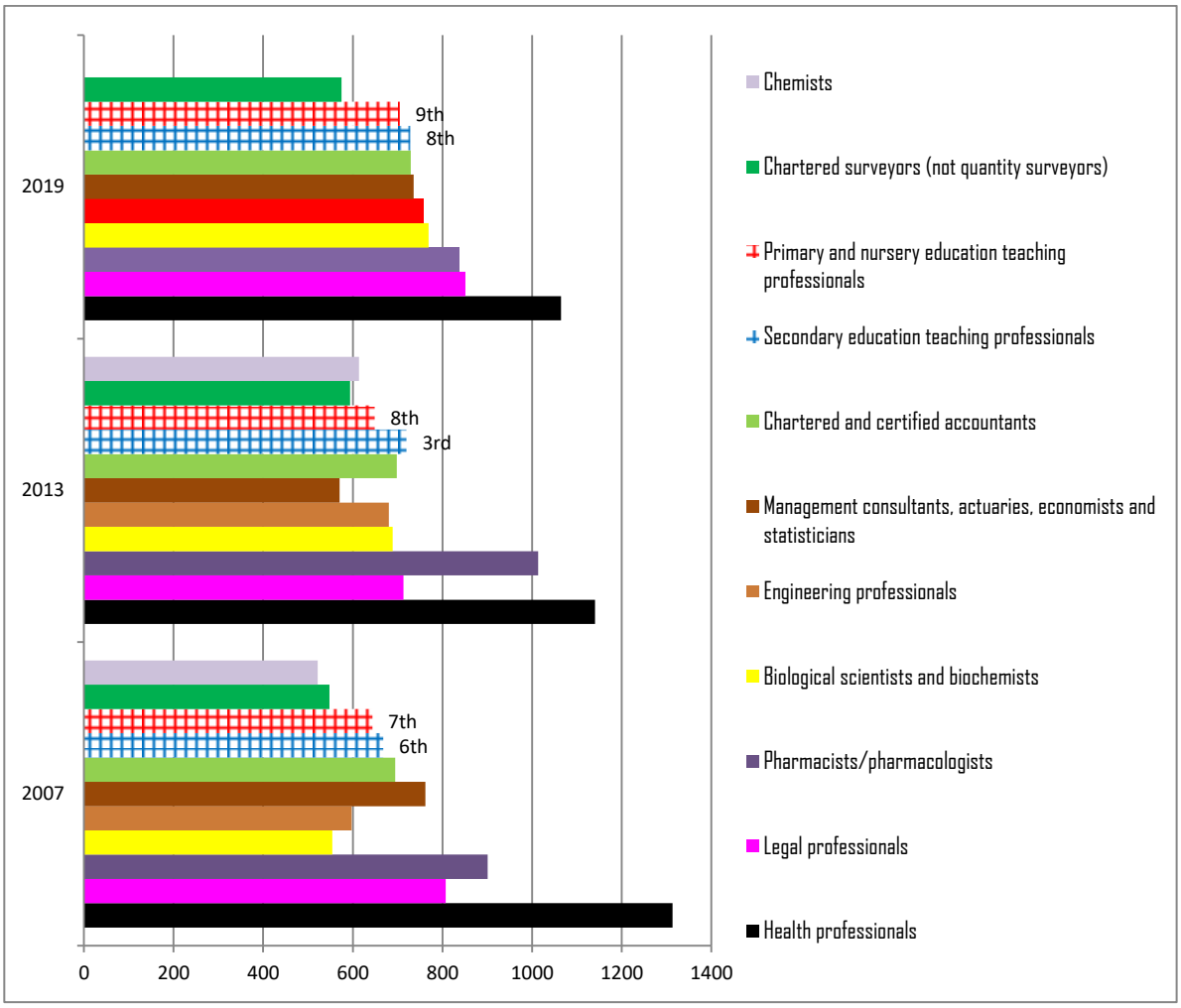
lower than the median of £755.20. Similarly, the primary and nursery teacher average of £704.80 trailed the median that also stood at £755.20 by 6.7%.

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

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

In contrast, the fact that median pay levels are higher than average amounts for teachers in Wales means that the opposite is true. In other words, there is either a higher proportion of lower-paid staff and/or those in the higher-paying positions are on salaries that are only marginally greater and therefore causing the distribution to be skewed towards the lower end.

Graph 13 Comparison of average basic earnings of all comparator graduate professions including school teachers in Wales: 2007, 2013 and 2019



Source: ASHE

**Based on available data for nine non-teaching professions in 2007 and 2013 and eight in 2019.*

As a result, as the tables and graphs above demonstrate, when measured by median basic earnings, teachers in Wales are positioned just above the midpoint of the rankings when compared to amounts earned by other graduate professions. In contrast, when ranked by average basic earnings the two teaching groups are placed towards the bottom of the rankings with secondary teachers placed eighth and their primary counterparts in ninth as shown in table 12.

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

Group	2007 rank	2013 rank	2019 rank
Secondary education teachers	6	3	8
Primary and nursery education teachers	7	8	9

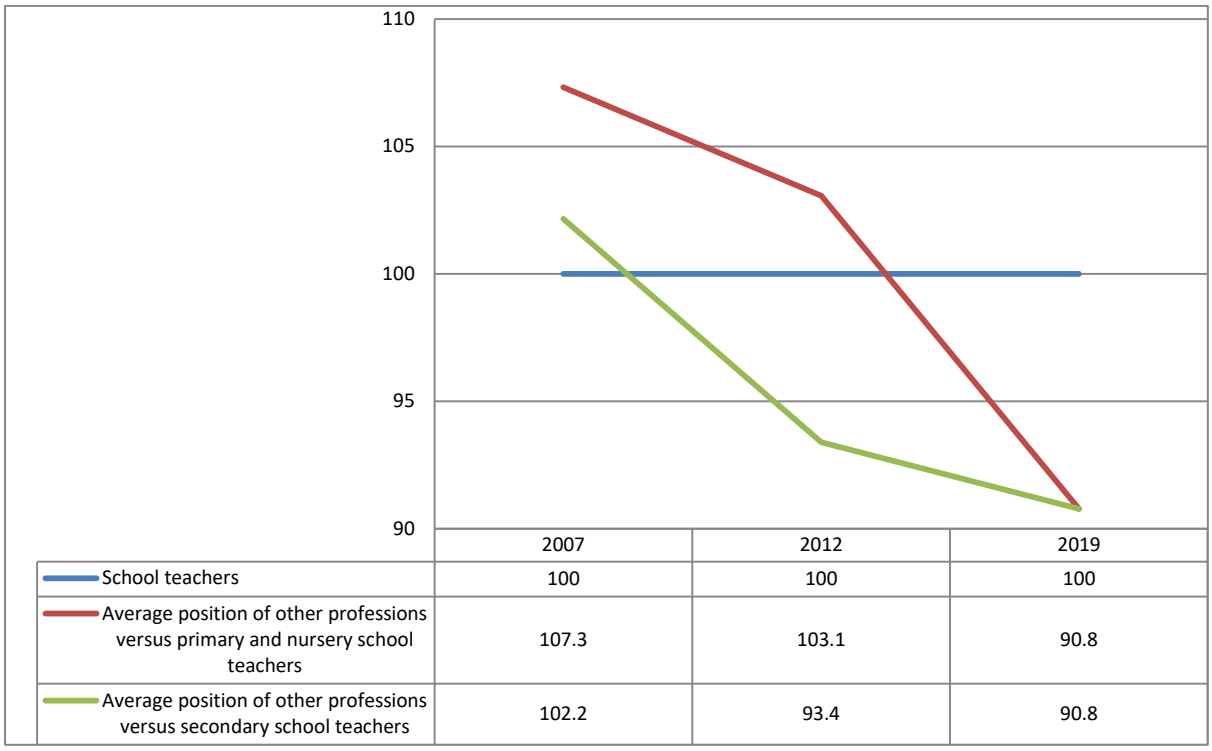
Source: ASHE

**Based on available data available for nine non-teaching professions in 2007 and 2013 and eight in 2019.*

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

Another way of comparing teaching and non-teaching pay is to combine the earnings data for the non-teaching professions in Wales into one unweighted aggregate salary figure. This provides another indication of how differentials have varied over the period. Using median basic earnings for teachers in Wales in 2007 as the base for each year (=100), Graph 14 shows the relative position of the combined median basic earnings for the selected graduate professions.

Graph 14 Indexed median basic earnings of all-comparator graduate professions relative to school teachers in Wales: 2007, 2013 and 2019



	2007	2012	2019
School teachers	100	100	100
Average position of other professions versus primary and nursery school teachers	107.3	103.1	90.8
Average position of other professions versus secondary school teachers	102.2	93.4	90.8

Source: ASHE

**Based on available data for four non-teaching professions in 2007 and eight in 2013 and five in 2019.*

It shows that when all the earnings figures are combined, both teaching groups in Wales started the period relatively lower-paid than the combined figure whereas they finished the period with median basic earnings that were higher.

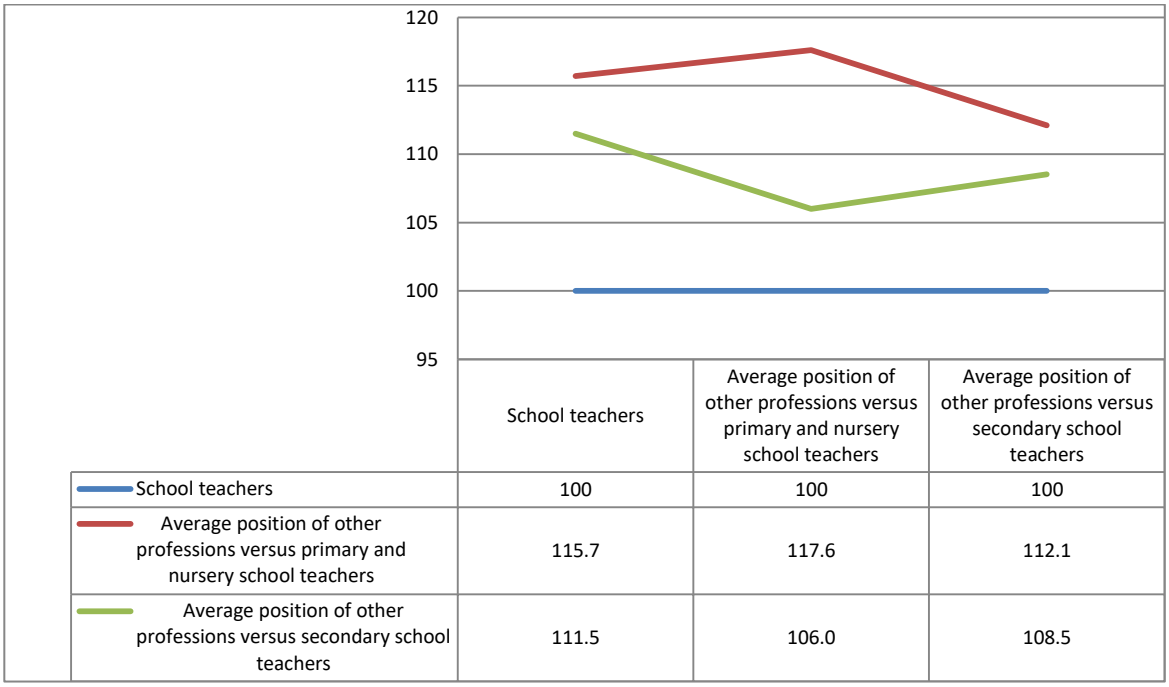
The graph shows that earnings for Welsh primary and nursery teachers started the period 7.3% below the combined figure and 3.1% lower in 2013. In 2019, the picture changed with the teaching group pulling ahead. A slightly different pattern was exhibited by secondary school teachers' median basic earnings, which started the period 2.2% behind the non-teaching professional combined amount before exceeding it by around 7% in 2013 and around 10% in 2019.

One caveat to the findings here is that the data for non-teaching groups in Wales is inconsistent. For example, the 2007 calculation covers just four of the non-teaching professions whereas in 2013 it included eight and in the final year just five. In addition, while the data for both teaching groups displayed a clear upward trend across the three years as might be expected with relatively large samples, the pattern of non-teaching median salaries was more erratic. Taking legal professionals as

an example, the 2007 median basic earnings figure for this group stood at £737.50 per week before falling to £631.90 in 2013 but then rising substantially to £771.5 in 2019.

Large shifts in median figures can occur when sample sizes are small and this could be a factor behind these fluctuations. However, they could also be due to changes in the composition of samples in different years. Another point worth noting when interpreting the results is that the 2019 analysis does not include the pharmacist professional group which tends to be one of the higher-paying non-teaching professions but was excluded for an insufficient sample size.

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



	School teachers	Average position of other professions versus primary and nursery school teachers	Average position of other professions versus secondary school teachers
School teachers	100	100	100
Average position of other professions versus primary and nursery school teachers	115.7	117.6	112.1
Average position of other professions versus secondary school teachers	111.5	106.0	108.5

Source: ASHE

**Based on available data for nine non-teaching professions in 2007 and 2013 and eight in 2019.*

An examination of the average basic earnings data from ASHE, as shown in Graph 15, illustrates a very different pattern. Throughout the period between 2007 and 2019, teachers' average basic earnings trailed those of the aggregated non-teaching group. In the case of secondary education teachers the differential was 8.5% in 2019 while the corresponding gap for primary teachers was greater at 12.1%. The average analysis suffers from similar weaknesses to that based on medians due to sample changes but allows greater scope for comparison because significantly more professions show data for all the three years examined.

5.4. Occupational findings on basic earnings in detail

To complement the various comparisons shown above, using weekly earnings figures for each of the 10 non-teaching professions, where data was available, we have indexed all the amounts against the two Welsh teaching groups. We have carried out four comparisons for each of the 10 non-teaching professions where possible: median and average basic earnings versus those for each of secondary and primary teachers.

Unfortunately, this year the data for some of the occupations covered in Wales were not disclosed by the ONS due to insufficient sample sizes. This was particularly true for the median figures, which explains why some of the tables have no data for some years.

a) Science, Research, Engineering and Technology professionals

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

Table 13 summarises the basic earnings figures for occupations within the science and research professions compared to earnings for secondary education teachers in Wales. The science occupations have some of the smallest indicative sample sizes in our analysis and the only data produced was for biological and chemical scientists in 2013 when both groups' median basic earnings trailed those of secondary education teachers.

Table 13 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	681.1	100.0	737.1	100.0	755.2	100.0
Chemical scientists		No data	647.5	87.8		No data
Biological scientists and biochemists		No data	604.1	82.0		No data
Physical scientists		No data		No data		No data

Table 14 compares the science occupations' median basic earnings with those of primary and nursery school teachers, illustrating that the biological and chemical scientists' median basic earnings were also behind that for this teaching group in 2013.

Table 14 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	648.3	100.0	662.7	100.0	755.2	100.0
Chemical scientists		No data	647.5	97.7		No data
Biological scientists and biochemists		No data	604.1	91.2		No data
Physical scientists		No data		No data		No data

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

Data was not so limited for the science groups when it came to average basic earnings figures with information available for biological and chemical scientists in most years. For both science professions, average basic earnings trailed those of secondary school teachers in 2007 and 2013 while the biological scientist figure moved ahead in 2019. Unfortunately, the sample size for chemists was insufficient to produce a reliable figure in the latest year.

Table 15 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	667.6	100.0	719.3	100.0	728.1	100.0
Chemical scientists	521.7	78.1	614.1	85.4		No data
Biological scientists and biochemists	554.1	83.0	688.9	95.8	768.7	105.6
Physical scientists		No data		No data		No data

Table 16 presents the comparison with the primary and nursery education group, showing that chemical scientists' average basic earnings trailed those of primary teachers in the two years where data was available – 2007 and 2013. In contrast, biologists started the period with average basic earnings well behind those of primary and nursery teachers before pulling ahead in 2013 and 2019.

Table 16 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	643.4	100.0	648.3	100.0	704.8	100.0
Chemical scientists	521.7	81.1	614.1	94.7		No data
Biological scientists and biochemists	554.1	86.1	688.9	106.3	768.7	109.1
Physical scientists		No data		No data		No data

b) Engineering professionals

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

Table 17 provides details of median basic earnings for engineering professionals, demonstrating that their pay started the period around 13% behind those of secondary education teachers before rising throughout the period to 2019 to almost parity. In 2013, for instance, the differential narrowed to 10.4% before ending the period with a 0.4% gap in 2019.

Table 17 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	681.1	100.0	737.1	100.0	755.2	100.0
Engineering professionals	564.8	87.1	660.4	89.6	752.0	99.6

The comparison with primary and nursery education teachers portrays a slightly different picture, with engineering professionals' median basic earnings almost closing the gap earlier than for the comparison with secondary teachers. Engineering earnings start some way behind those for primary teachers in 2007 before hovering around the same level as the teaching group in both 2013 and 2019.

Table 18 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	648.3	100.0	662.7	100.0	755.2	100.0
Engineering professionals	564.8	87.1	660.4	99.7	752.0	99.6

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

An analysis of average basic earnings demonstrates a similar pattern to the median pay findings although the differentials were narrower and engineers finished the period with marginally higher average basic earnings compared to both teaching groups. Average earnings for engineers were 10.5% lower than the equivalent figure for secondary teachers in 2007 while the differential narrowed to 5.4% in 2013. In contrast, the engineering figure ended the period with a 4.1% lead in 2019.

Table 19 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	667.6	100.0	719.3	100.0	728.1	100.0
Engineering professionals	597.8	89.5	680.3	94.6	758.2	104.1

Table 20 illustrates a similar pattern when compared to primary and nursery teachers. In 2007, for example, engineers' average basic earnings were somewhat lower than those of primary teachers but by 2013 there was a 4.9% lead before this grew to 7.6% in 2019.

Table 20 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	643.4	100.0	648.3	100.0	704.8	100.0
Engineering professionals	597.8	92.9	680.3	104.9	758.2	107.6

c) Health professionals and pharmacists

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

Table 21 shows the relationship between the median basic earnings of the two health-related professions and secondary education teachers. Pharmacists did not have a sufficient sample size to produce a figure in 2019 but had median basic earnings which were 22.7% ahead of the teaching group in 2007 and 31.6% in 2013. The health professionals group did not produce a figure in 2007 but the 2013 and 2019 figures were just under 20% above that for secondary school teachers.

Table 21 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	681.1	100.0	737.1	100.0	755.2	100.0
Health professionals		No data	881.4	119.6	894.8	118.5
Pharmacists	835.9	122.7	970.0	131.6		No data

Earnings leads for health professionals and pharmacists exhibited the same pattern when compared with earnings for primary and nursery education teachers but the differentials were even greater as shown in Table 22.

Table 22 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	648.3	100.0	662.7	100.0	755.2	100.0
Health professionals		No data	881.4	133.0	894.8	118.5
Pharmacists	835.9	128.9	970.0	146.4		No data

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

Table 23 illustrates that when average basic earnings were analysed the health groups' figures were significantly higher. For example, average earnings leads of health professionals over secondary education teachers ranged between 46.3% and 96.7%. In the case of pharmacists, the gap was smaller but still significant with pharmacists' average basic earnings exceeding those for secondary school teachers by 35%-41% in 2007 and 2013 before dropping off to 15.1% in 2019.

Table 23 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	667.6	100.0	719.3	100.0	728.1	100.0
Health professionals	1,313.4	196.7	1,140.7	158.6	1,064.9	146.3
Pharmacists	901.0	135.0	1,013.8	140.9	838.1	115.1

The pattern was similar when primary and nursery education teachers' basic earnings were examined although differentials were larger, reflecting the fact that primary school teachers tend to earn lower amounts than their secondary school counterparts as shown in the table below.

Table 24 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	643.4	100.0	648.3	100.0	704.8	100.0
Health professionals	1,313.4	204.1	1,140.7	176.0	1,064.9	151.1
Pharmacists	901.0	140.0	1,013.8	156.4	838.1	118.9

d) Legal professionals

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

Table 24 shows how the median basic earnings of legal professionals compared to secondary teachers across the period. In 2007, for instance, the legal professional figure was 8.3% ahead of the teaching group but then fell behind in 2013. In 2019, the legal figure recovered with a 2.2% lead over the teaching group.

Table 25 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	681.1	100.0	737.1	100.0	755.2	100.0
Legal professionals	737.5	108.3	631.9	85.7	771.5	102.2

A comparison with primary and nursery education teachers' median earnings illustrates a similar pattern as shown below.

Table 26 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	648.3	100.0	662.7	100.0	755.2	100.0
Legal professionals	737.5	113.8	631.9	95.4	771.5	102.2

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

Average figures were also disclosed in in every year as shown in Table 27. It shows that legal professionals had a lead in average basic earnings over secondary school teachers of 20.9% in 2007 while there was a shortfall of 0.9% in 2013 before they finished the period with a 16.9% lead.

Table 27 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	667.6	100.0	719.3	100.0	728.1	100.0
Legal professionals	807.0	120.9	712.8	99.1	851.5	116.9

The average basic earnings of primary and nursery education teachers were behind in all three years by between 9.9% and 25.4%, finishing the period with a shortfall of over 20%.

Table 27: Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	643.4	100.0	648.3	100.0	704.8	100.0
Legal professionals	807.0	125.4	712.8	109.9	851.5	120.8

e) Business, research and administrative professionals

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

The business, research and administrative sector is often considered a relatively well-paid part of the economy although this appears to be less the case in Wales. As Table 28 shows, median basic earnings of both teaching groups were actually greater in all years although there was no data available in 2007 for the management consultant group.

In 2007, the median basic earnings of chartered accountants were worth just 94.7% of the equivalent secondary education teacher figure and 99.5% of the primary school equivalent. In 2013, the corresponding differentials stood at 86.8% and 96.6% before finishing the period well behind with a figure worth 85.3% of both teaching amounts.

Table 28 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	681.1	100.0	737.1	100.0	755.2	100.0
Chartered and certified accountants	645.0	94.7	640.1	86.8	643.9	85.3
Management consultants, business analysts		No data	504.4	68.4	584.7	77.4

Data was available for the management consultant group in 2013 and 2019 when the median basic earnings figures were significantly lower than those for the secondary teacher group. Differentials were 31.6% lower in 2013 and 22.6% behind in 2019. Similarly, figures trailed those of primary and nursery teachers by 23.9% in 2013 and 22.6% in 2019.

Table 29 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	648.3	100.0	662.7	100.0	755.2	100.0
Chartered and certified accountants	645.0	99.5	640.1	96.6	643.9	85.3
Management consultants, business analysts		No data	504.4	76.1	584.7	77.4

Figures for average basic earnings were available for the two business groups in all years and, for both, the figures started the period ahead of secondary school teachers before falling behind in 2013 and pulling marginally ahead in 2019.

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

Table 30 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	667.6	100.0	719.3	100.0	728.1	100.0
Chartered and certified accountants	694.5	104.0	698.4	97.1	729.1	100.1
Management consultants, business analysts	762.3	114.2	570.9	79.4	735.8	101.1

The pattern was similar when the figures were compared with those for primary and nursery teachers with the average basic earnings figure for management consultants finishing the period at a level worth 104.4% of the equivalent primary and nursery school amount. The differential with chartered accountants was slightly narrower with the figure worth 103.4% of the corresponding teaching amount at the end of the period.

Table 31 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	643.4	100.0	648.3	100.0	704.8	100.0
Chartered and certified accountants	694.5	107.9	698.4	107.7	729.1	103.4
Management consultants, business analysts	762.3	118.5	570.9	88.1	735.8	104.4

f) Chartered surveyors

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

In Table 32, it is clear that chartered surveyors' median basic earnings were relatively low compared to teachers in the two years for which data was available. In 2013, for example, the median basic earnings of chartered surveyors were 22.5% behind those of secondary education teachers while in 2019 they trailed by 26.9%.

Table 32 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	681.1	100.0	737.1	100.0	755.2	100.0
Chartered surveyors		No data	571.4	77.5	552.3	73.1

Table 33 presents a similar picture although the differentials between the median basic earnings of chartered surveyors and those of primary and nursery education teachers were smaller in 2013 before finishing the period with a 26.9 % negative differential, the same as for secondary teachers.

Table 33 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	648.3	100.0	662.7	100.0	755.2	100.0
Chartered surveyors		No data	571.4	86.2	552.3	73.1

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

When measured by average basic earnings, the pattern was again similar with the levels for chartered surveyors all lower than the equivalent figures for both teaching groups but the differentials were narrower. For example, chartered surveyors' average basic earnings were around 21.1% lower than the secondary school equivalent in 2019 (compared to 26.9% for the median analysis).

Table 34 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	667.6	100.0	719.3	100.0	728.1	100.0
Chartered surveyors	548.1	82.1	593.8	82.6	574.7	78.9

Similarly, the chartered surveyor average basic earnings differential with primary and nursery school teachers represented a shortfall of 18.5% in 2019 as shown in the table below. This compared to an equivalent difference of 26.9% when the median figures were compared.

Table 35 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	643.4	100.0	648.3	100.0	704.8	100.0
Chartered surveyors	548.1	85.2	593.8	91.6	574.7	81.5

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

While incentive pay and other amounts additional to basic pay, such as overtime or shift pay, do not play an important part in teachers' earnings, those employed in other sectors often receive significant amounts from bonuses and/or other sources.* For this reason, to provide a more accurate picture of overall pay relativities across the 12 professions it is important to examine gross as well as basic earnings.

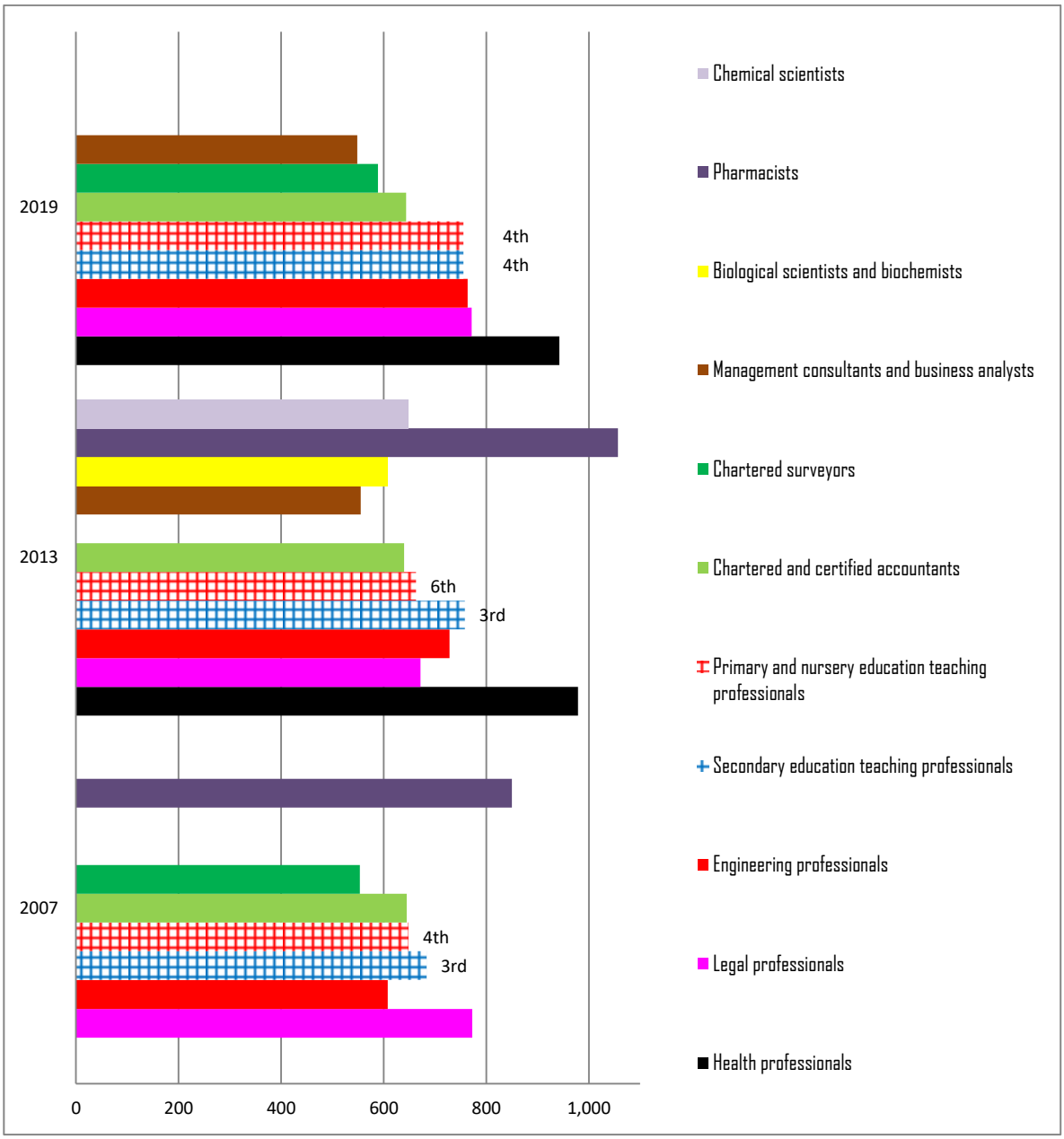
For this reason, the section that follows focuses on comparisons of median and average gross earnings that incorporate additional elements of remuneration such as bonuses and overtime on top of salary. Because these additions tend to be more significant for non-teaching professions, the relative positions of the two teaching groups tend to be lower than the equivalent rankings associated with basic earnings shown in the preceding section.

Graph 16 below presents the relationship between the levels of median gross earnings for each of the selected professions across the three years. As the footnote to the graph explains, data was not available for all of the groups in every year which needs to be borne in mind when evaluating the results.

The other forms of remuneration included within gross earnings mean that the rankings have changed slightly in comparison to the median basic pay position. For example, both the primary and secondary teaching groups' rankings fall from third out of six as measured by median basic earnings to fourth out of six for median gross earnings.

*It is important to note, however, that because of the timing of the ASHE survey, which is normally conducted in April each year, bonuses do not receive adequate coverage. This is because the earnings season in most sectors runs from December to March. As a result, the earnings leads described in this section are likely to be an understatement.

Graph 16 Comparison of median gross earnings of all comparator graduate professions including school teachers in Wales: 2007, 2013 and 2019*



Source: ASHE

**Based on available data for five non-teaching professions in 2007, eight in 2013 and six in 2019.*

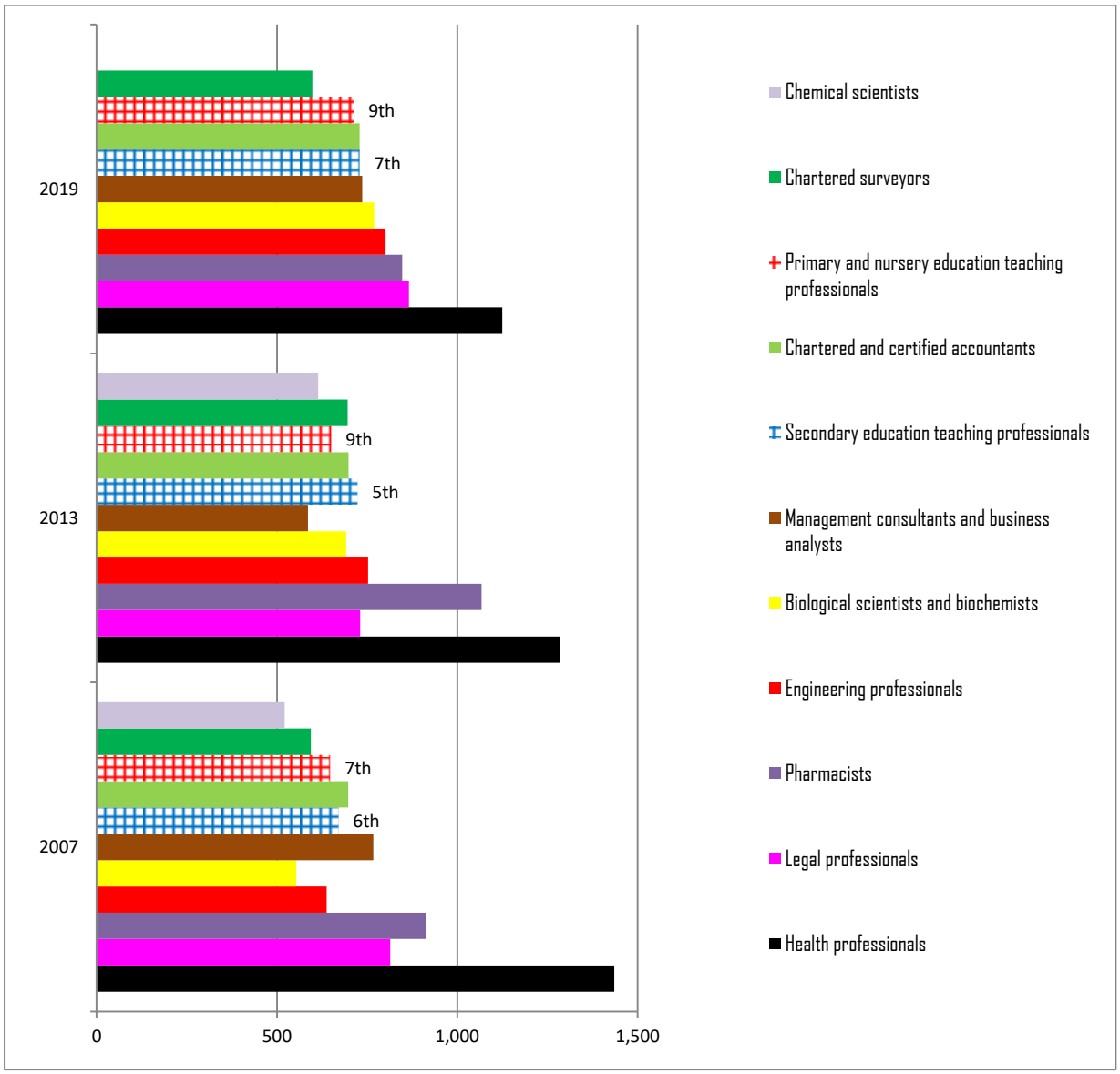
Table 36 Ranking of median gross earnings levels of 12 graduate professions 2007 to 2019*

Group	2007 rank	2013 rank	2019 rank
Secondary education teachers	3	3	4
Primary and nursery education teachers	4	6	4

Source: ASHE

**Based on available data for five non-teaching professions in 2007, eight in 2013 and six in 2019.*

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



Source: ASHE

**Based on available data for nine non-teaching professions in 2007, nine in 2013 and eight in 2019.*

Graph 17 presents the same relationships but this time using average rather than median gross earnings. In comparison with the previous graph, what is most notable are the stark differences between the rankings with the positions of the two teaching professions, as measured by average figures, significantly lower than those shown for median gross earnings.

As the graph shows, secondary school teachers started the period ranked sixth before rising to fifth and ending in seventh place in 2019. For primary and nursery school teachers, the equivalent positions were seventh, ninth and ninth respectively. Some caution needs to be exercised when evaluating these differences, however, because there were more professions with average figures disclosed in comparison to medians in all years.

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

Group	2007 rank	2013 rank	2019 rank
Secondary education teachers	6	5	7
Primary and nursery education teachers	7	9	9

Source: ASHE

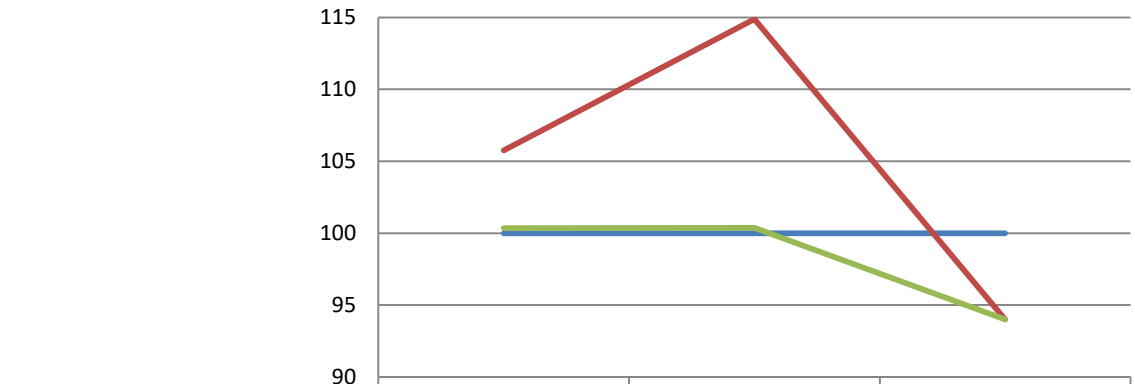
**Based on available data for nine non-teaching professions in 2007, nine in 2013 and eight in 2019.*

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

As for median basic earnings, we have created an unweighted combined figure for the median gross earnings of the non-teaching professions. The patterns for the two graphs were very similar in that the relative positions of both teaching professions improved over the 13-year period.

As Graph 18 illustrates, both teaching groups started the period in 2007 behind or slightly behind the selected unweighted basket of graduate professions as measured by median gross earnings. By 2013, the secondary school teacher figure was again very slightly behind the combined figure whereas the primary and nursery school figure was almost 15% lower. By 2019, differentials for both secondary and primary school teachers were 6% above the combined figure.

Graph 18 Indexed median gross earnings lead of all-comparator graduate professions over school teachers: 2007, 2013 and 2019



	2007	2013	2019
School teachers	100.0	100.0	100.0
Average position of other professions versus primary and nursery school teachers	105.8	114.9	94.0
Average position of other professions versus secondary school teachers	100.4	100.4	94.0

Source: ASHE

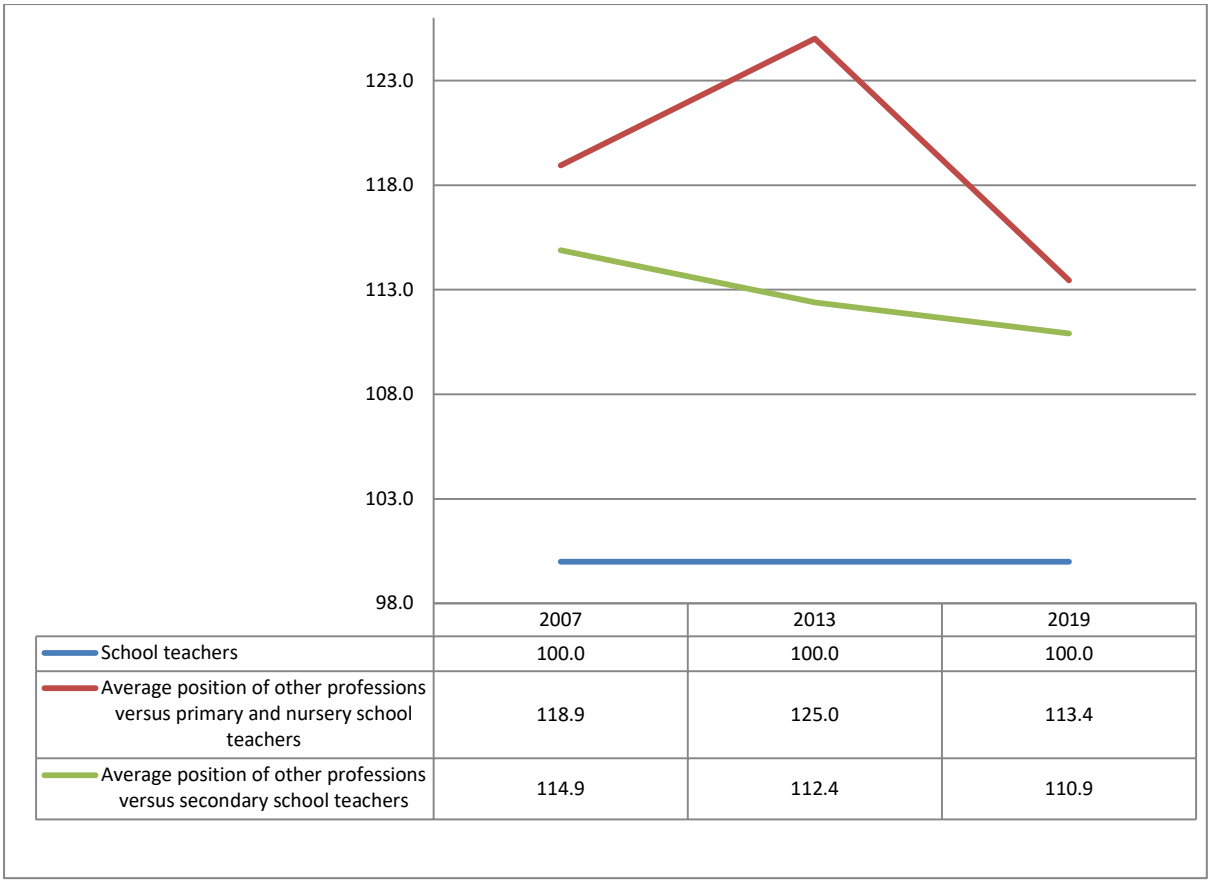
**Based on available data for five non-teaching professions in 2007, eight in 2013 and six in 2019.*

A caveat mentioned earlier, that should be borne in mind when reviewing these findings, is that the combined figure may be influenced by particular professions that are either very high or low-paid. For example, health professionals were by far the highest-paid in all three years. In addition, the caveats mentioned earlier— unmatched samples across the three years with some jobs not featuring in some years due to small sample sizes as well as changing occupational definitions over the period – are also likely to affect the results.

As with the other results throughout this report, when using average measures the earnings differentials between teachers and other graduate professions are often greater than the corresponding median differentials which is also the case in graph 19. This demonstrates a different pattern to the previous graph as the two teaching groups' average earnings are well below those of the combined non-teaching group throughout the period.

As the graph demonstrates, the combined non-teaching group figure was 10.9% greater than the corresponding secondary school amount in 2019 and 13.4% ahead of the equivalent primary and nursery school figure.

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



	2007	2013	2019
School teachers	100.0	100.0	100.0
Average position of other professions versus primary and nursery school teachers	118.9	125.0	113.4
Average position of other professions versus secondary school teachers	114.9	112.4	110.9

Source: ASHE

**Based on available data for nine non-teaching professions in 2007, nine in 2013 and eight in 2019.*

5.7. Occupational findings on gross pay in detail

In the following pages, we summarise the main findings from the indexation analysis for gross earnings as shown in tables 38 to 61.

a) Science, research, engineering and technology professionals

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

Median gross earnings data for some of the scientific professionals were not available in some years as evident from Table 38. In fact, the only professions that produced data were biological and chemical scientists and this was only the case in 2013. In this year, median gross earnings for chemists and biologists were worth 85.4% and 80.1% respectively of the secondary school teachers' figure.

Table 38 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	683.4	100.0	758.4	100.0	755.2	100.0
Chemical scientists		No data	647.5	85.4		No data
Biological scientists and biochemists		No data	607.4	80.1		No data
Physical scientists		No data		No data		No data

The pattern of median gross earnings with respect to primary and nursery school teachers was similar although again, the differentials were slightly narrower reflecting the lower pay levels for this teaching group. In 2013, chemical and biological scientists' median gross earnings were worth 97.7% and 91.7% of the equivalent primary and nursery school teacher amount.

Table 39 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	648.5	100.0	662.7	100.0	755.2	100.0
Chemical scientists		No data	647.5	97.7		No data
Biological scientists and biochemists		No data	607.4	91.7		No data
Physical scientists		No data		No data		No data

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

Average gross earnings for science professions were also affected by limited sample sizes although not to the same extent. There was no data available for physical scientists and data was available for the chemical group in 2007 and 2013, but not in 2019. By contrast, data on biological scientists was available for all three years.

For the chemical scientist group, the average gross earnings figure was worth just 77.8% of the corresponding secondary education teacher level in 2007 before rising to 84.8% in 2013. For biological scientists, the differential narrowed from a 17.4% shortfall in 2007 to 4.4% in 2013 before ending the period with average gross earnings 5.5% above the equivalent secondary education figure.

Table 40 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	670.8	100.0	723.8	100.0	729.6	100.0
Chemical scientists	521.7	77.8	614.1	84.8		No data
Biological scientists and biochemists	554.1	82.6	691.7	95.6	769.8	105.5
Physical scientists		No data		No data		No data

The pattern was similar for primary and nursery teachers except that the differentials were greater and the biological group's figures ended the period even higher than that for teachers, reflecting the relatively lower average gross earnings of primary and nursery school teachers.

Table 41 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	647.9	100.0	650.7	100.0	713.3	100.0
Chemical scientists	521.7	80.5	614.1	94.4		No data
Biological scientists and biochemists	554.1	85.5	691.7	106.3	769.8	107.9
Physical scientists		No data		No data		No data

b) Engineering professionals

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

Table 42 demonstrates that median gross earnings for engineering professionals were ahead of those for secondary education teachers in 2019 but only by 1.1%. They had been lower in the earlier period, with the respective figures worth 89% of the teaching figure in 2007 and 96% in 2013.

Table 42 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	683.4	100.0	758.4	100.0	755.2	100.0
Engineering professionals	608.0	89.0	728.3	96.0	763.8	101.1

An examination of engineering professionals' median gross earnings compared to primary and nursery school teachers is illustrated in Table 43. The engineering figures started the period behind those for primary school teachers by 6.2% in 2007 before rising above in 2013, by 9.9%. By 2019, there was almost parity with the engineering figure leading the teaching one by 1.1%.

Table 43 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	648.5	100.0	662.7	100.0	755.2	100.0
Engineering professionals	608.0	93.8	728.3	109.9	763.8	101.1

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

Tables 44 and 45 demonstrate that the average gross earnings figures for engineering professionals were ahead of those for both secondary and primary school teachers in 2019 with differentials of 9.8% and 12.4% respectively. The pattern was similar in 2013 with both teaching groups ahead while they both trailed the engineering group in 2007.

Table 44 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	670.8	100.0	723.8	100.0	729.6	100.0
Engineering professionals	637.7	95.1	752.4	104.0	801.4	109.8

Table 45 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	647.9	100.0	650.7	100.0	713.3	100.0
Engineering professionals	637.7	98.4	752.4	115.6	801.4	112.4

c) Health professionals

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

Of all the occupational groups examined, health professionals are the highest-paid and where data was available, median gross earnings were significantly ahead of those for both teaching groups in all years. In 2019, for example, median gross earnings of health professionals were around 25% higher than the secondary and primary teaching groups. Pharmacists also earned more in 2007 and 2013 but no data was available for this group in 2019.

Table 46 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	683.4	100.0	758.4	100.0	755.2	100.0
Health professionals		No data	979.2	129.1	942.6	124.8
Pharmacists	849.9	124.4	1,057.0	139.4		No data

Table 47 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	648.5	100.0	662.7	100.0	755.2	100.0
Health professionals		No data	979.2	147.8	942.6	124.8
Pharmacists	849.9	131.1	1,057.0	159.5		No data

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

The data in tables 48 and 49 illustrate that the average gross earnings leads of health professionals and pharmacists over secondary and primary and nursery education teachers were even more significant. Health professionals, for example, had average gross earnings that were 54.1% greater than the equivalent secondary school figure in 2019 while the differential was 16.2% in favour of pharmacists in the same year.

Table 48 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	670.8	100.0	723.8	100.0	729.6	100.0
Health professionals	1,435.6	214.0	1,284.2	177.4	1,124.5	154.1
Pharmacists	913.4	136.2	1,067.6	147.5	847.5	116.2

When compared to primary and nursery school teachers the 2019 differentials were even greater standing at 57.6% and 18.8% respectively.

Table 49 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	647.9	100.0	650.7	100.0	713.3	100.0
Health professionals	1,435.6	221.6	1,284.2	197.4	1,124.5	157.6
Pharmacists	913.4	141.0	1,067.6	164.1	847.5	118.8

d) Legal professionals

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

The data relating to median gross earnings for legal professionals showed a mixed picture when compared to secondary school teachers. For example, the legal figure was ahead in 2007 by 13.1% before falling to 88.6% of the secondary amount in 2013. By 2019 though, the legal median was 2.2% above the corresponding teaching figure.

Table 50 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	683.4	100.0	758.4	100.0	755.2	100.0
Legal professionals	772.8	113.1	671.9	88.6	771.5	102.2

The pattern was similar when compared to primary and nursery teacher median gross earnings except the legal amount was ahead in all three years also finishing with a 2.2% lead.

Table 51 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	648.5	100.0	662.7	100.0	755.2	100.0
Legal professionals	772.8	119.2	671.9	101.4	771.5	102.2

Data on average gross earnings for legal professionals illustrated that amounts for this group were greater than the figures for both teaching groups in all three years. In fact, legal professionals' average gross earnings finished the period 18.7% ahead of the figure for secondary school teachers and 21.4% above the average gross earnings of primary and nursery school teachers.

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

Table 52 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	670.8	100.0	723.8	100.0	729.6	100.0
Legal professionals	814.0	121.3	731.2	101.0	866.2	118.7

Table 53 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	647.9	100.0	650.7	100.0	713.3	100.0
Legal professionals	814.0	125.6	731.2	112.4	866.2	121.4

e) Business, research and administrative professionals

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

Like their legal sector counterparts, occupations within the business, research and administrative professional group are usually considered to be relatively well-paid. Unfortunately, median data was not disclosed for each of the three years for management consultants with none available in 2007.

In 2019, however, both groups' median gross earnings trailed those of secondary school teachers with figures worth around 85% of the teaching amount for the accountancy group and 77.4% for management consultants.

Table 54 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	683.4	100.0	758.4	100.0	755.2	100.0
Management consultants, business analysts		No data	555.5	73.2	584.7	77.4
Chartered and certified accountants	645.0	94.4	640.1	84.4	643.9	85.3

Table 55 illustrated that differentials between the two business-related groups and primary and nursery education teachers were the same as for their secondary school colleagues in 2019.

Table 55 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	648.5	100.0	662.7	100.0	755.2	100.0
Management consultants, business analysts		No data	555.5	83.8	584.7	77.4
Chartered and certified accountants	645.0	99.5	640.1	96.6	643.9	85.3

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

Average gross earnings differentials for the two business-related professions demonstrated a different pattern when compared to secondary school teachers. Both started the period in 2007 ahead of the teaching group before falling back in 2013. By 2019, though, all three professions had average gross earnings that were very similar.

Table 56 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	670.8	100.0	723.8	100.0	729.6	100.0
Management consultants, business analysts	767.6	114.4	586.2	81.0	736.5	100.9
Chartered and certified accountants	697.4	104.0	698.4	96.5	729.1	99.9

A comparison with primary and nursery teachers shows that average gross earnings for the two non-teaching groups were ahead in almost every case. The only exception was management consultants in 2013. By 2019, the differentials were 3.3% in favour of management consultants and 2.2% for chartered accountants.

Table 57 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	647.9	100.0	650.7	100.0	713.3	100.0
Management consultants, business analysts	767.6	118.5	586.2	90.1	736.5	103.3
Chartered and certified accountants	697.4	107.6	698.4	107.3	729.1	102.2

f) Chartered surveyors

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

Median gross earnings for chartered surveyors were lower than those for secondary school teachers throughout the period, ending in 2019 with a negative differential of 22%.

Table 58 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	683.4	100.0	758.4	100.0	755.2	100.0
Chartered surveyors	553.6	81.0		No data	589.0	78.0

The pattern was similar when compared to primary and nursery school teachers although the differentials were smaller in 2007 but finished the period with the same gap.

Table 59 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	648.5	100.0	662.7	100.0	755.2	100.0
Chartered surveyors	553.6	85.4		No data	589.0	78.0

An analysis of average gross earnings showed that the chartered surveyor figures were also behind those for secondary school teachers in all three years but with smaller differentials. The differential was 11.4% in 2007 before narrowing to 3.8% in 2013 and finishing the period with a shortfall of 18%.

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

Table 60 Comparison with secondary education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Secondary education teaching professionals	670.8	100.0	723.8	100.0	729.6	100.0
Chartered surveyors	594.2	88.6	696.0	96.2	598.5	82.0

A comparison with the average gross earnings of primary and nursery school teachers exhibited a similar pattern although the chartered surveying figure was greater in 2013. Despite this, the chartered surveying figure was 16.1% behind the primary and nursery amount in 2019.

Table 61 Comparison with primary and nursery education teachers

	2007		2013		2019	
Profession	£pw	Index	£pw	Index	£pw	Index
Primary and nursery education teaching professionals	647.9	100.0	650.7	100.0	713.3	100.0
Chartered surveyors	594.2	91.7	696.0	107.0	598.5	83.9

6. ASHE earnings growth, RPI and CPI inflation

In this section of the report we examine the annual percentage change in median and average basic earnings for teachers in Wales 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 medians and averages of unmatched samples across the various years. Therefore, if a particular sample for a specific profession changes, the median and average could represent results for quite different groups across two years.

For example, some of the professions with relatively small 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, an influx of more junior and therefore lower-paid employees into a particular group may cause both the average and median salaries to fall when compared to the previous year. In addition, because of ONS changes in job definitions in 2010 there is no data available on pay rises from ASHE in 2011.

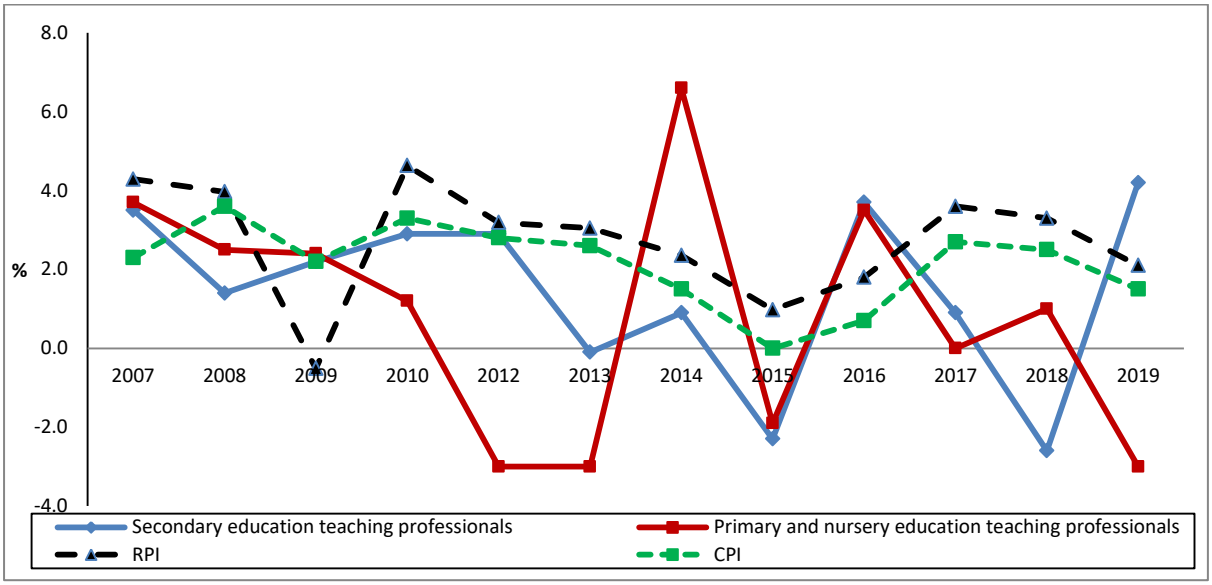
6.1. Teachers' pay changes

As can be seen from Graphs 20 and 21, after 2007, changes in both median and average basic earnings for teachers were largely below RPI inflation in most years. In the period since 2010, the value of median and average basic earnings has been eroded in real terms with the exception of 2014 when the primary teacher median figure increased significantly and 2016 when both teaching groups saw a jump in median earnings. Given we know that there was no actual large salary rise in these years these spikes are more likely to be due to sample composition changes rather than as a result of significant pay rises.

While both teaching groups have among the largest sample sizes of any of the professions we examined, they are still relatively small so in some years exhibit large fluctuations in the graphs below. For example, in the latest year, the change in median earnings for secondary teachers increased significantly while the primary and nursery figure fell. These variations are most likely explained by changes in the sample composition. For example, experienced teachers leaving the profession and/or an influx of new joiners are likely to have placed downward pressure on the

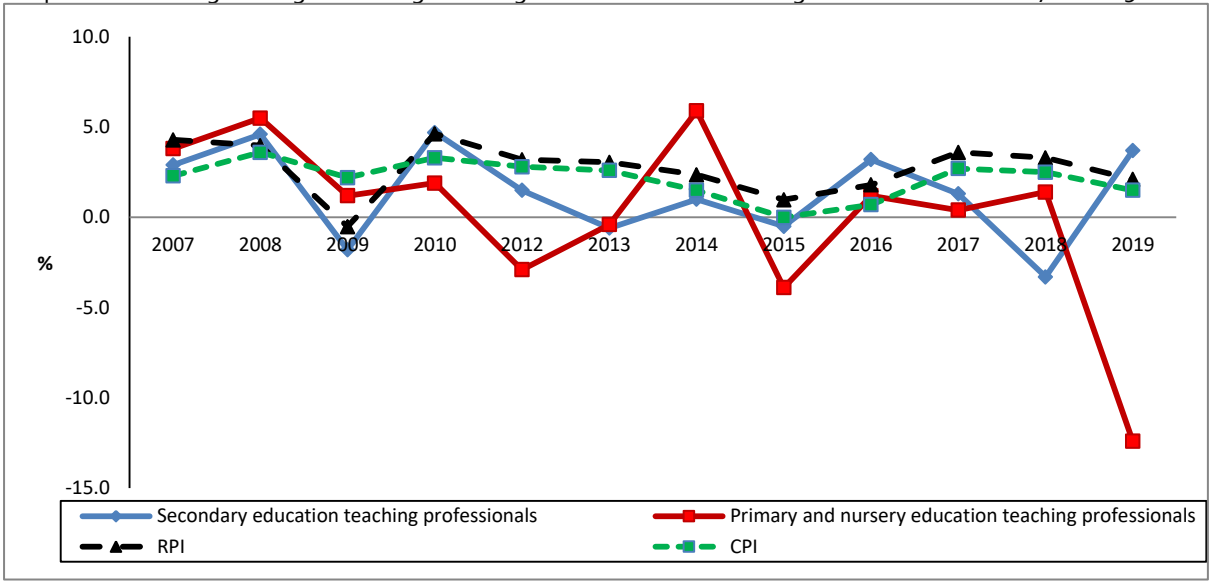
figures. In contrast, greater retention will lead to a greater proportion of teachers moving up the pay scale and therefore will impact the figures in a positive way.

Graph 20 Percentage change in median earnings for teachers in Wales against RPI and CPI 2007 to 2019



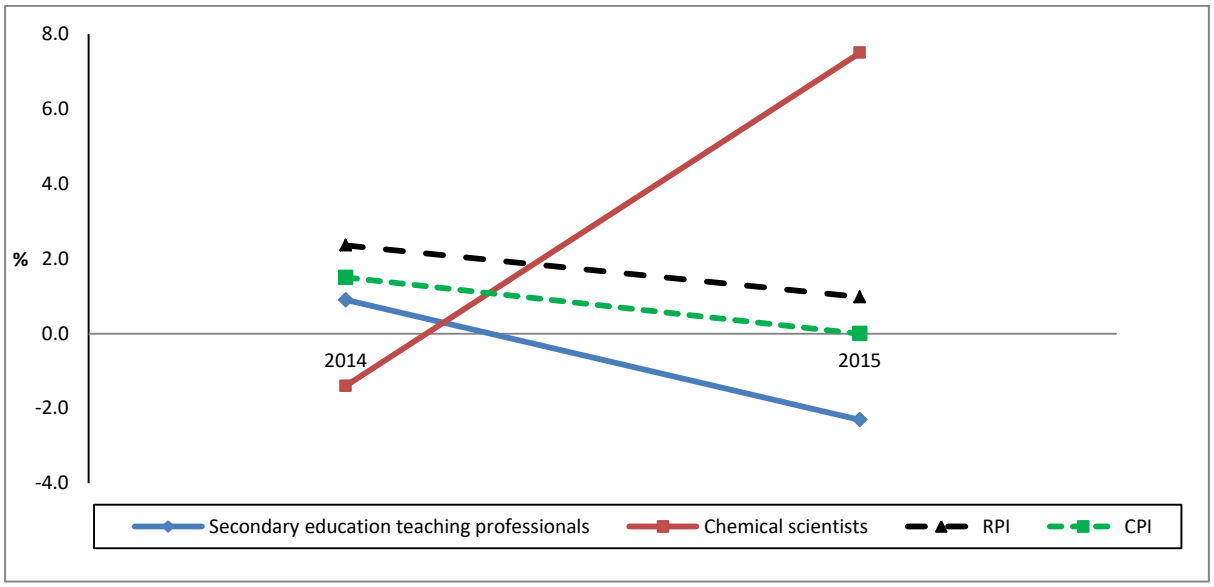
As Graph 21 below also illustrates, a similar trend can be observed for average earnings for teachers in Wales although the fall in primary school earnings was more pronounced.

Graph 21 Percentage change in average earnings for teachers in Wales against RPI and CPI 2007 to 2019

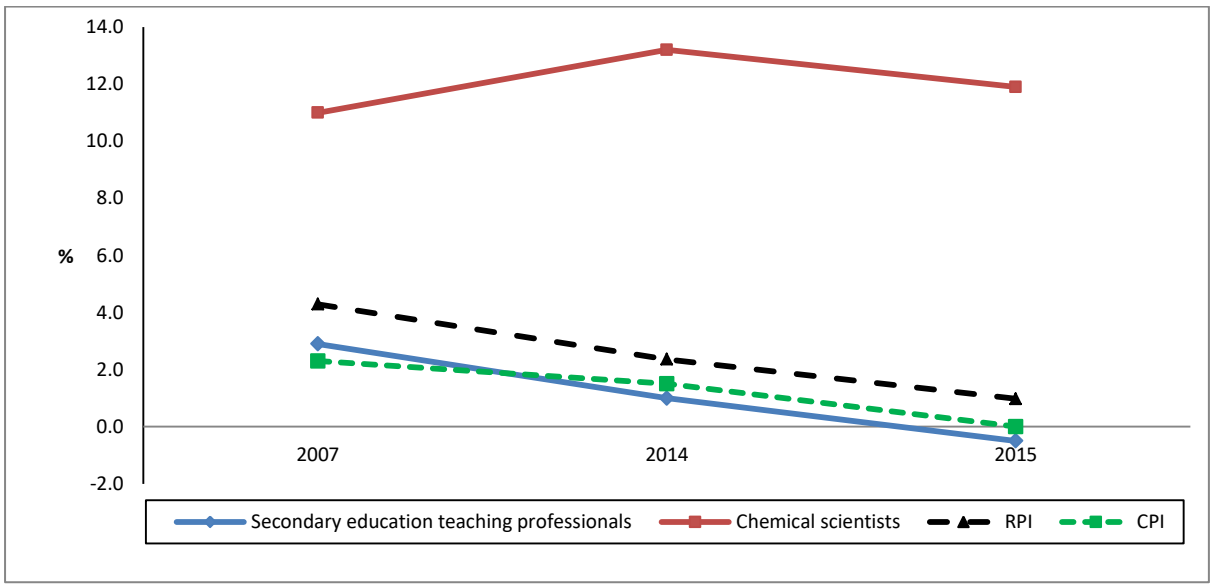


Details for graphs relating to all of the non-teaching professions relative to the two teaching groups and RPI follow. In some of the graphs, certain years are not shown because data was not available for certain professions due to sample sizes being too small.

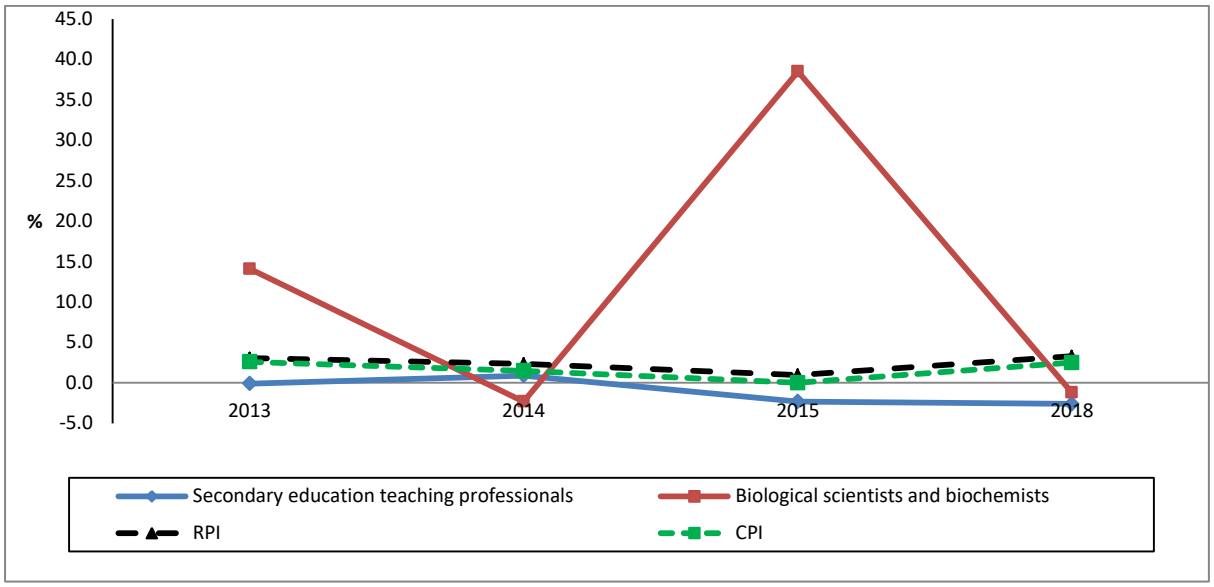
Graph 22 Percentage change in median earnings for chemical scientists and secondary school teachers in Wales against RPI and CPI 2007 to 2019



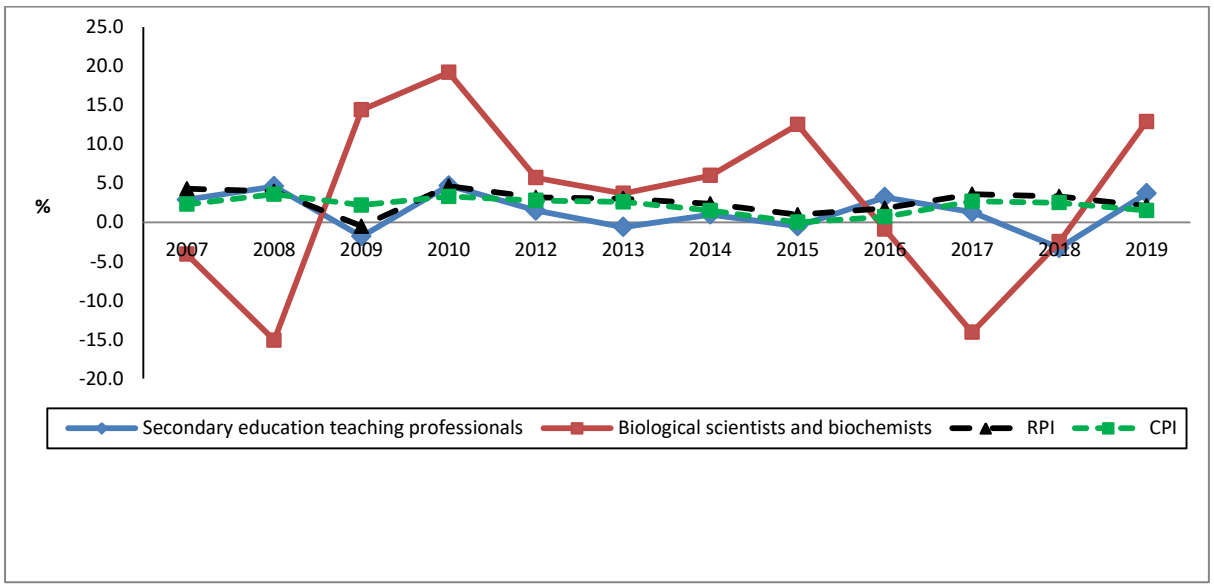
Graph 23 Percentage change in average earnings for chemical scientists and secondary school teachers in Wales against RPI and CPI 2007 to 2019



Graph 24 Percentage change in median earnings for biological scientists and biochemists and secondary school teachers in Wales against RPI and CPI 2007 to 2019



Graph 25 Percentage change in average earnings for biological scientists and secondary school teachers in Wales against RPI and CPI 2007 to 2019



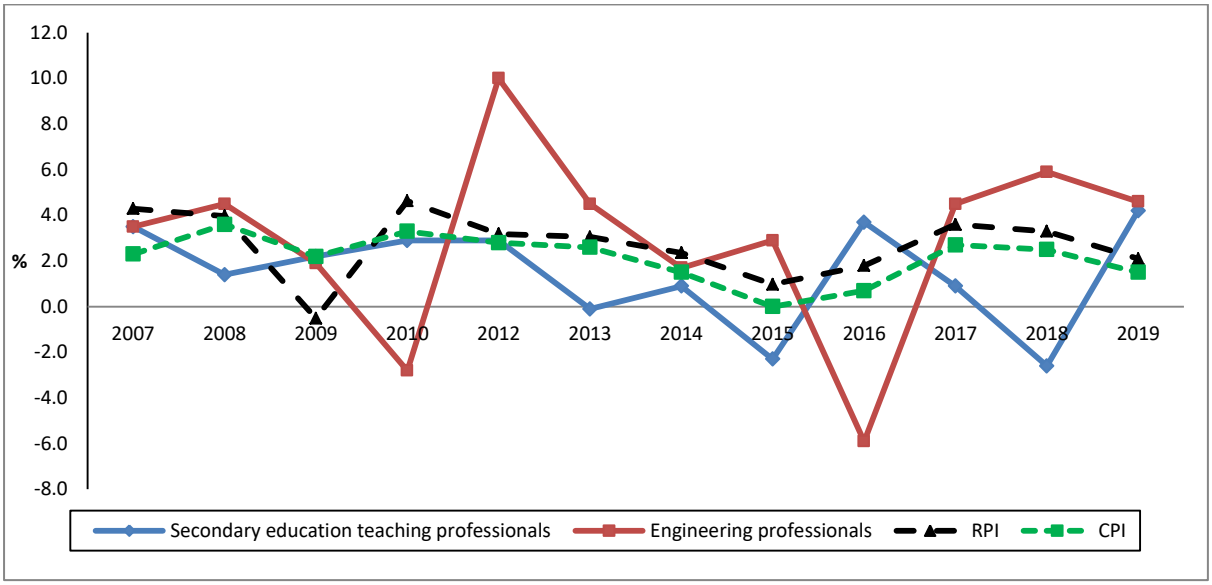
Graph 26 Percentage change in median in earnings for physical scientists and secondary school teachers in Wales against RPI and CPI 2007 to 2019

No data

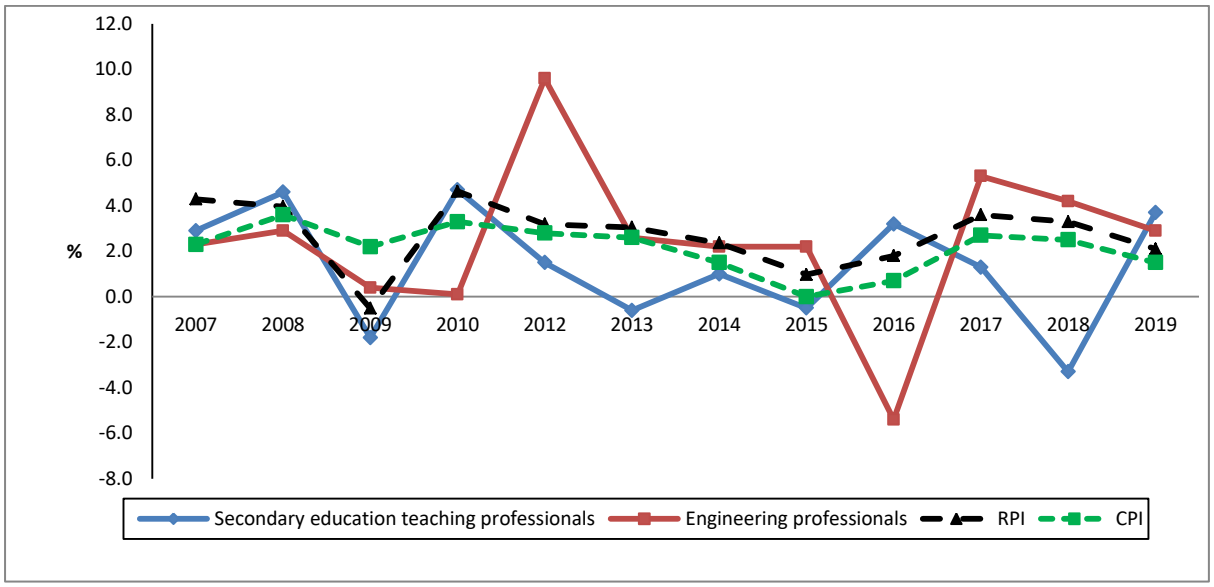
Graph 27 Percentage change in average earnings for physical scientists and secondary school teachers in Wales against RPI and CPI 2007 to 2019

No data

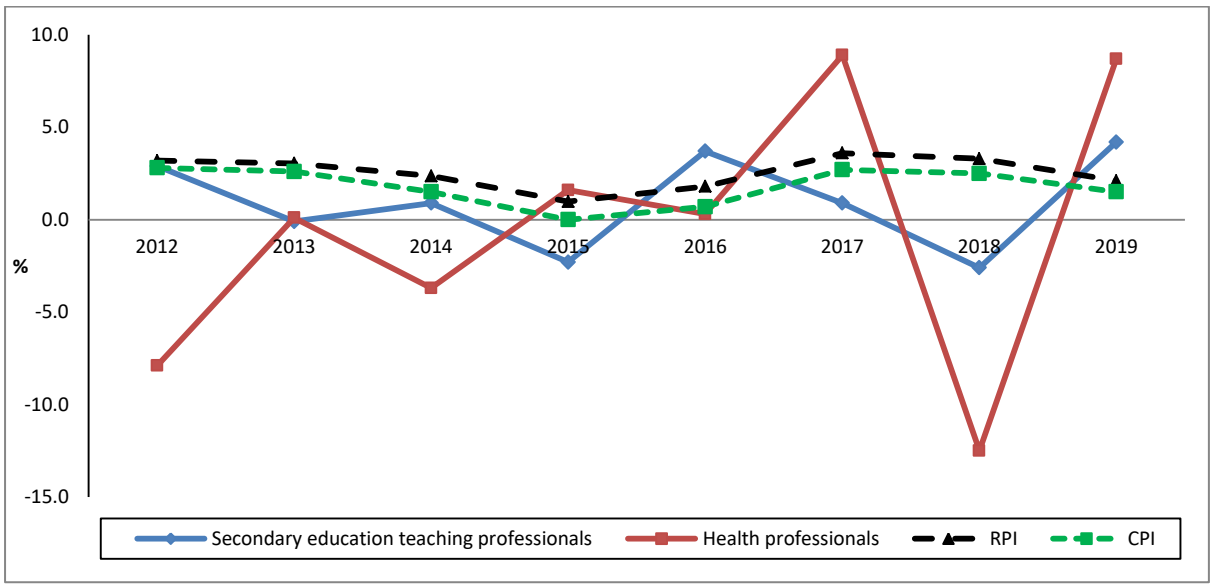
Graph 28 Percentage change in median earnings for engineering professional and secondary school teachers in Wales against RPI and CPI 2007 to 2019



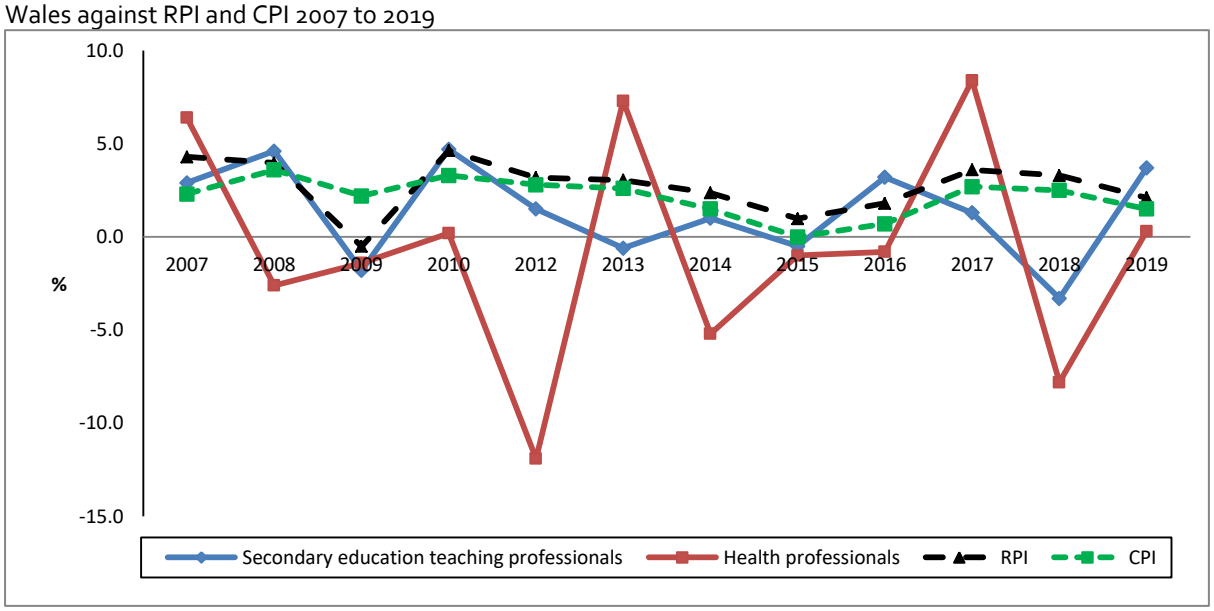
Graph 29 Percentage change in average earnings for engineering professional and secondary school teachers in Wales against RPI and CPI 2007 to 2019



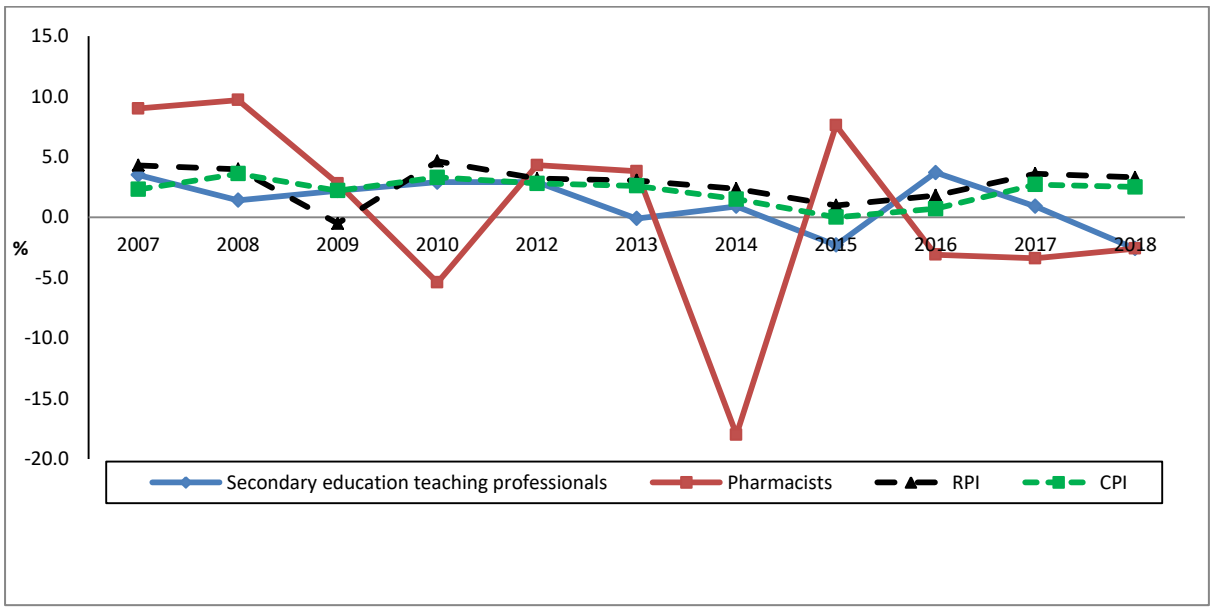
Graph 30 Percentage change in median earnings for health professionals and secondary school teachers in Wales against RPI and CPI 2007 to 2019



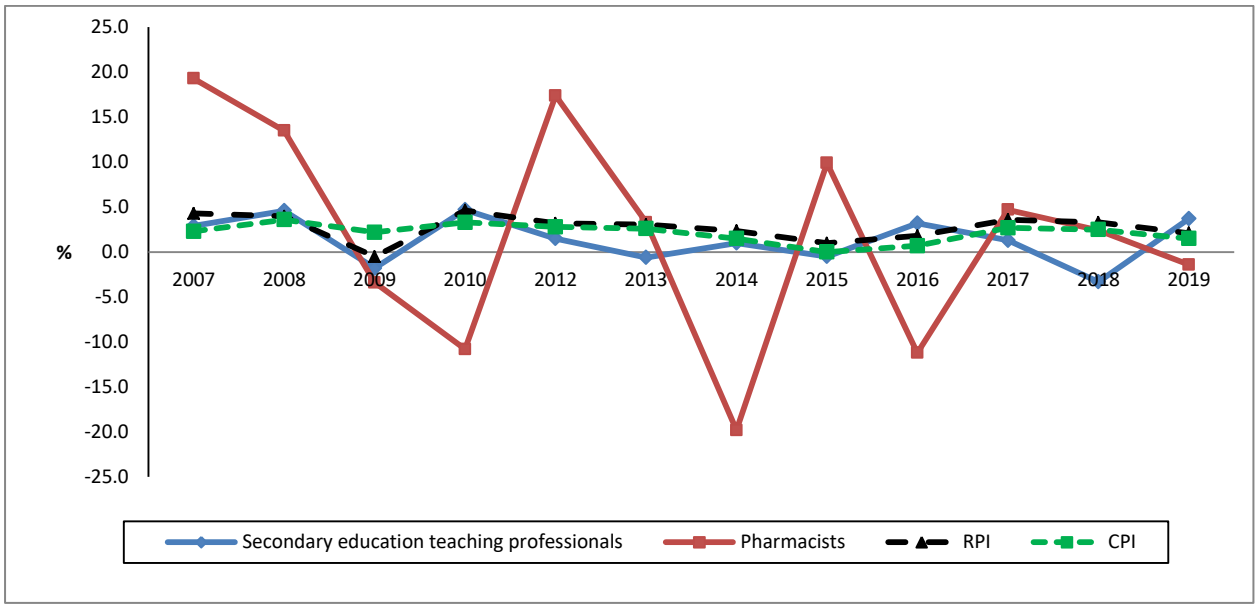
Graph 31 Percentage change in average earnings for health professionals and secondary school teachers in Wales against RPI and CPI 2007 to 2019



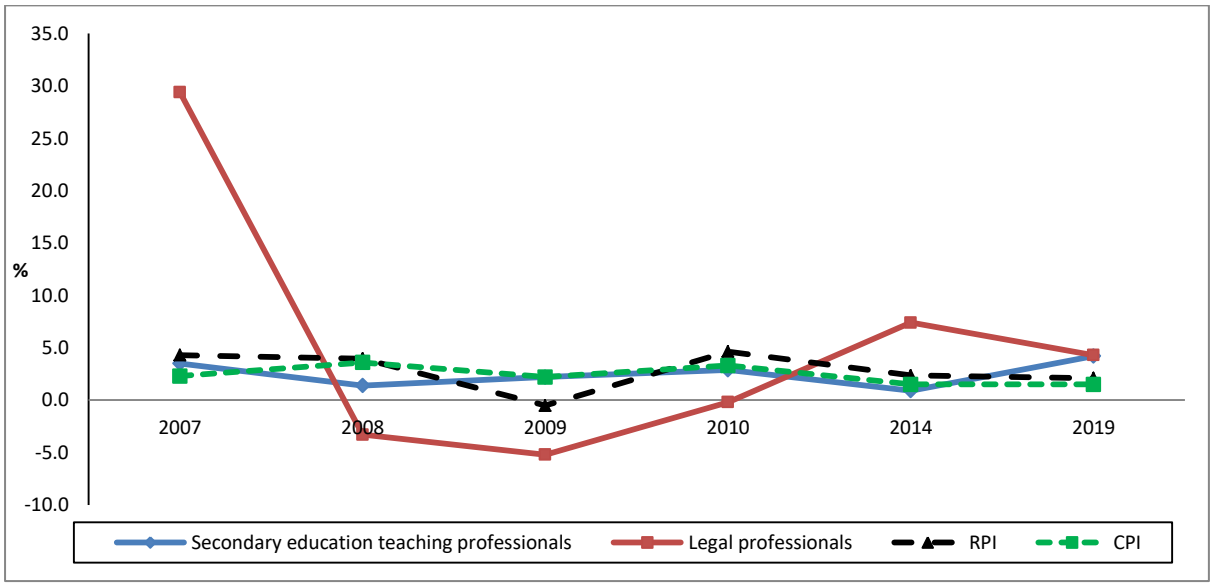
Graph 32 Percentage change in median earnings for pharmacists and secondary school teachers in Wales against RPI and CPI 2007 to 2019



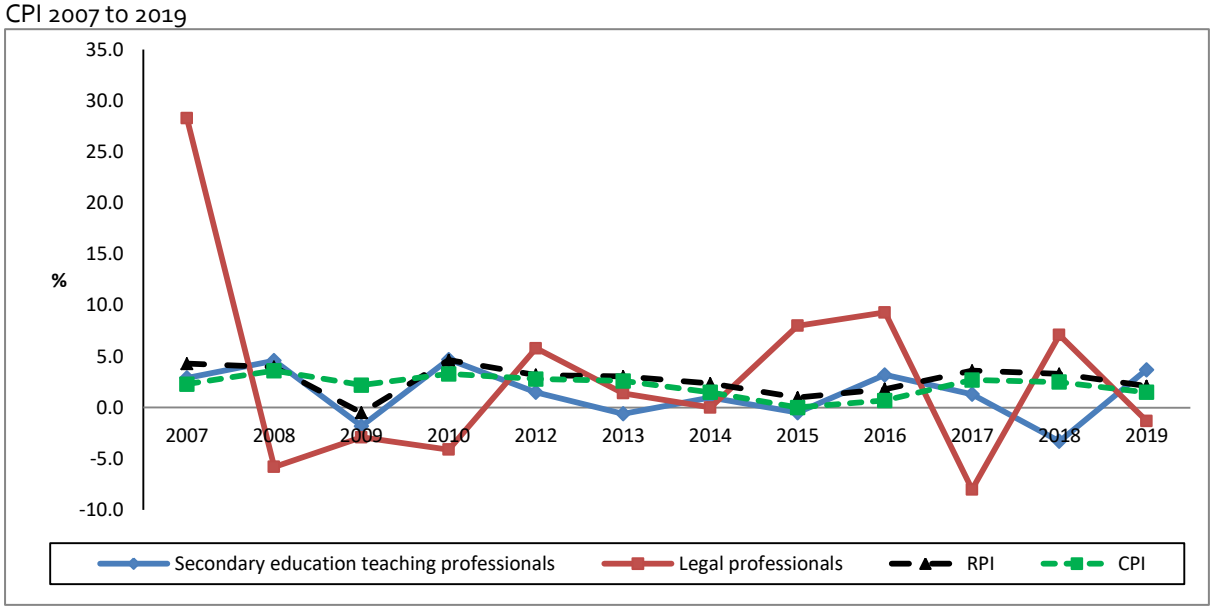
Graph 33 Percentage change in average earnings for pharmacists and secondary school teachers in Wales against RPI and CPI 2007 to 2019



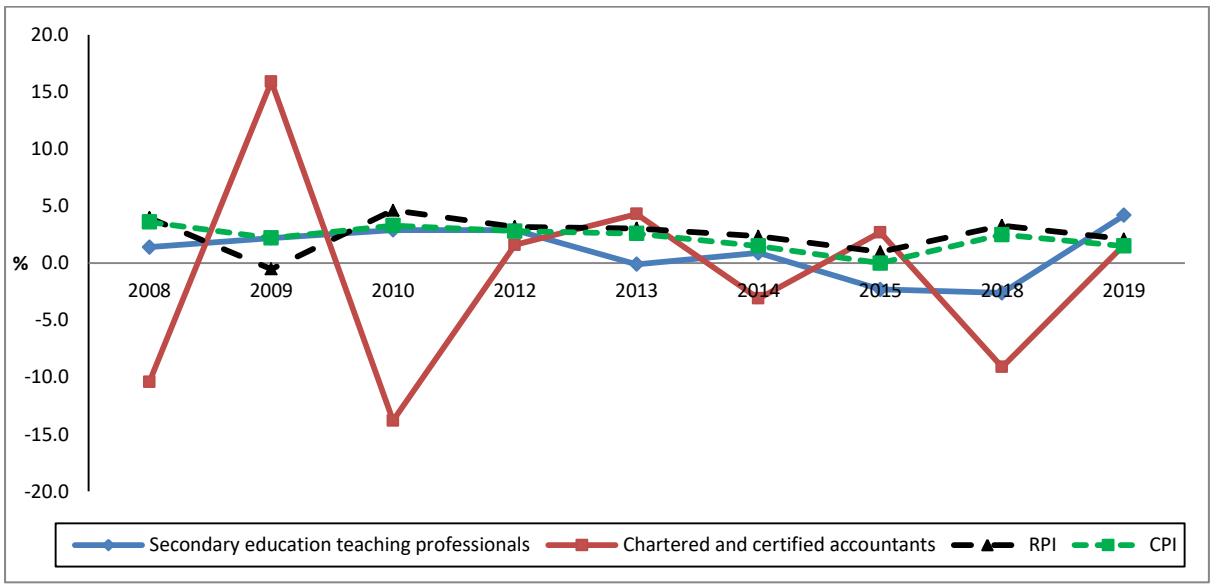
Graph 34 Percentage change in median earnings for legal professionals and teachers in Wales against RPI and CPI 2007 to 2019



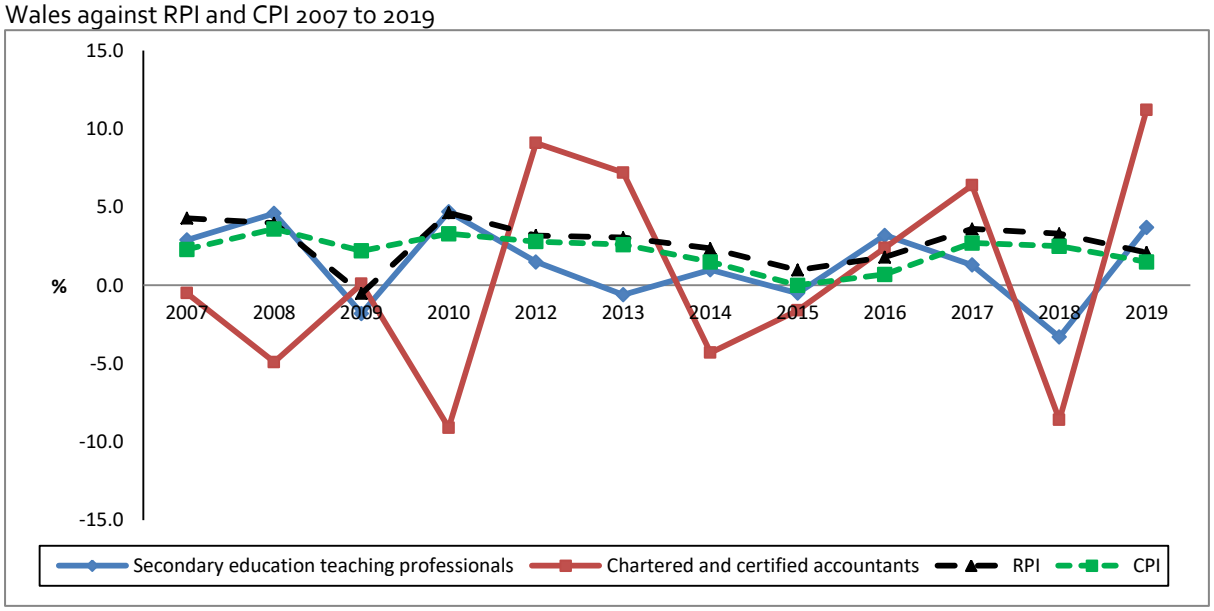
Graph 35 Percentage change in average earnings for legal professionals and teachers in Wales against RPI and CPI 2007 to 2019



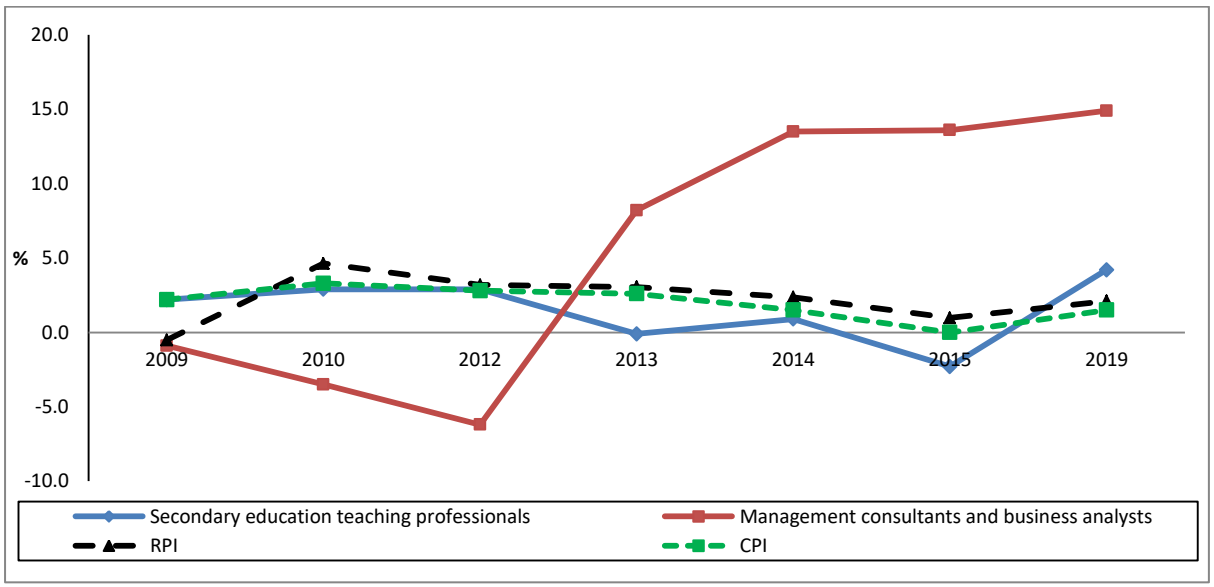
Graph 36 Percentage change in median earnings for chartered and certified accountants and teachers in Wales against RPI and CPI 2007 to 2019



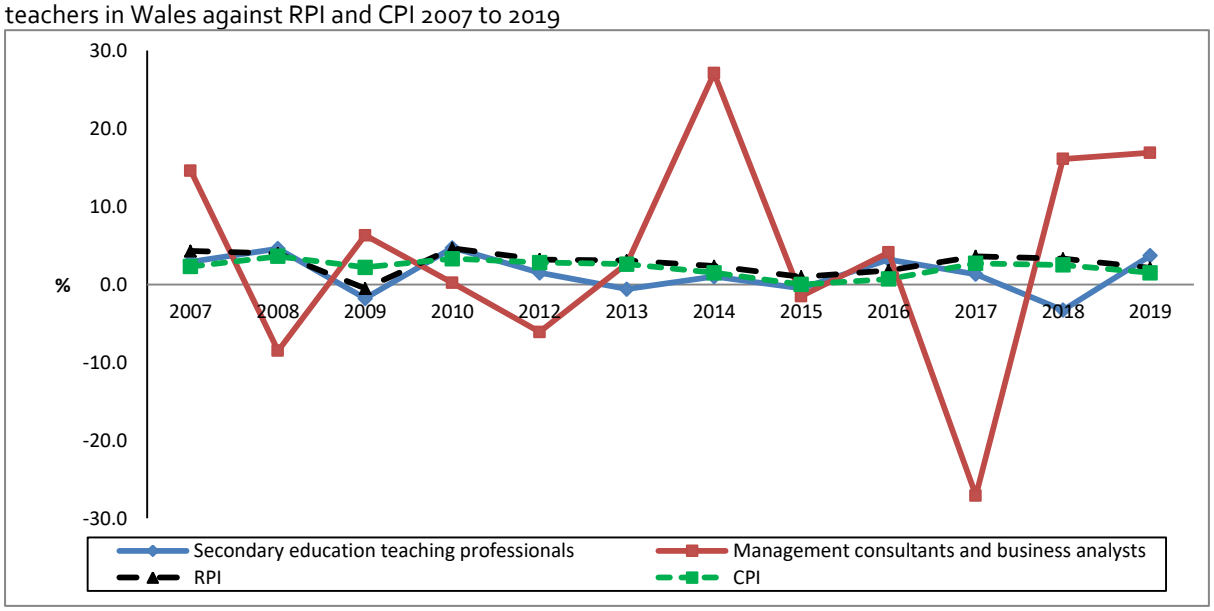
Graph 37 Percentage change in average earnings for chartered and certified accountants and teachers in Wales against RPI and CPI 2007 to 2019



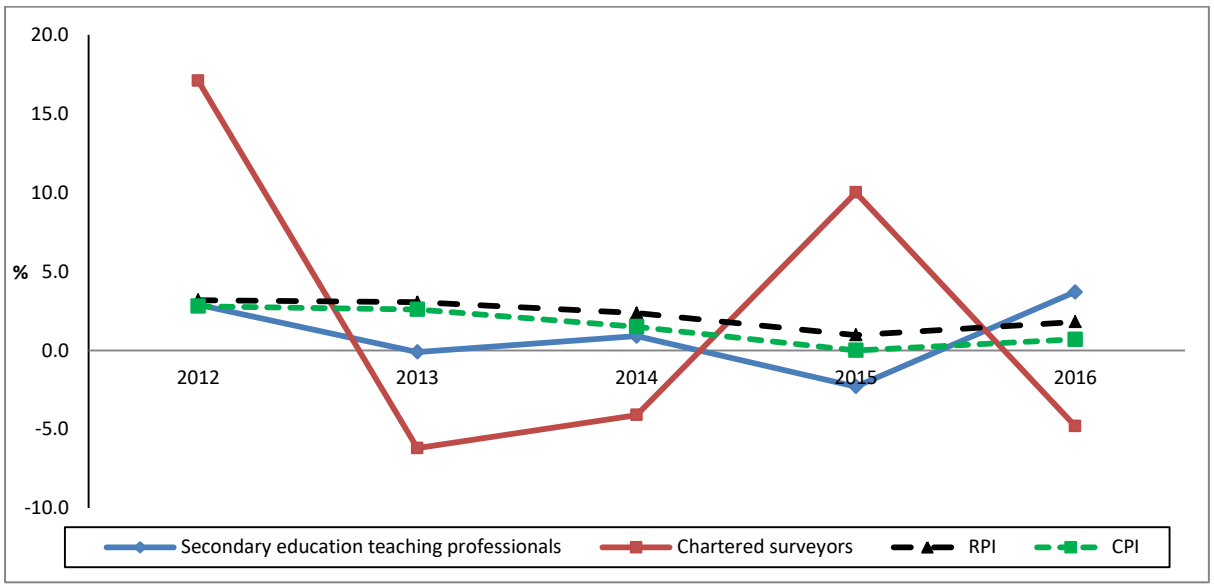
Graph 38 Percentage change in median earnings for management consultants and business analysts and teachers in Wales against RPI and CPI 2007 to 2019



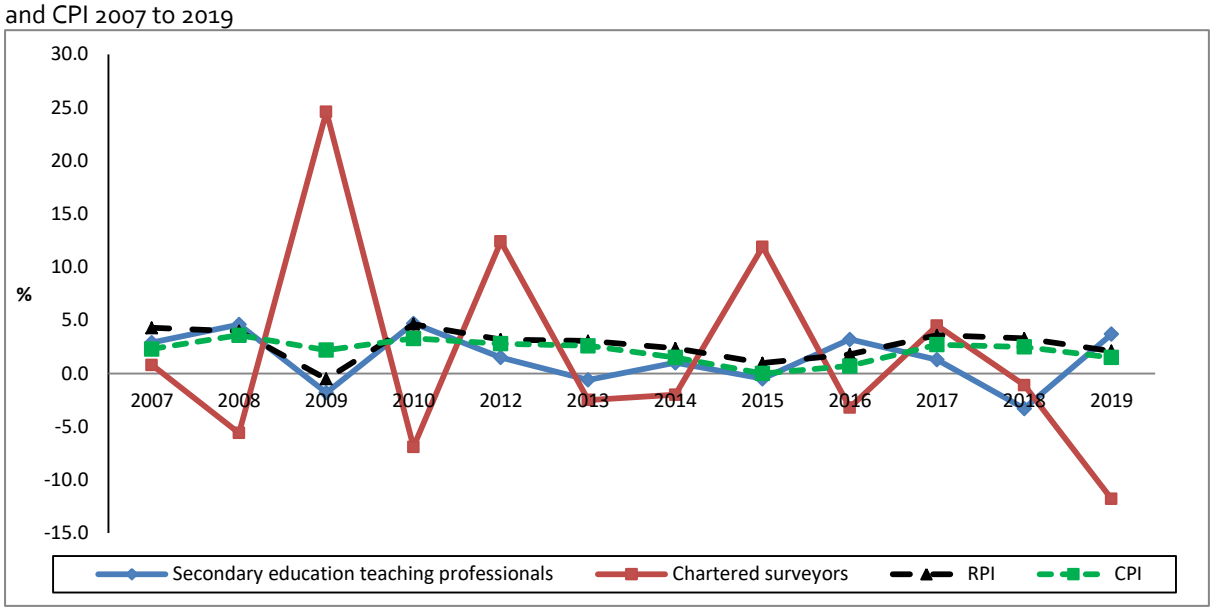
Graph 39 Percentage change in average earnings for management consultants and business analysts and teachers in Wales against RPI and CPI 2007 to 2019



Graph 40 Percentage change in median earnings for chartered surveyors and teachers in Wales against RPI and CPI 2007 to 2019



Graph 41 Percentage change in average earnings for chartered surveyors and teachers in Wales against RPI and CPI 2007 to 2019



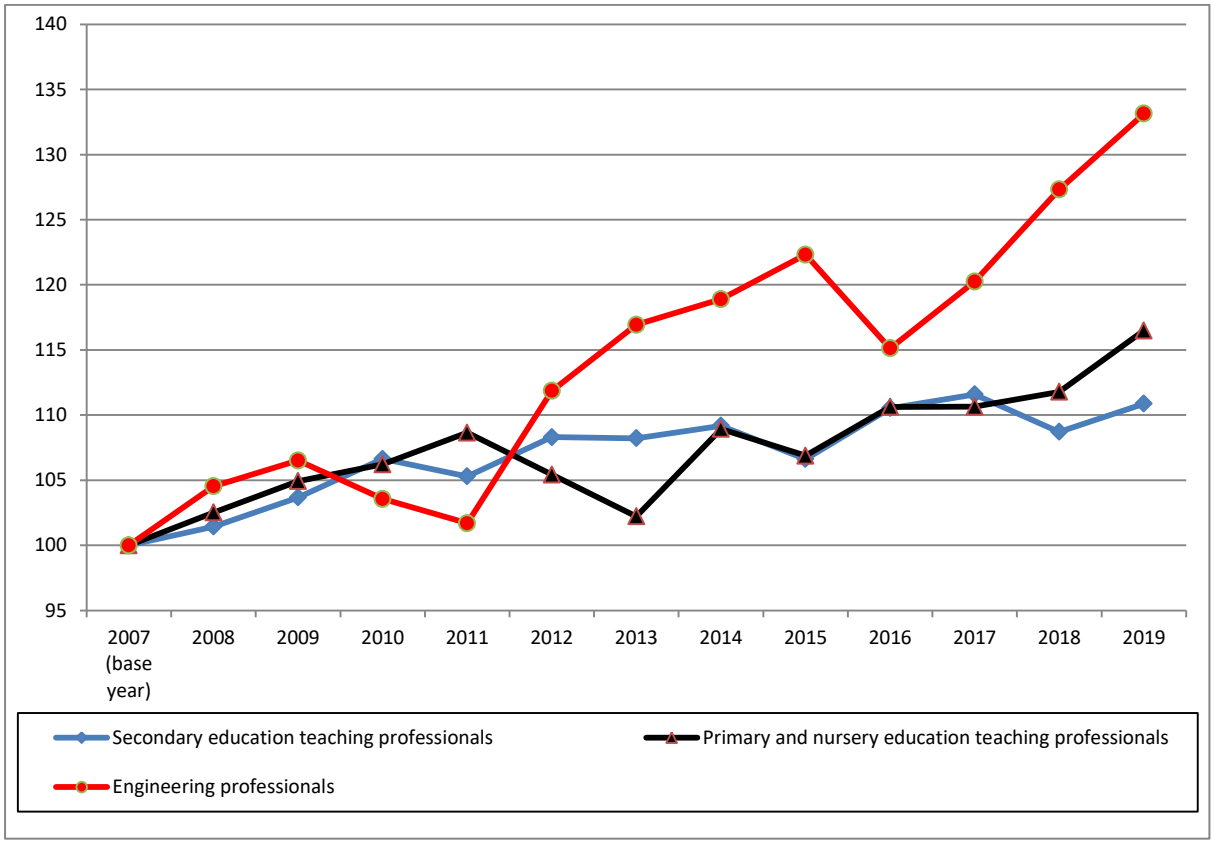
Appendix 1: Indexed median basic weekly earnings 2007 to 2019

A Science and research professionals

There was no base year data in 2007 for any of the scientific professions.

B Engineering professionals

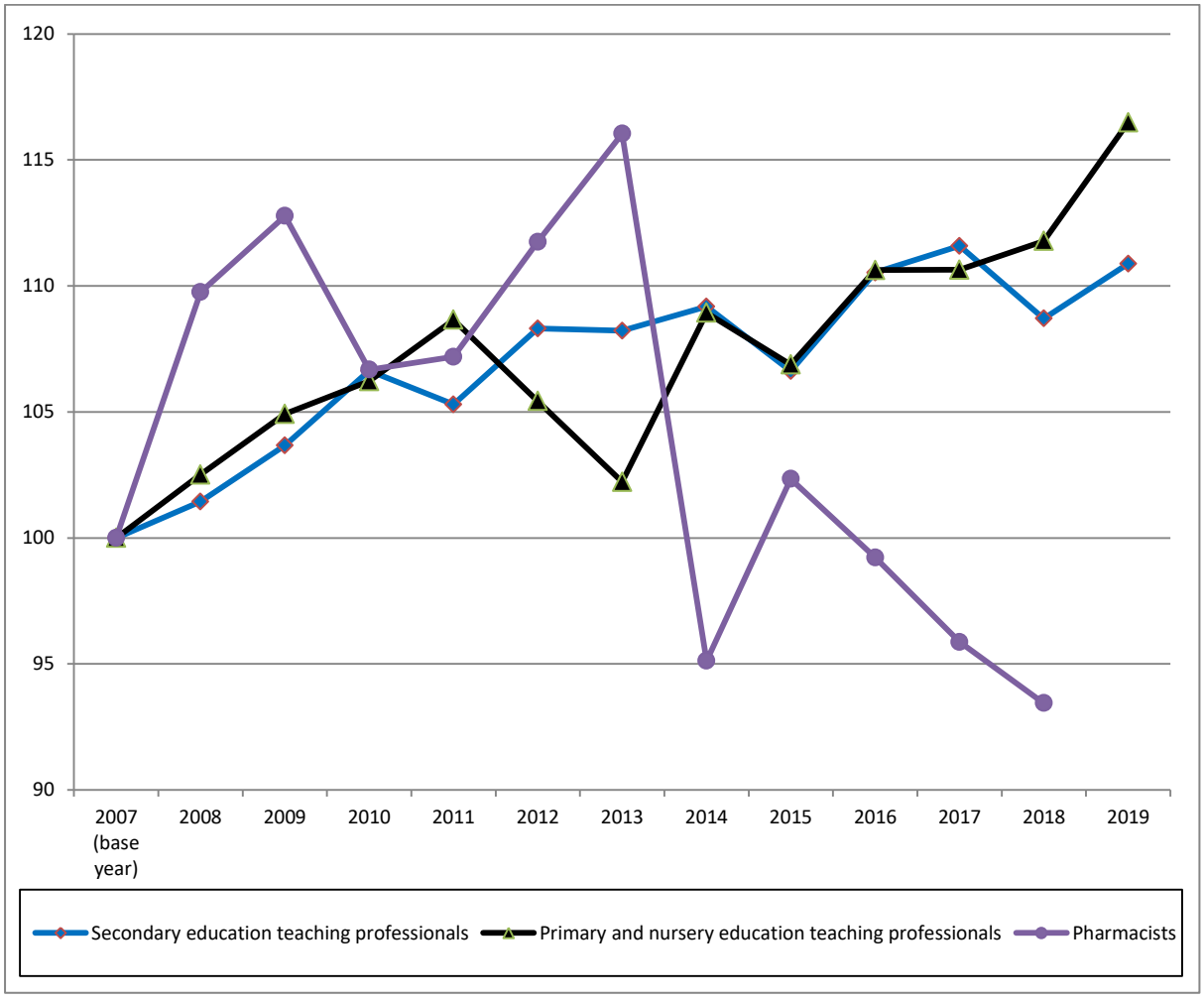
	Secondary education teaching professionals	Primary and nursery education teaching professionals	Engineering professionals
2007 (base year)	100.0	100.0	100.0
2008	101.4	102.5	104.5
2009	103.7	104.9	106.5
2010	106.6	106.2	103.6
2011	105.3	108.7	101.7
2012	108.3	105.4	111.9
2013	108.2	102.2	116.9
2014	109.2	108.9	118.9
2015	106.6	106.9	122.3
2016	110.5	110.6	115.1
2017	111.6	110.6	120.3
2018	108.7	111.8	127.3
2019	110.9	116.5	133.1



C Health professionals

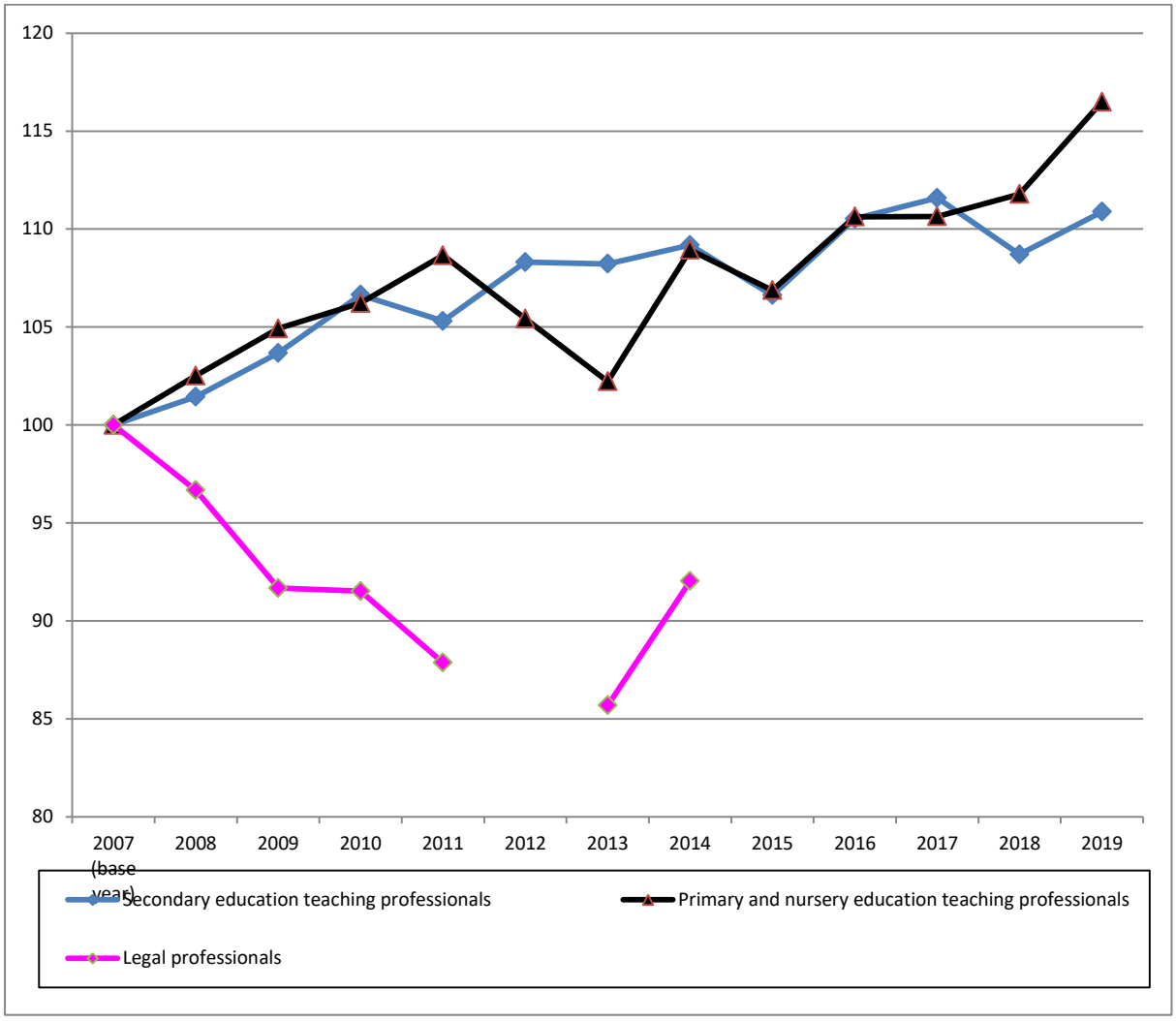
There was no base year data in 2007 for the health professional group in Wales.

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Pharmacists
2007 (base year)	100.0	100.0	100.0
2008	101.4	102.5	109.7
2009	103.7	104.9	112.8
2010	106.6	106.2	106.7
2011	105.3	108.7	107.2
2012	108.3	105.4	111.7
2013	108.2	102.2	116.0
2014	109.2	108.9	95.1
2015	106.6	106.9	102.3
2016	110.5	110.6	99.2
2017	111.6	110.6	95.9
2018	108.7	111.8	93.4
2019	110.9	116.5	



D Legal professionals

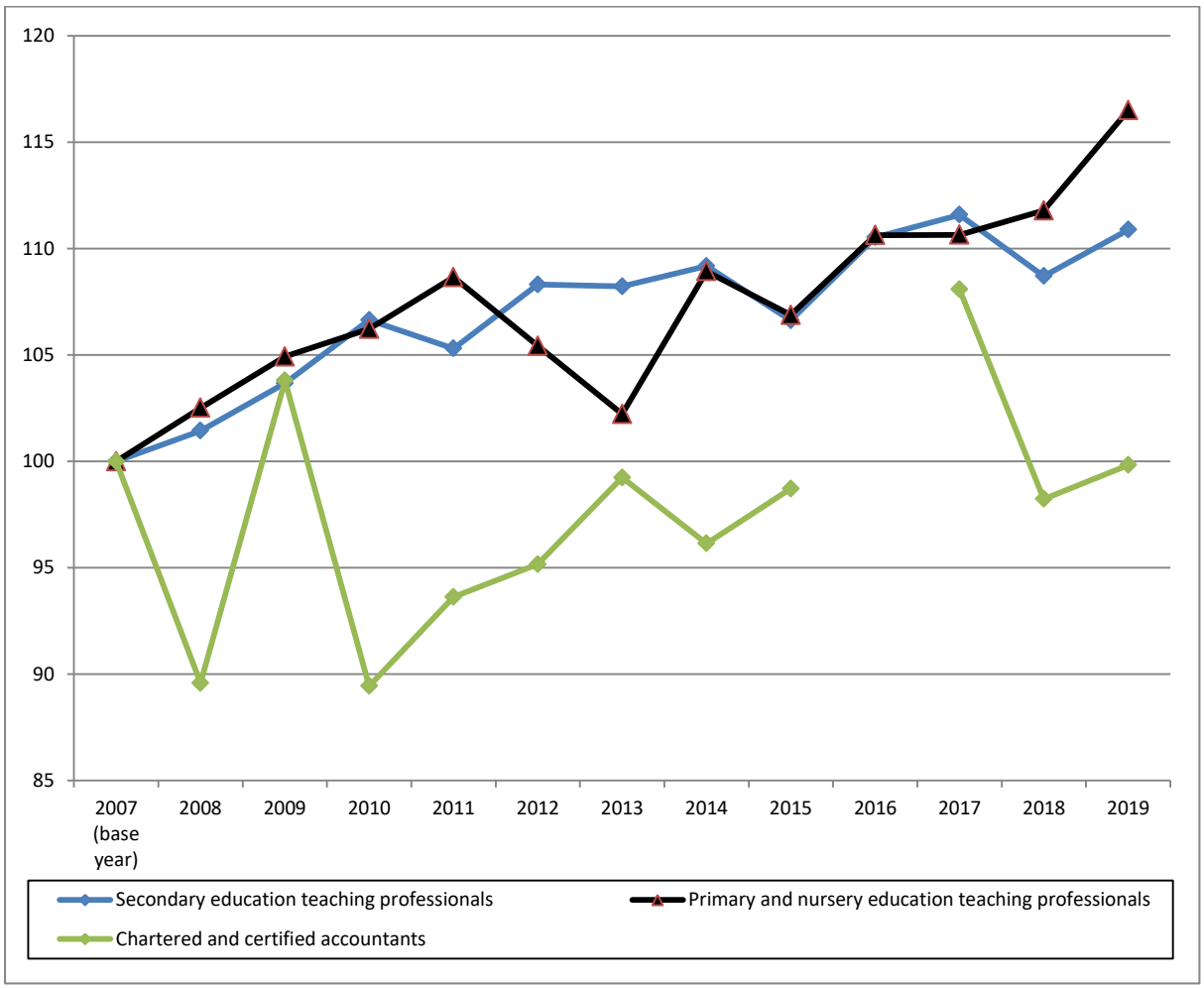
	Secondary education teaching professionals	Primary and nursery education teaching professionals	Legal professionals
2007 (base year)	100.0	100.0	100.0
2008	101.4	102.5	96.7
2009	103.7	104.9	91.7
2010	106.6	106.2	91.5
2011	105.3	108.7	87.9
2012	108.3	105.4	
2013	108.2	102.2	85.7
2014	109.2	108.9	92.0
2015	106.6	106.9	
2016	110.5	110.6	
2017	111.6	110.6	
2018	108.7	111.8	
2019	110.9	116.5	



E Business, Research and Administrative Professionals

There was no base year data in 2007 for management consultants and business analysts.

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chartered and certified accountants	Management consultants and business analysts
2007 (base year)	100.0	100.0	100.0	
2008	101.4	102.5	89.6	
2009	103.7	104.9	103.8	
2010	106.6	106.2	89.4	
2011	105.3	108.7	93.6	
2012	108.3	105.4	95.2	
2013	108.2	102.2	99.2	
2014	109.2	108.9	96.1	
2015	106.6	106.9	98.7	
2016	110.5	110.6		
2017	111.6	110.6	108.1	
2018	108.7	111.8	98.2	
2019	110.9	116.5	99.8	



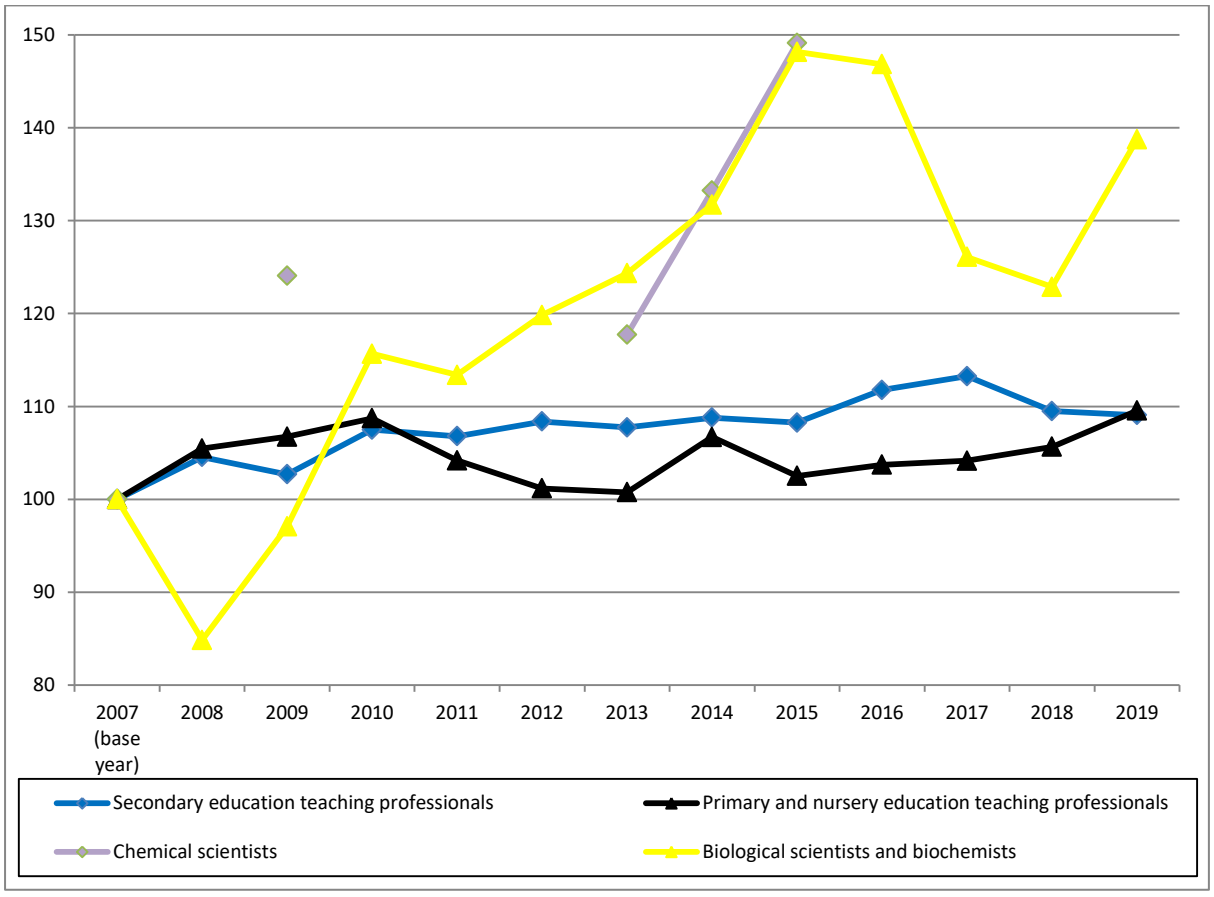
F Chartered surveyors

There was no base year data in 2007 for chartered surveyors.

Appendix 2: Indexed average basic weekly earnings 2007 to 2019

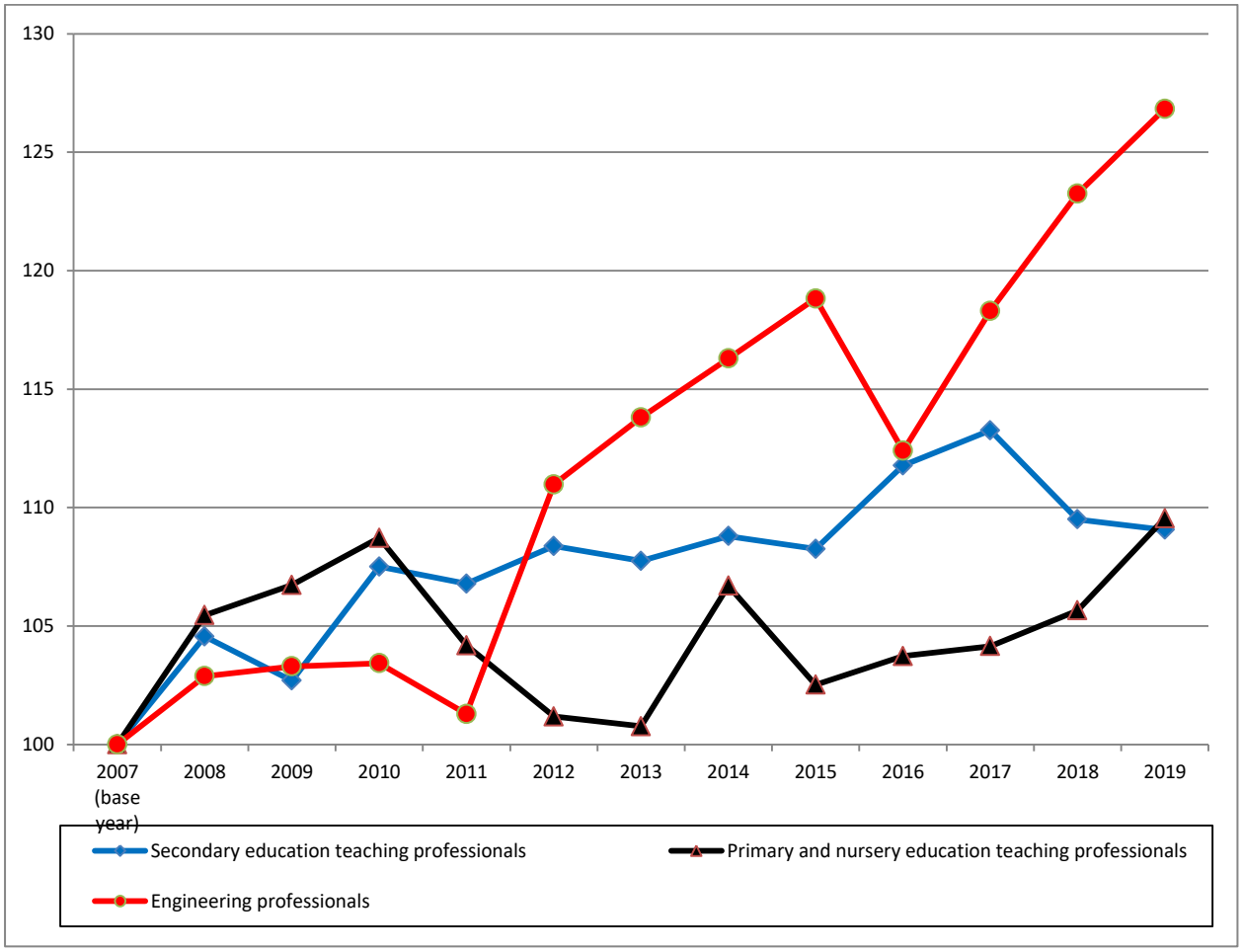
A Science and research professionals

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chemical scientists	Biological scientists and biochemists	Physical scientists
2007 (base year)	100.0	100.0	100.0	100.0	
2008	104.6	105.5		84.9	
2009	102.7	106.7	124.1	97.1	
2010	107.5	108.7		115.7	
2011	106.8	104.2		113.4	
2012	108.4	101.2		119.8	
2013	107.7	100.8	117.7	124.3	
2014	108.8	106.7	133.2	131.7	
2015	108.3	102.5	149.1	148.2	
2016	111.8	103.7		146.8	
2017	113.3	104.1		126.1	
2018	109.5	105.7		122.9	
2019	109.1	109.5		138.7	



B Engineering professionals

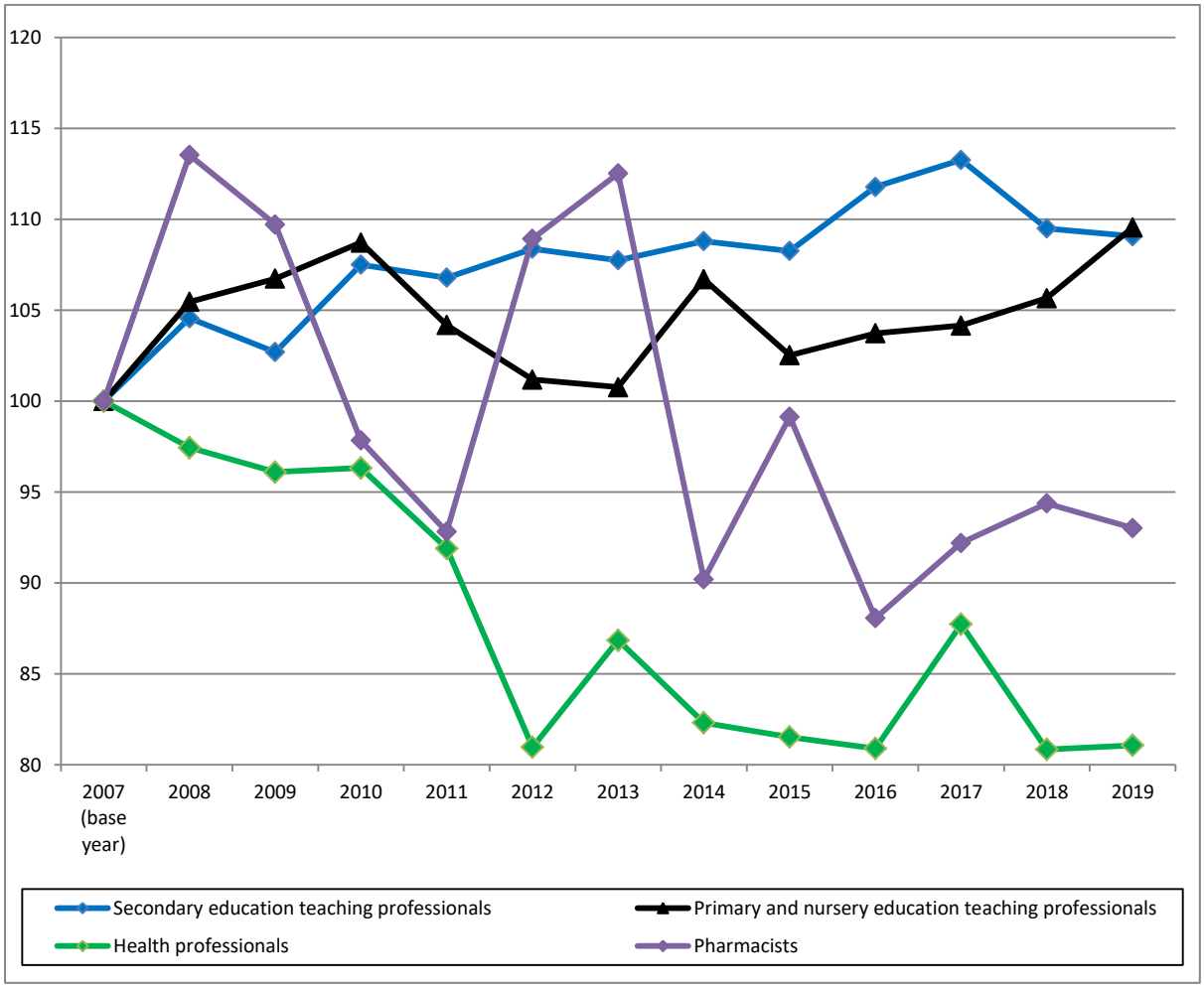
	Secondary education teaching professionals	Primary and nursery education teaching professionals	Engineering professionals
2007 (base year)	100.0	100.0	100.0
2008	104.6	105.5	102.9
2009	102.7	106.7	103.3
2010	107.5	108.7	103.4
2011	106.8	104.2	101.3
2012	108.4	101.2	111.0
2013	107.7	100.8	113.8
2014	108.8	106.7	116.3
2015	108.3	102.5	118.8
2016	111.8	103.7	112.4
2017	113.3	104.1	118.3
2018	109.5	105.7	123.3
2019	109.1	109.5	126.8



C Health professionals

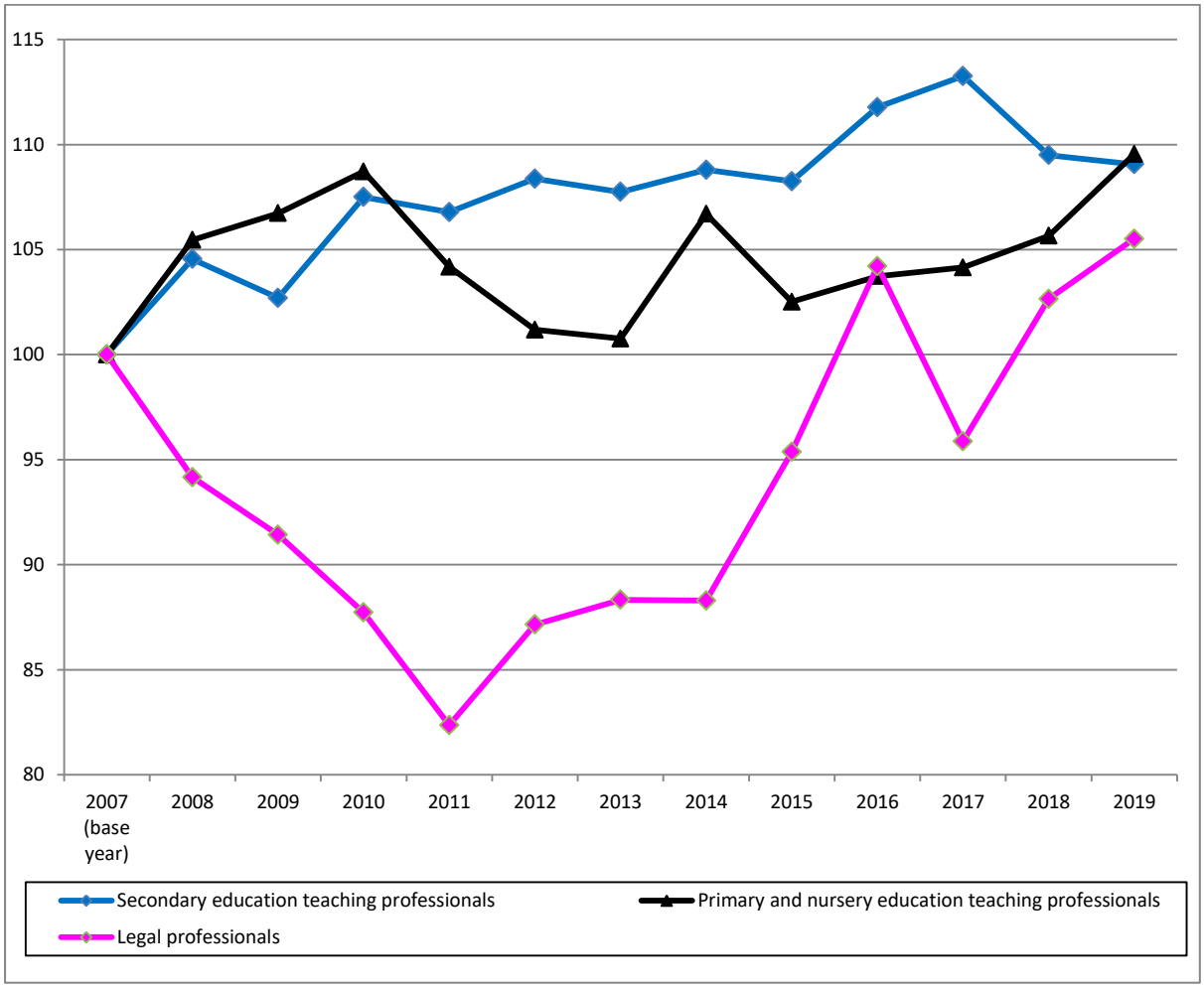
	Secondary education teaching professionals	Primary and nursery education teaching professionals	Health professionals*	Pharmacists
2007 (base year)	100.0	100.0	100.0	100.0
2008	104.6	105.5	97.4	113.5
2009	102.7	106.7	96.1	109.7
2010	107.5	108.7	96.3	97.8
2011	106.8	104.2	91.9	92.8
2012	108.4	101.2	81.0	108.9
2013	107.7	100.8	86.9	112.5
2014	108.8	106.7	82.3	90.2
2015	108.3	102.5	81.5	99.1
2016	111.8	103.7	80.9	88.1
2017	113.3	104.1	87.7	92.2
2018	109.5	105.7	80.9	94.4
2019	109.1	109.5	81.1	93.0

*Definition of health professionals group changed in 2010.



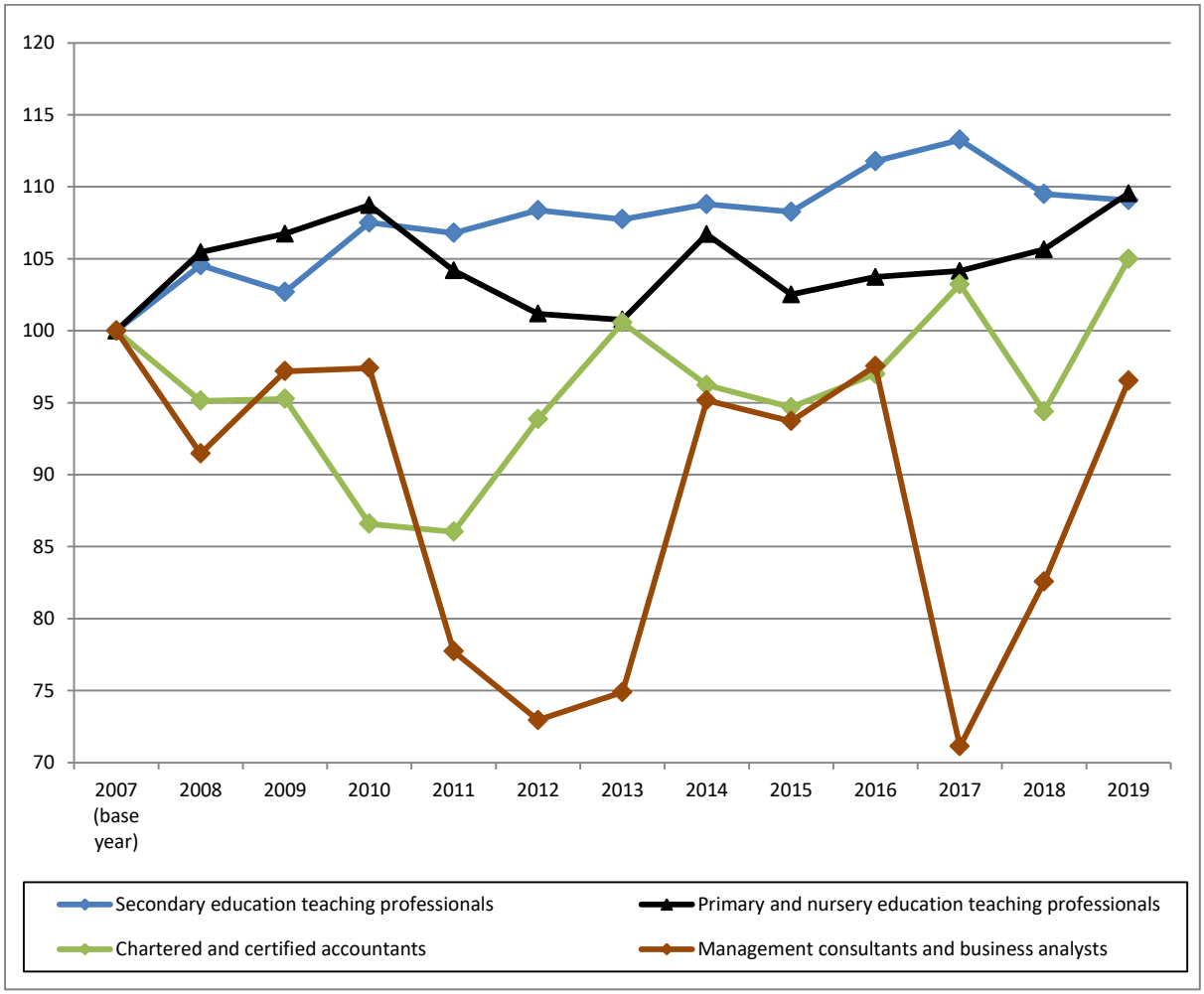
D Legal professionals

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Legal professionals
2007 (base year)	100.0	100.0	100.0
2008	104.6	105.5	94.2
2009	102.7	106.7	91.4
2010	107.5	108.7	87.7
2011	106.8	104.2	82.4
2012	108.4	101.2	87.1
2013	107.7	100.8	88.3
2014	108.8	106.7	88.3
2015	108.3	102.5	95.4
2016	111.8	103.7	104.2
2017	113.3	104.1	95.9
2018	109.5	105.7	102.7
2019	109.1	109.5	105.5



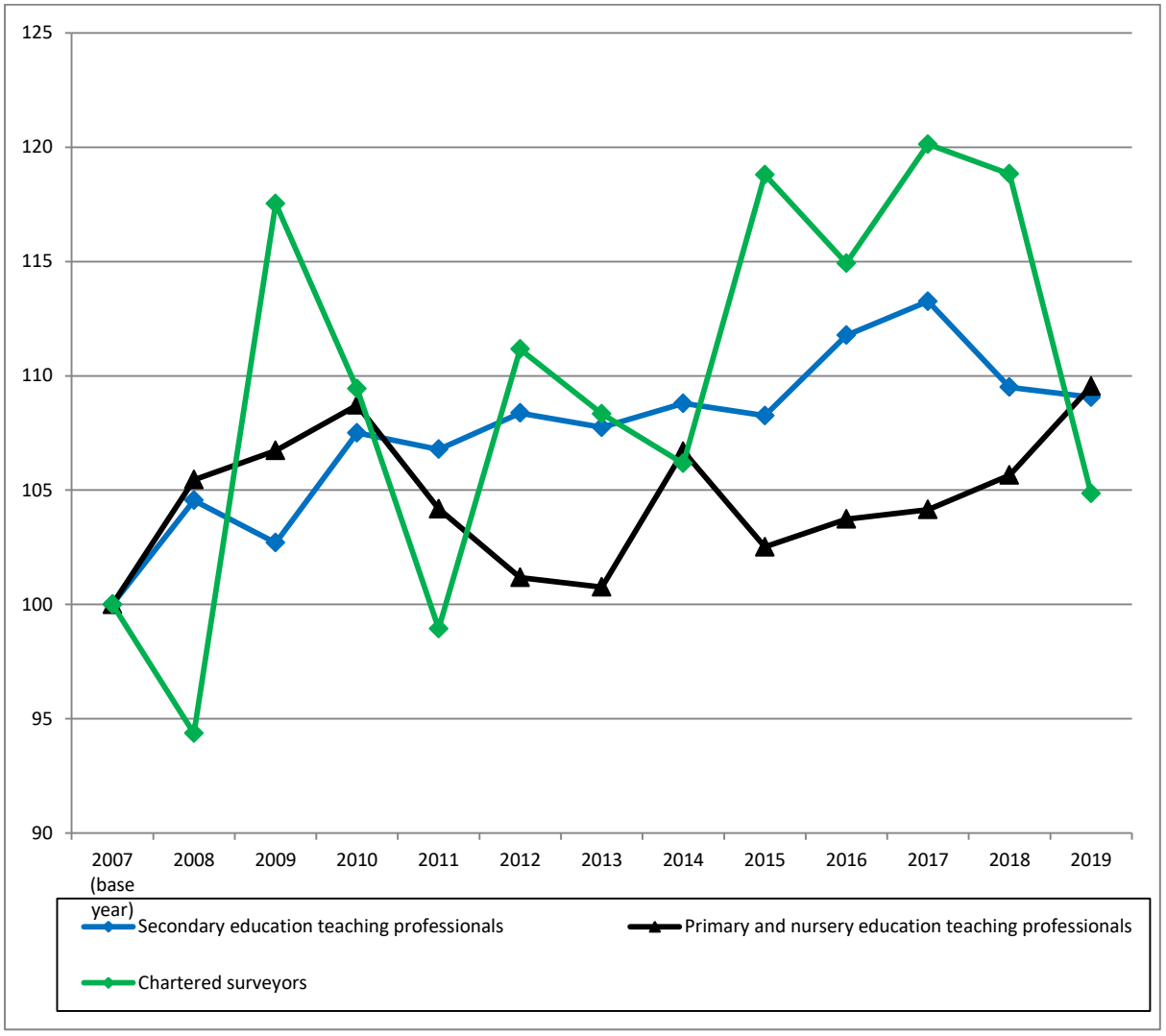
E Business, Research and Administrative professionals

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chartered and certified accountants	Management consultants and business analysts
2007 (base year)	100.0	100.0	100.0	100.0
2008	104.6	105.5	95.1	91.5
2009	102.7	106.7	95.3	97.2
2010	107.5	108.7	86.6	97.4
2011	106.8	104.2	86.0	77.7
2012	108.4	101.2	93.9	73.0
2013	107.7	100.8	100.6	74.9
2014	108.8	106.7	96.2	95.2
2015	108.3	102.5	94.7	93.7
2016	111.8	103.7	97.0	97.5
2017	113.3	104.1	103.2	71.1
2018	109.5	105.7	94.4	82.6
2019	109.1	109.5	105.0	96.5



F Chartered Surveyors

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chartered surveyors
2007 (base year)	100.0	100.0	100.0
2008	104.6	105.5	94.4
2009	102.7	106.7	117.5
2010	107.5	108.7	109.4
2011	106.8	104.2	98.9
2012	108.4	101.2	111.2
2013	107.7	100.8	108.3
2014	108.8	106.7	106.2
2015	108.3	102.5	118.8
2016	111.8	103.7	114.9
2017	113.3	104.1	120.1
2018	109.5	105.7	118.8
2019	109.1	109.5	104.9

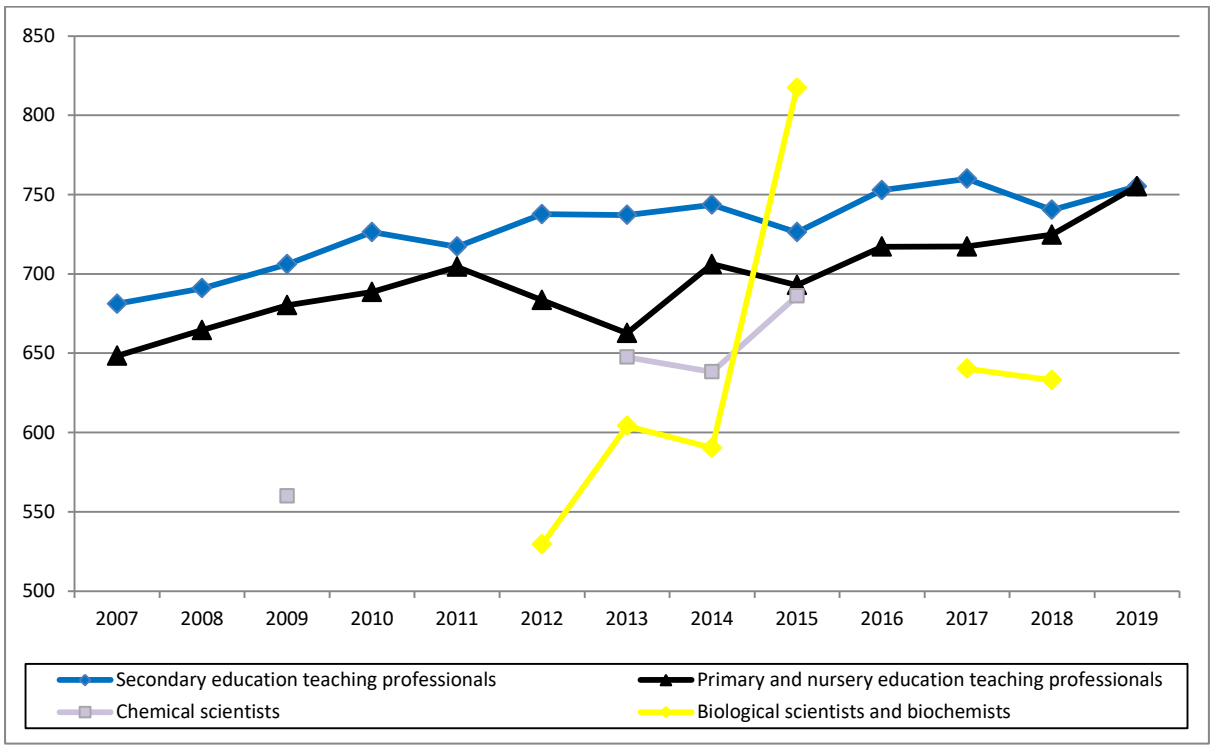


Appendix 3: Median basic weekly earnings (ASHE) 2007 to 2019

A Science and research professionals

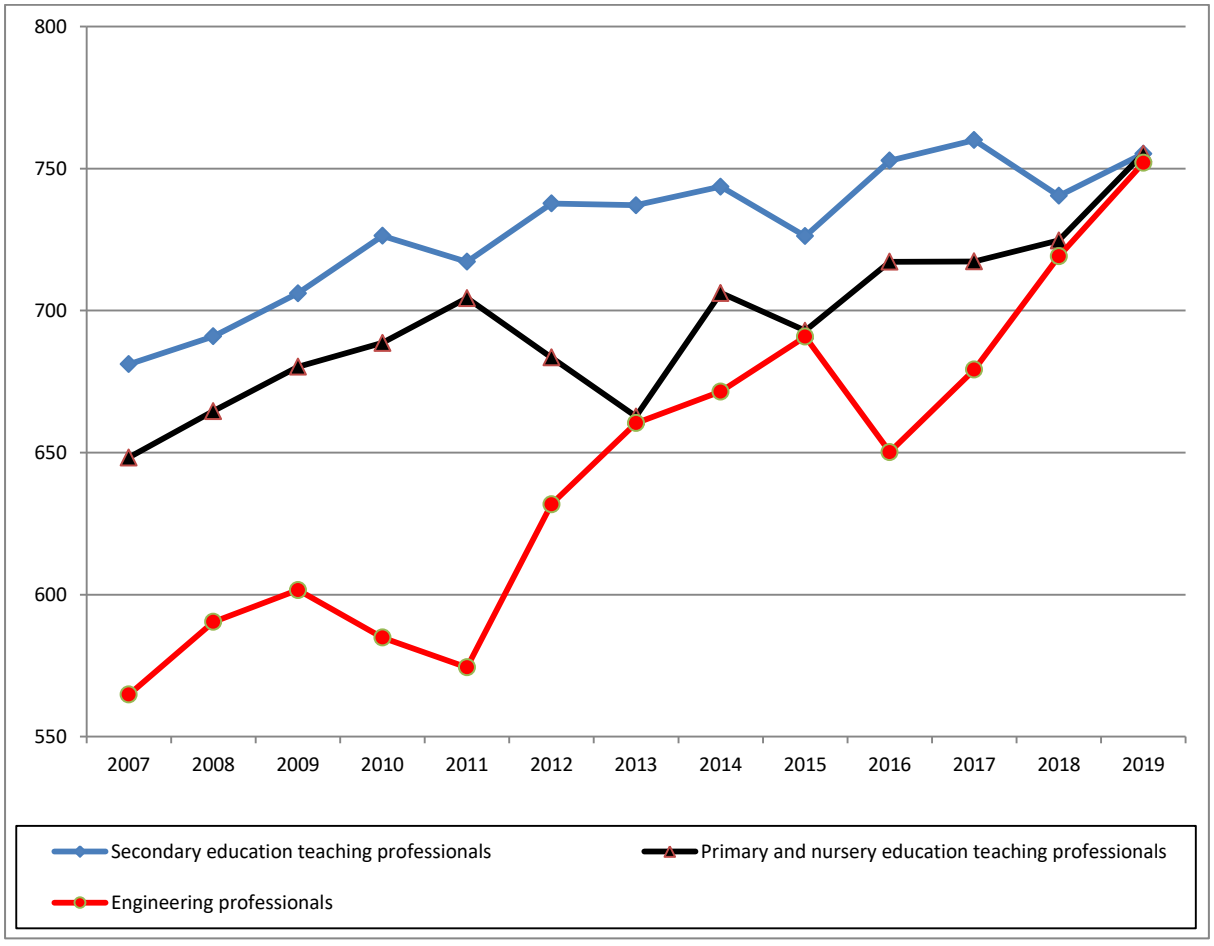
There were insufficient sample sizes for physical scientists in all years. The other scientific professions only had sufficient data in some years with only relatively small sample sizes in the years that data was available. This probably explains the volatility in the results below.

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chemical scientists	Biological scientists and biochemists	Physical scientists
2007	681.1	648.3			
2008	690.9	664.6			
2009	706.1	680.2	559.9	483.2	
2010	726.3	688.6			
2011	717.2	704.4			
2012	737.7	683.5		529.4	
2013	737.1	662.7	647.5	604.1	
2014	743.6	706.2	638.2	590.3	
2015	726.2	692.9	686.1	817.4	
2016	752.8	717.2			
2017	760.0	717.3		640.3	
2018	740.4	724.7		633.0	
2019	755.2	755.2			



B Engineering professionals

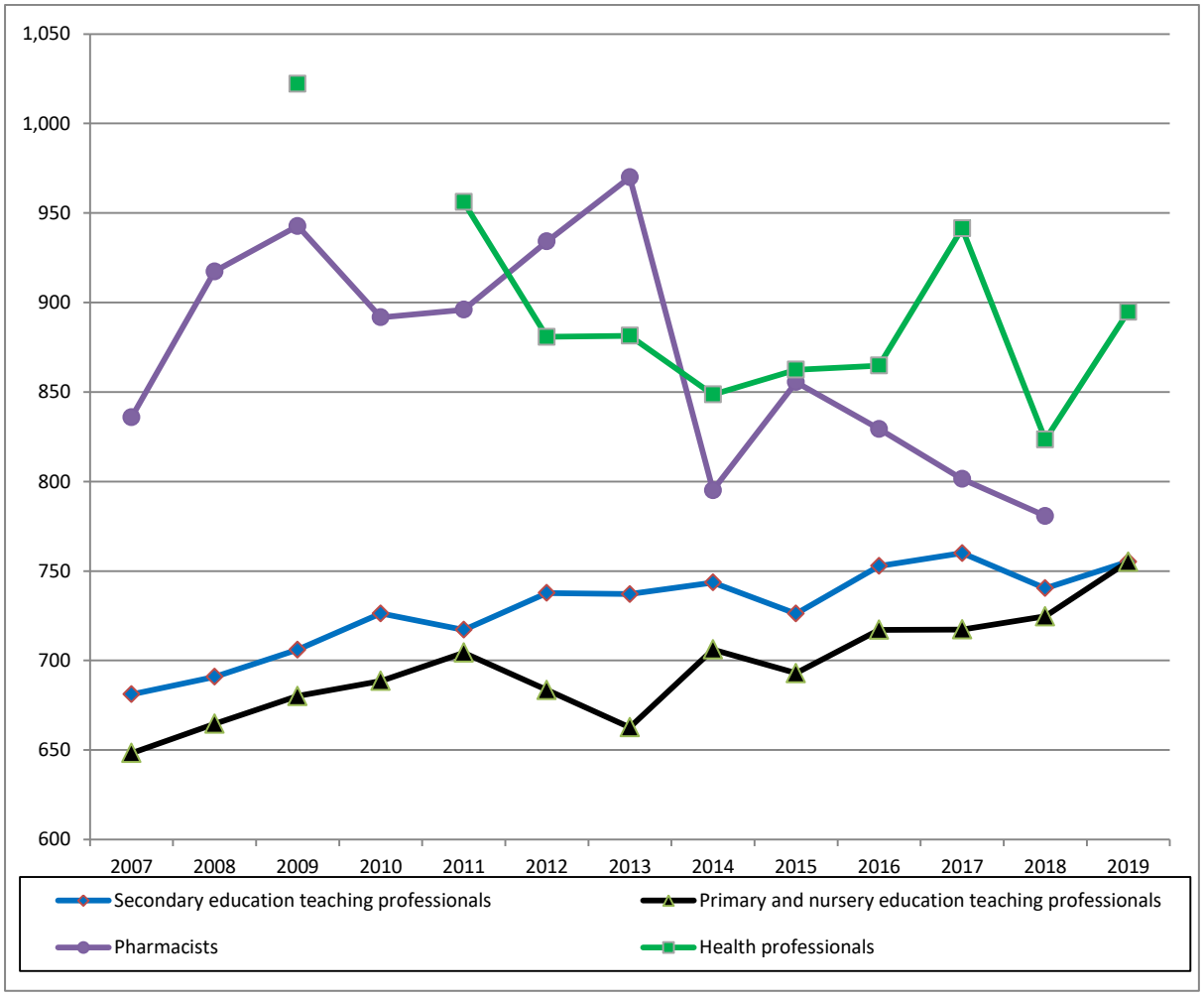
	Secondary education teaching professionals	Primary and nursery education teaching professionals	Engineering professionals
2007	681.1	648.3	564.8
2008	690.9	664.6	590.4
2009	706.1	680.2	601.6
2010	726.3	688.6	584.9
2011	717.2	704.4	574.4
2012	737.7	683.5	631.8
2013	737.1	662.7	660.4
2014	743.6	706.2	671.5
2015	726.2	692.9	690.8
2016	752.8	717.2	650.2
2017	760.0	717.3	679.2
2018	740.4	724.7	719.1
2019	755.2	755.2	752.0



C Health professionals

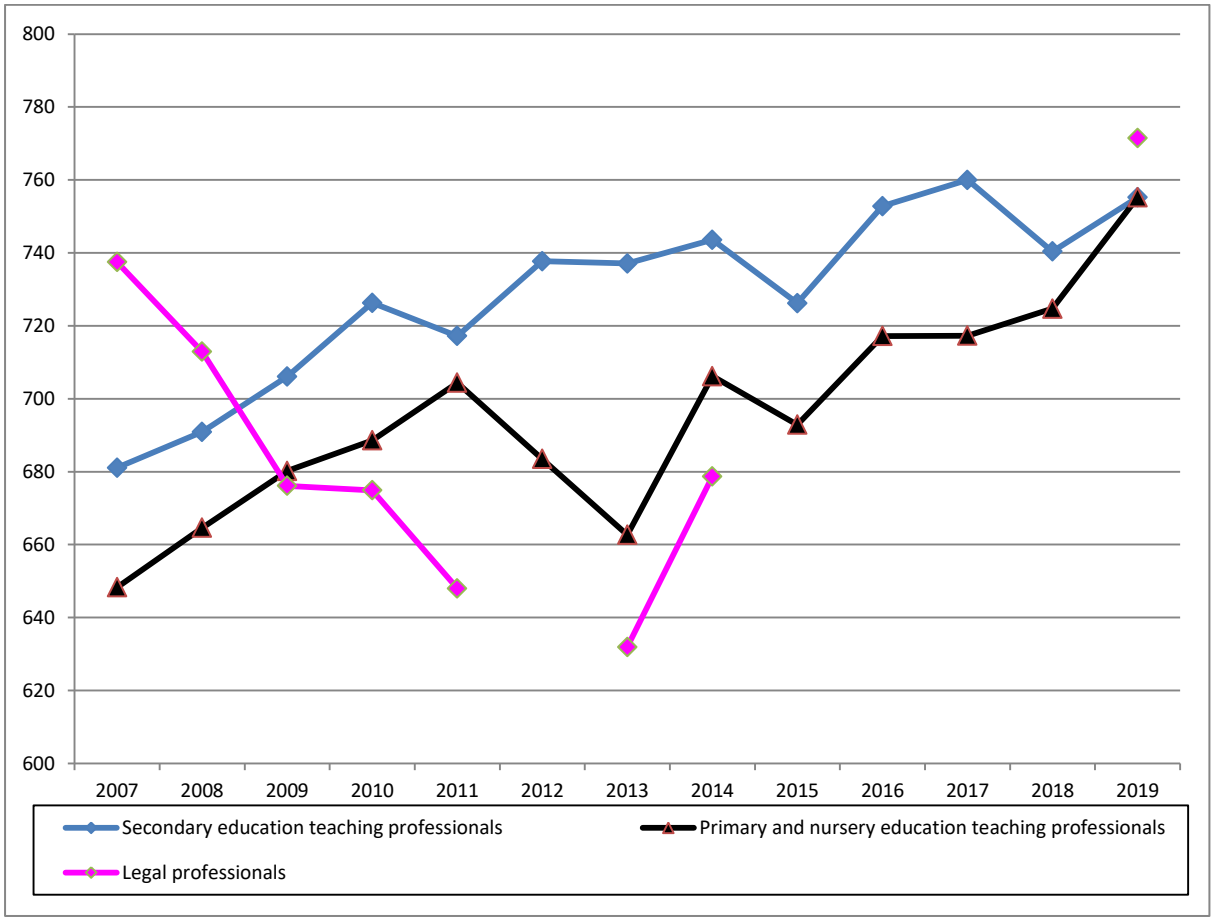
	Secondary education teaching professionals	Primary and nursery education teaching professionals	Health professionals*	Pharmacists
2007	681.1	648.3		835.9
2008	690.9	664.6		917.4
2009	706.1	680.2	1,022.2	942.7
2010	726.3	688.6		891.7
2011	717.2	704.4	956.1	896.0
2012	737.7	683.5	880.8	934.1
2013	737.1	662.7	881.4	970.0
2014	743.6	706.2	848.6	795.1
2015	726.2	692.9	862.5	855.5
2016	752.8	717.2	864.8	829.4
2017	760.0	717.3	941.4	801.4
2018	740.4	724.7	823.4	780.8
2019	755.2	755.2	894.8	

*Definition of health professionals group changed in 2010.



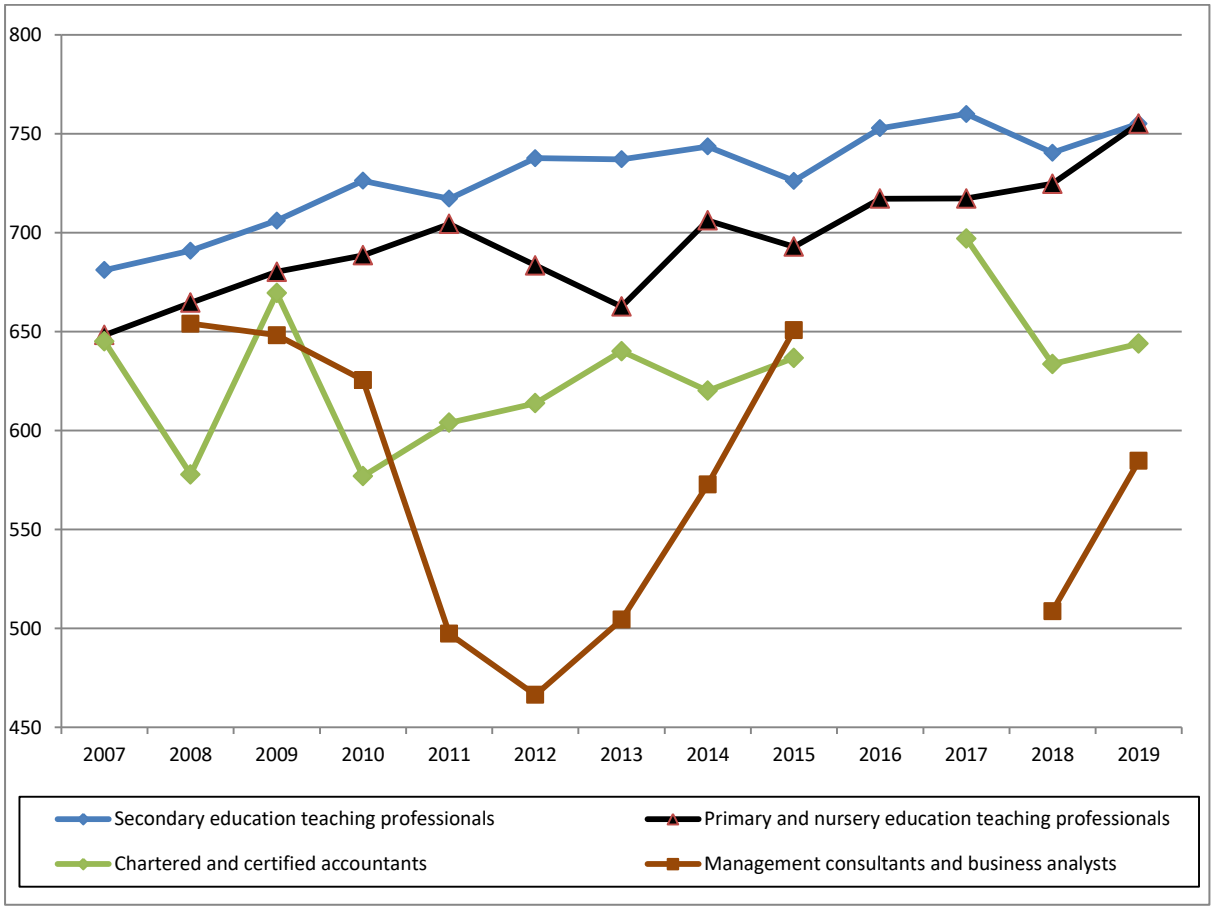
D Legal professionals

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Legal professionals
2007	681.1	648.3	737.5
2008	690.9	664.6	712.9
2009	706.1	680.2	676.1
2010	726.3	688.6	674.9
2011	717.2	704.4	648.0
2012	737.7	683.5	
2013	737.1	662.7	631.9
2014	743.6	706.2	678.7
2015	726.2	692.9	
2016	752.8	717.2	
2017	760.0	717.3	
2018	740.4	724.7	
2019	755.2	755.2	771.5



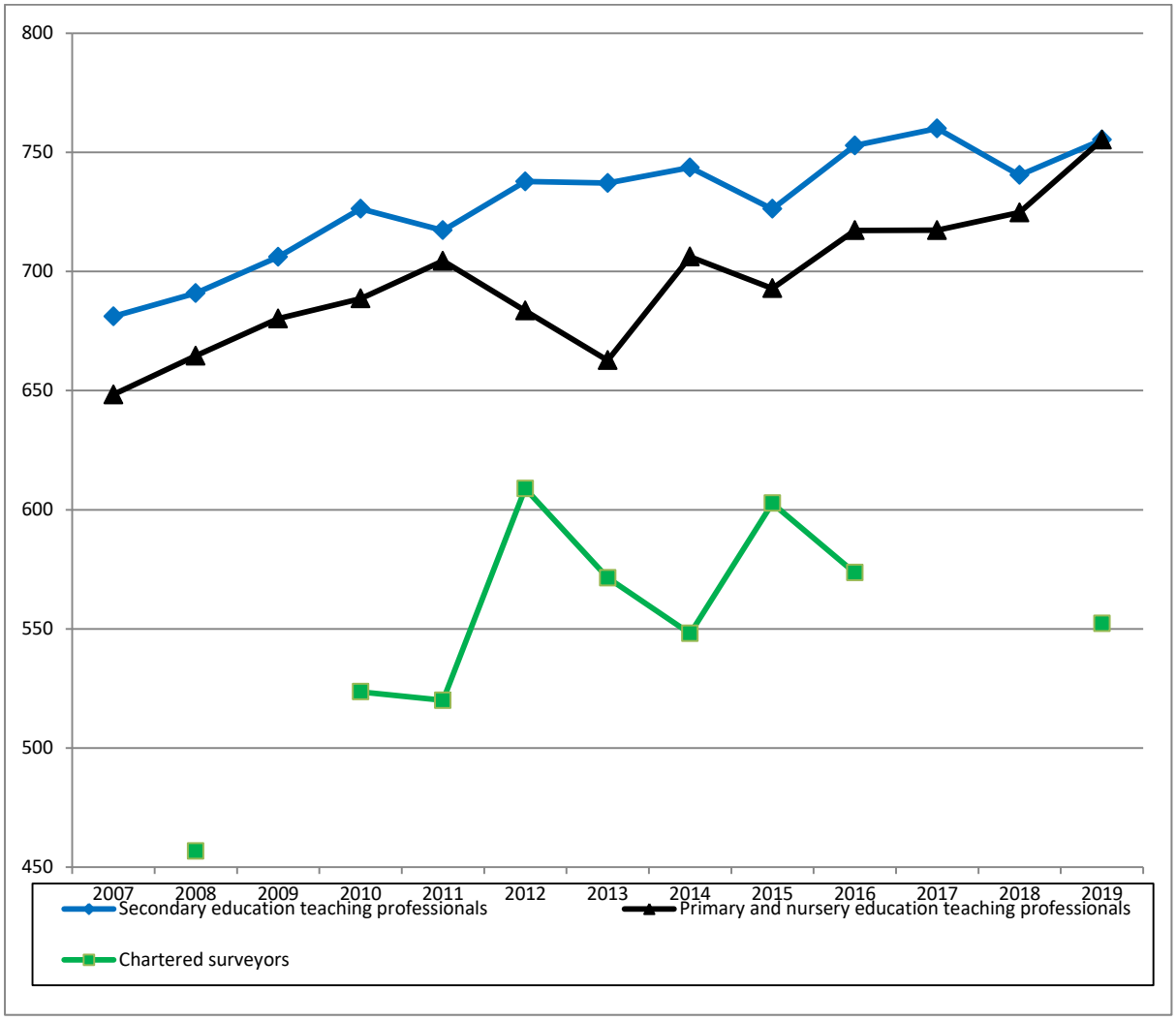
E Business, Research and Administrative professionals

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chartered and certified accountants	Management consultants and business analysts
2007	681.1	648.3	645.0	
2008	690.9	664.6	577.8	654.0
2009	706.1	680.2	669.5	648.2
2010	726.3	688.6	576.9	625.5
2011	717.2	704.4	603.9	497.3
2012	737.7	683.5	613.8	466.4
2013	737.1	662.7	640.1	504.4
2014	743.6	706.2	620.1	572.7
2015	726.2	692.9	636.7	650.8
2016	752.8	717.2		
2017	760.0	717.3	697.1	
2018	740.4	724.7	633.6	508.7
2019	755.2	755.2	643.9	584.7



F Chartered Surveyors

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chartered surveyors
2007	681.1	648.3	
2008	690.9	664.6	456.7
2009	706.1	680.2	
2010	726.3	688.6	523.6
2011	717.2	704.4	520.0
2012	737.7	683.5	608.9
2013	737.1	662.7	571.4
2014	743.6	706.2	548.1
2015	726.2	692.9	602.7
2016	752.8	717.2	573.6
2017	760.0	717.3	
2018	740.4	724.7	
2019	755.2	755.2	552.3

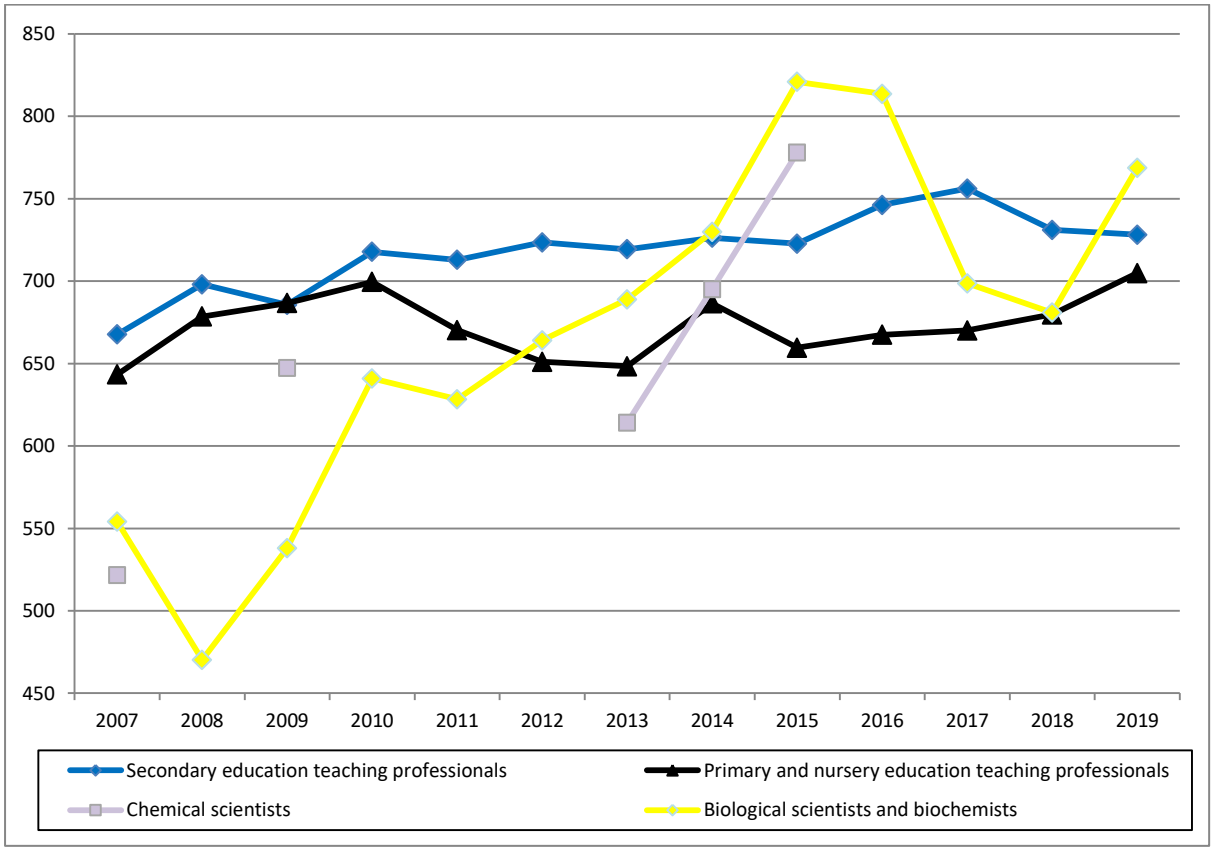


Appendix 4: Average basic weekly earnings (ASHE) 2007 to 2019

A Science and research professionals (average basic pay £pw)

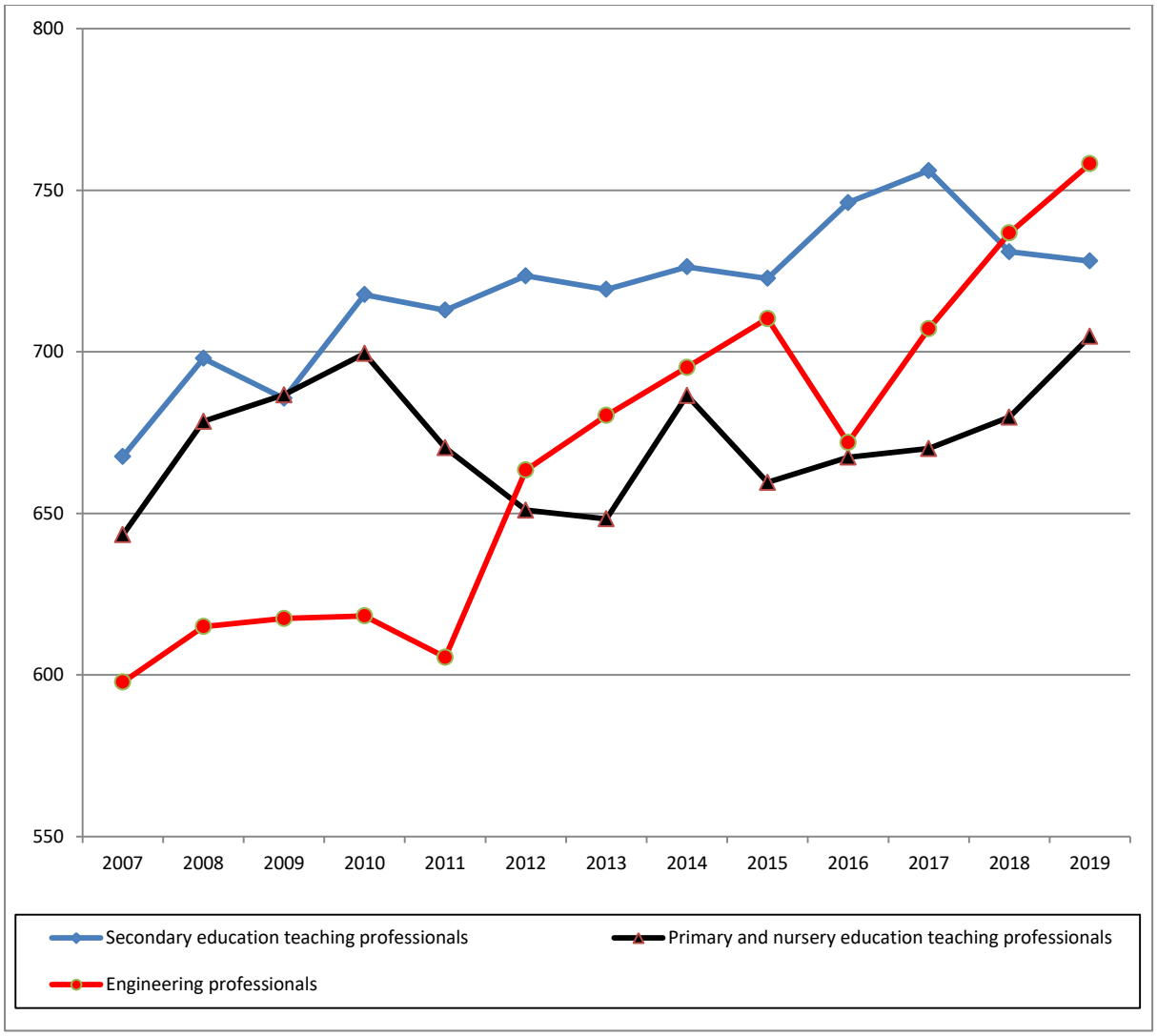
There were insufficient sample sizes for physical scientists in all years. The other scientific professions only had sufficient data in some years with only relatively small sample sizes in the years data was available. This probably explains the volatility in the results below.

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chemical scientists	Biological scientists and biochemists	Physical scientists
2007	667.6	643.4	521.7	554.1	
2008	698.0	678.5		470.2	
2009	685.6	686.7	647.3	537.9	
2010	717.7	699.5		640.9	
2011	712.9	670.3		628.3	
2012	723.5	651.0		664.0	
2013	719.3	648.3	614.1	688.9	
2014	726.3	686.5	695.1	729.9	
2015	722.7	659.6	777.9	820.9	
2016	746.2	667.4		813.6	
2017	756.1	670.1		698.6	
2018	731.0	679.8		680.8	
2019	728.1	704.8		768.7	



B Engineering professionals (average basic pay £pw)

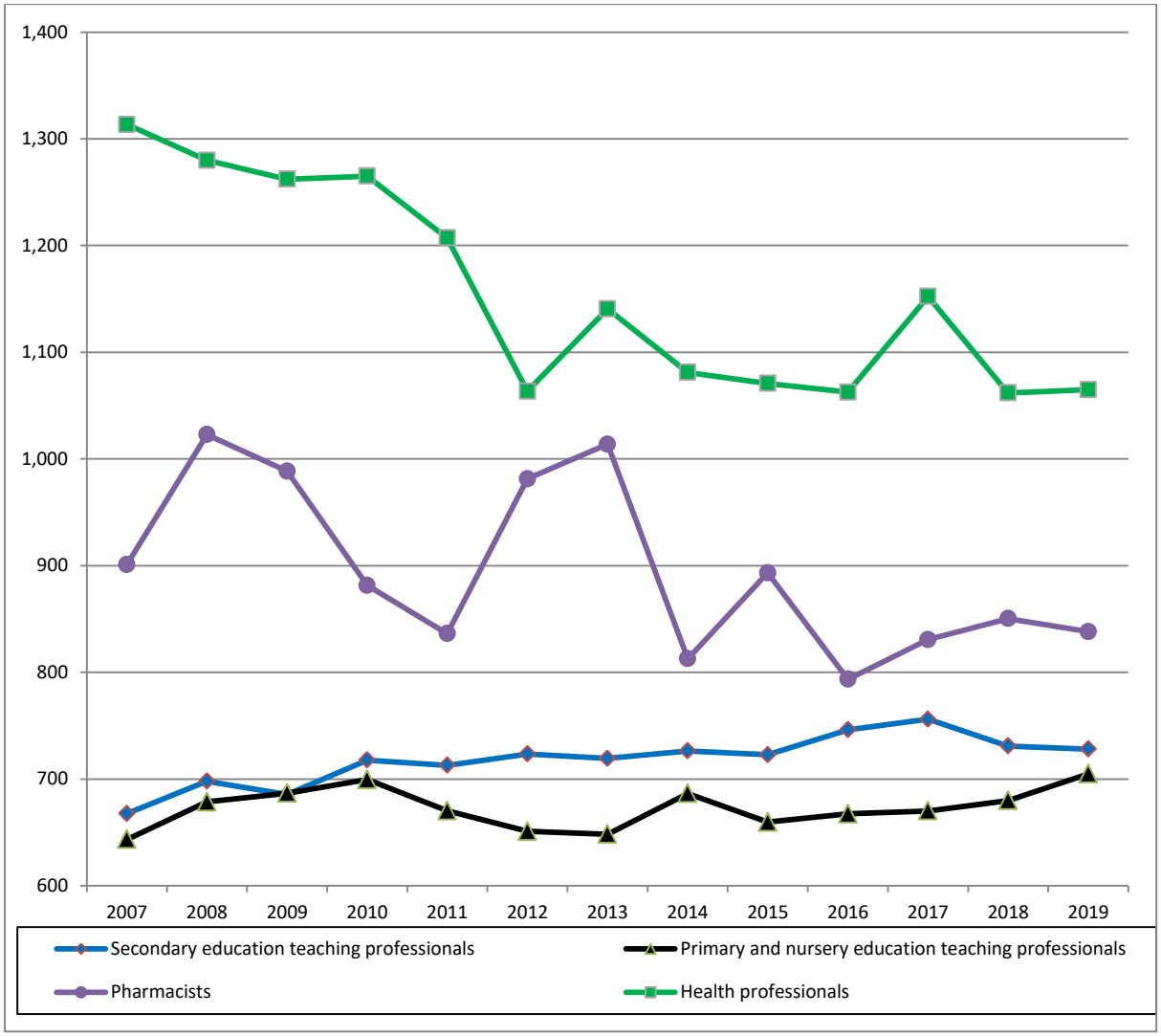
	Secondary education teaching professionals	Primary and nursery education teaching professionals	Engineering professionals
2007	667.6	643.4	597.8
2008	698.0	678.5	615.0
2009	685.6	686.7	617.5
2010	717.7	699.5	618.3
2011	712.9	670.3	605.5
2012	723.5	651.0	663.4
2013	719.3	648.3	680.3
2014	726.3	686.5	695.2
2015	722.7	659.6	710.3
2016	746.2	667.4	671.9
2017	756.1	670.1	707.2
2018	731.0	679.8	736.8
2019	728.1	704.8	758.2



C Health professionals (average basic pay £pw)

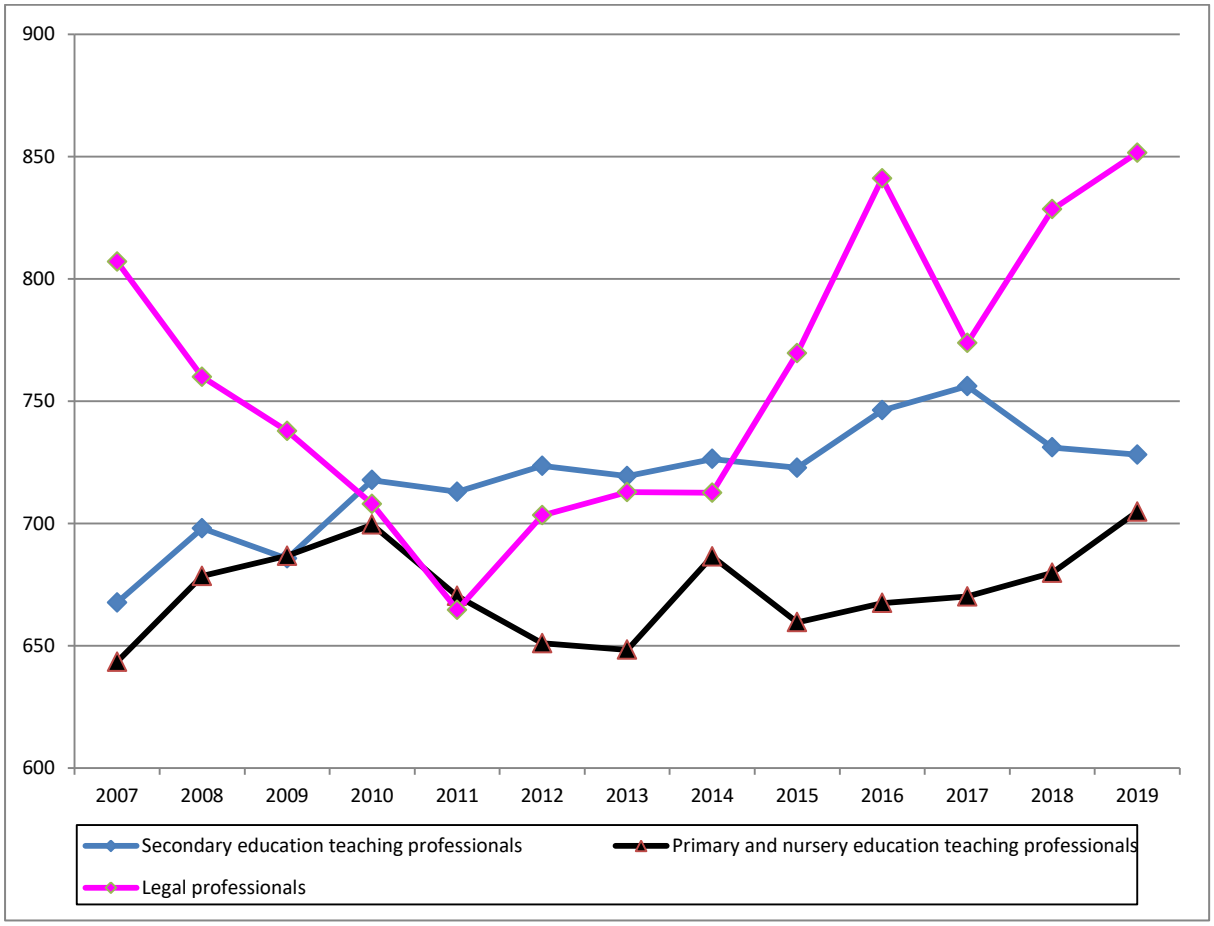
	Secondary education teaching professionals	Primary and nursery education teaching professionals	Health professionals*	Pharmacists
2007	667.6	643.4	1,313.4	901.0
2008	698.0	678.5	1,279.8	1,022.9
2009	685.6	686.7	1,262.2	988.5
2010	717.7	699.5	1,265.1	881.5
2011	712.9	670.3	1,207.1	836.3
2012	723.5	651.0	1,063.5	981.4
2013	719.3	648.3	1,140.7	1,013.8
2014	726.3	686.5	1,081.1	812.7
2015	722.7	659.6	1,070.8	893.2
2016	746.2	667.4	1,062.6	793.5
2017	756.1	670.1	1,152.3	830.7
2018	731.0	679.8	1,061.9	850.3
2019	728.1	704.8	1,064.9	838.1

*Definition of health professionals group changed in 2010.



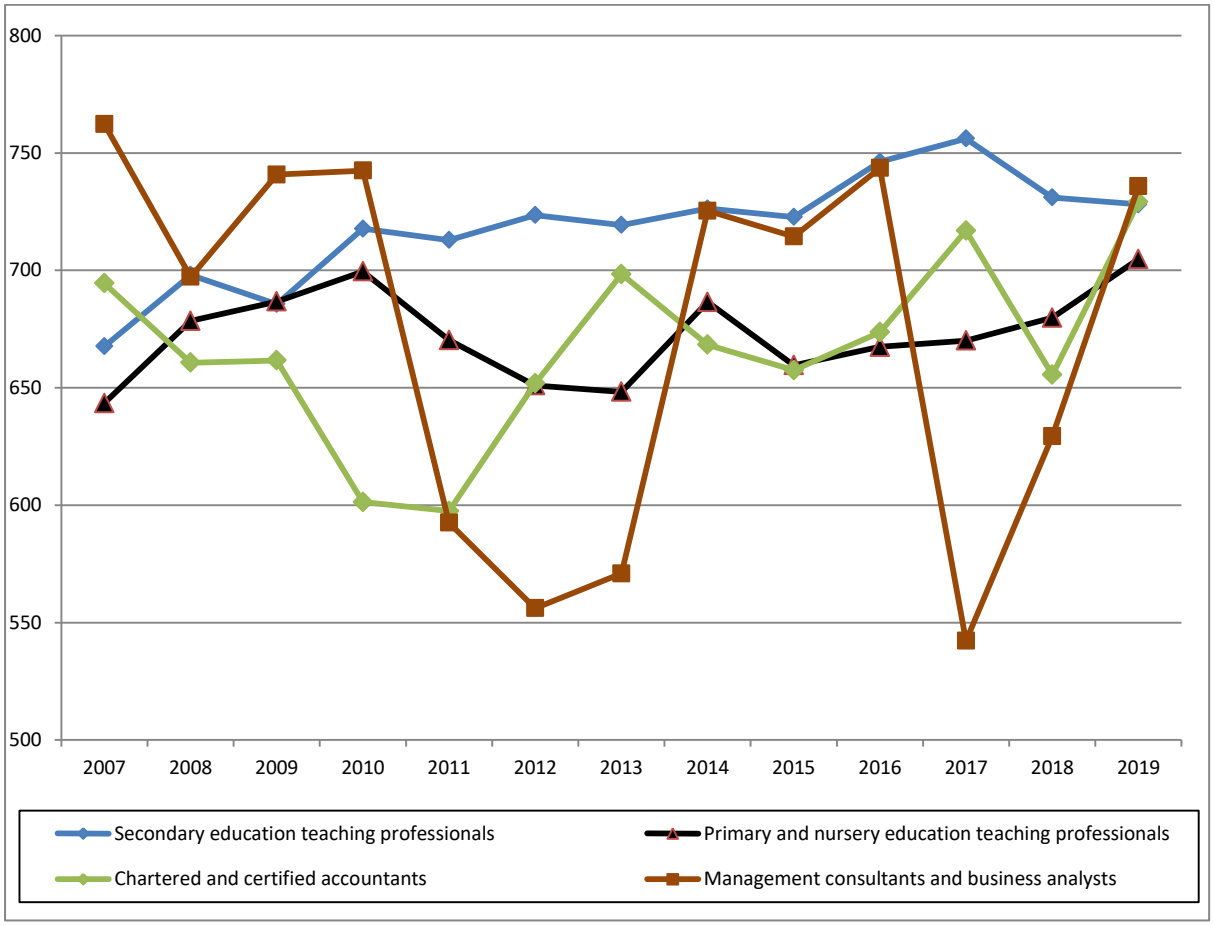
D Legal professionals (average basic pay £pw)

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Legal professionals
2007	667.6	643.4	807.0
2008	698.0	678.5	759.9
2009	685.6	686.7	737.8
2010	717.7	699.5	707.9
2011	712.9	670.3	664.6
2012	723.5	651.0	703.3
2013	719.3	648.3	712.8
2014	726.3	686.5	712.5
2015	722.7	659.6	769.6
2016	746.2	667.4	841.0
2017	756.1	670.1	773.7
2018	731.0	679.8	828.4
2019	728.1	704.8	851.5



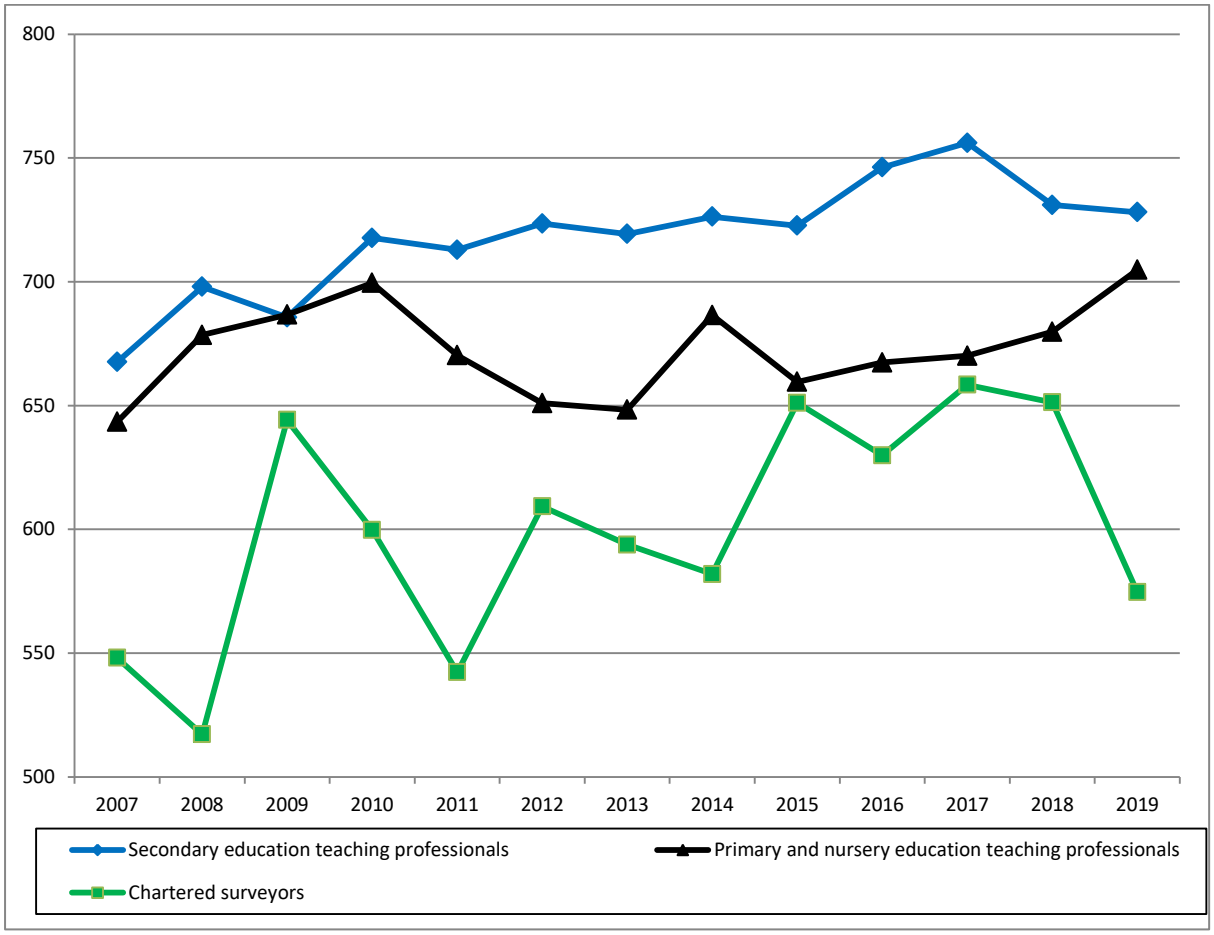
E Business, Research and Administrative professionals ((average basic pay £pw)

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chartered and certified accountants	Management consultants and business analysts
2007	667.6	643.4	694.5	762.3
2008	698.0	678.5	660.7	697.2
2009	685.6	686.7	661.6	740.8
2010	717.7	699.5	601.3	742.5
2011	712.9	670.3	597.5	592.5
2012	723.5	651.0	651.8	556.1
2013	719.3	648.3	698.4	570.9
2014	726.3	686.5	668.3	725.4
2015	722.7	659.6	657.5	714.4
2016	746.2	667.4	673.6	743.6
2017	756.1	670.1	716.9	542.2
2018	731.0	679.8	655.5	629.4
2019	728.1	704.8	729.1	735.8



F Chartered Surveyors (average basic pay £pw)

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chartered surveyors
2007	667.6	643.4	548.1
2008	698.0	678.5	517.2
2009	685.6	686.7	644.2
2010	717.7	699.5	599.8
2011	712.9	670.3	542.3
2012	723.5	651.0	609.3
2013	719.3	648.3	593.8
2014	726.3	686.5	581.9
2015	722.7	659.6	651.1
2016	746.2	667.4	629.9
2017	756.1	670.1	658.4
2018	731.0	679.8	651.3
2019	728.1	704.8	574.7



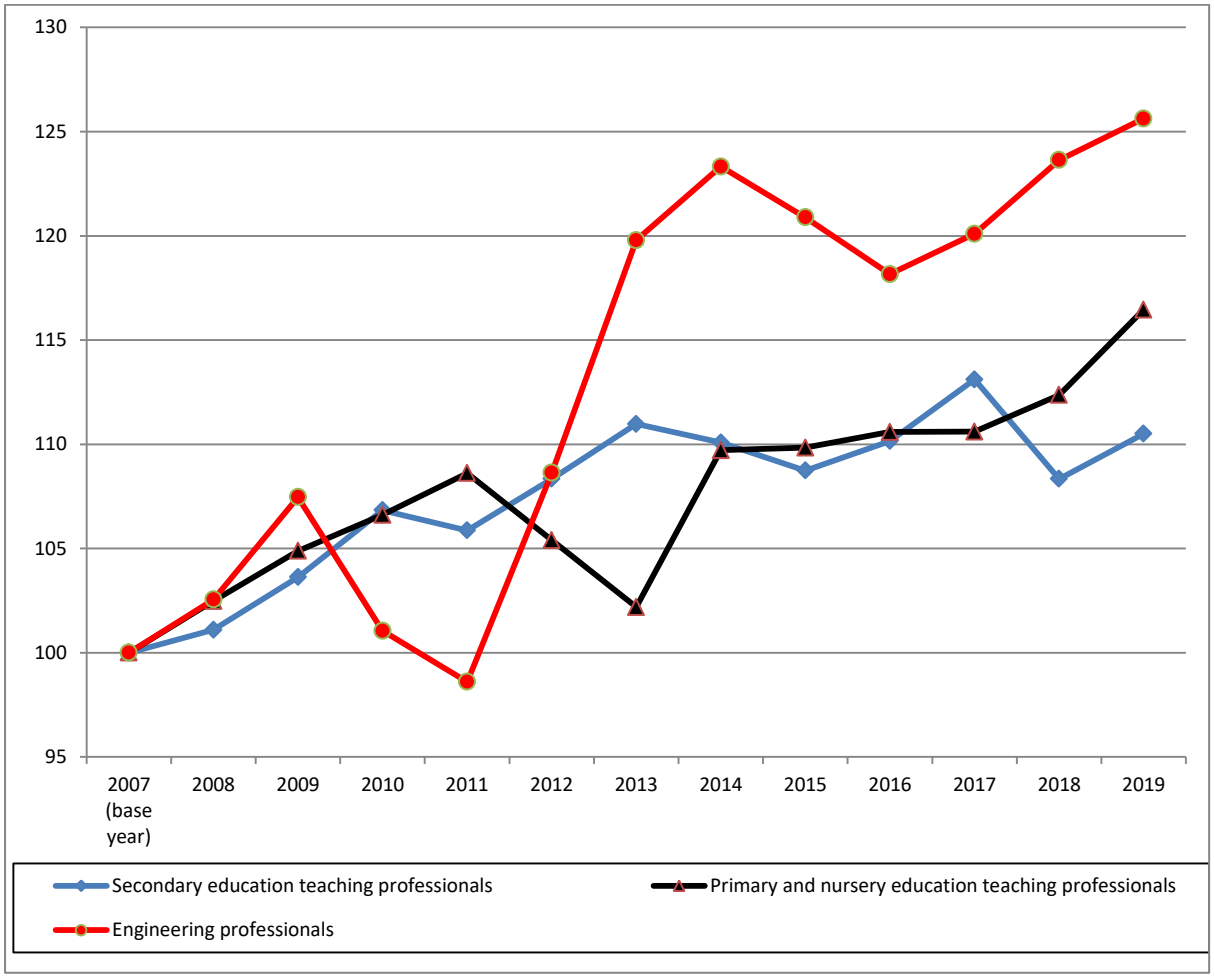
Appendix 5: Indexed median gross weekly earnings 2007 to 2019

A Science and research professionals

There was no base year data in 2007 for any of the scientific professions.

B Engineering professionals

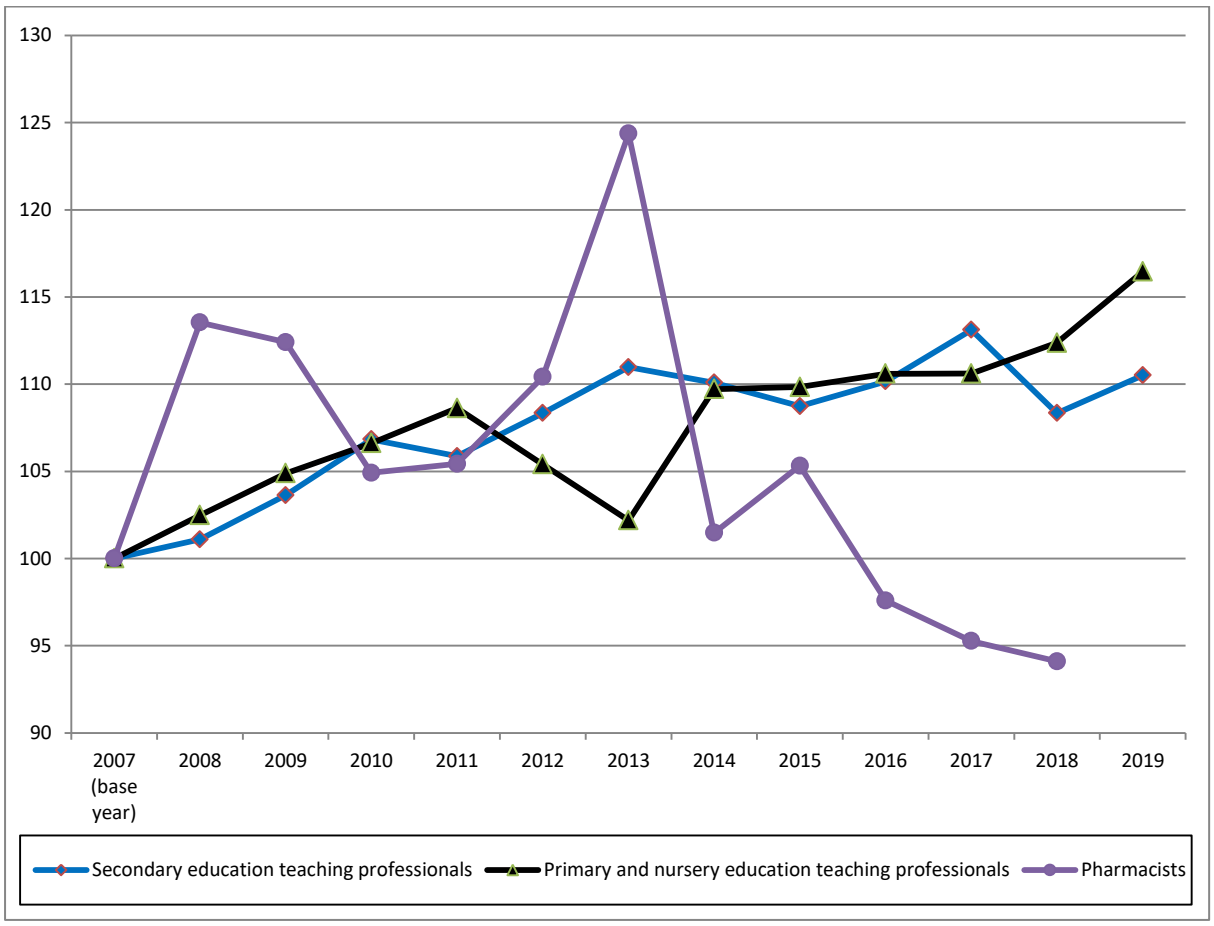
	Secondary education teaching professionals	Primary and nursery education teaching professionals	Engineering professionals
2007 (base year)	100.0	100.0	100.0
2008	101.1	102.5	102.5
2009	103.6	104.9	107.5
2010	106.8	106.6	101.1
2011	105.9	108.6	98.6
2012	108.3	105.4	108.6
2013	111.0	102.2	119.8
2014	110.1	109.7	123.3
2015	108.7	109.8	120.9
2016	110.2	110.6	118.2
2017	113.1	110.6	120.1
2018	108.3	112.4	123.6
2019	110.5	116.5	125.6



C Health professionals

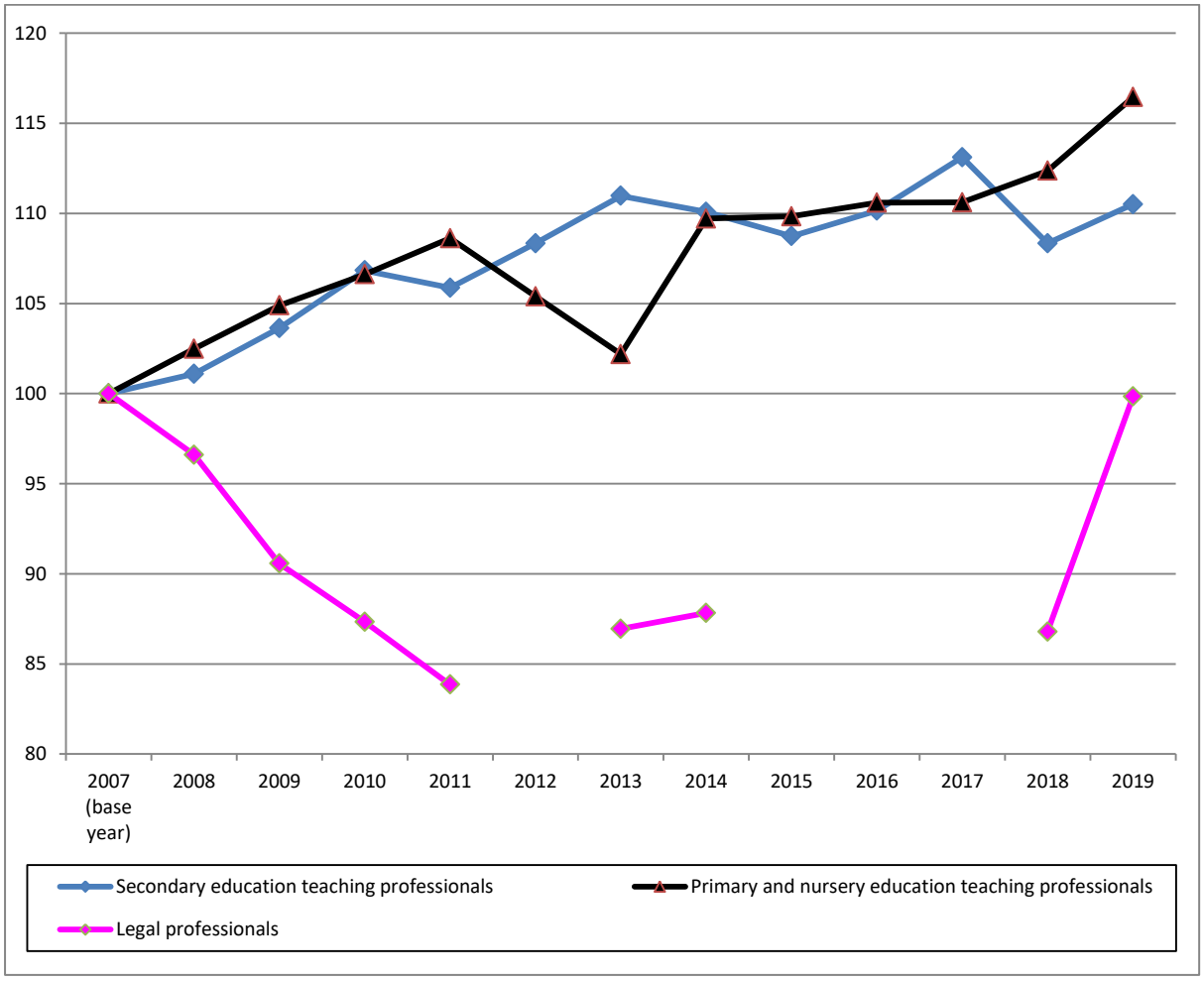
There was no base year data in 2007 for the health professional group.

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Pharmacists
2007 (base year)	100.0	100.0	100.0
2008	101.1	102.5	113.5
2009	103.6	104.9	112.4
2010	106.8	106.6	104.9
2011	105.9	108.6	105.4
2012	108.3	105.4	110.4
2013	111.0	102.2	124.4
2014	110.1	109.7	101.5
2015	108.7	109.8	105.3
2016	110.2	110.6	97.6
2017	113.1	110.6	95.3
2018	108.3	112.4	94.1
2019	110.5	116.5	



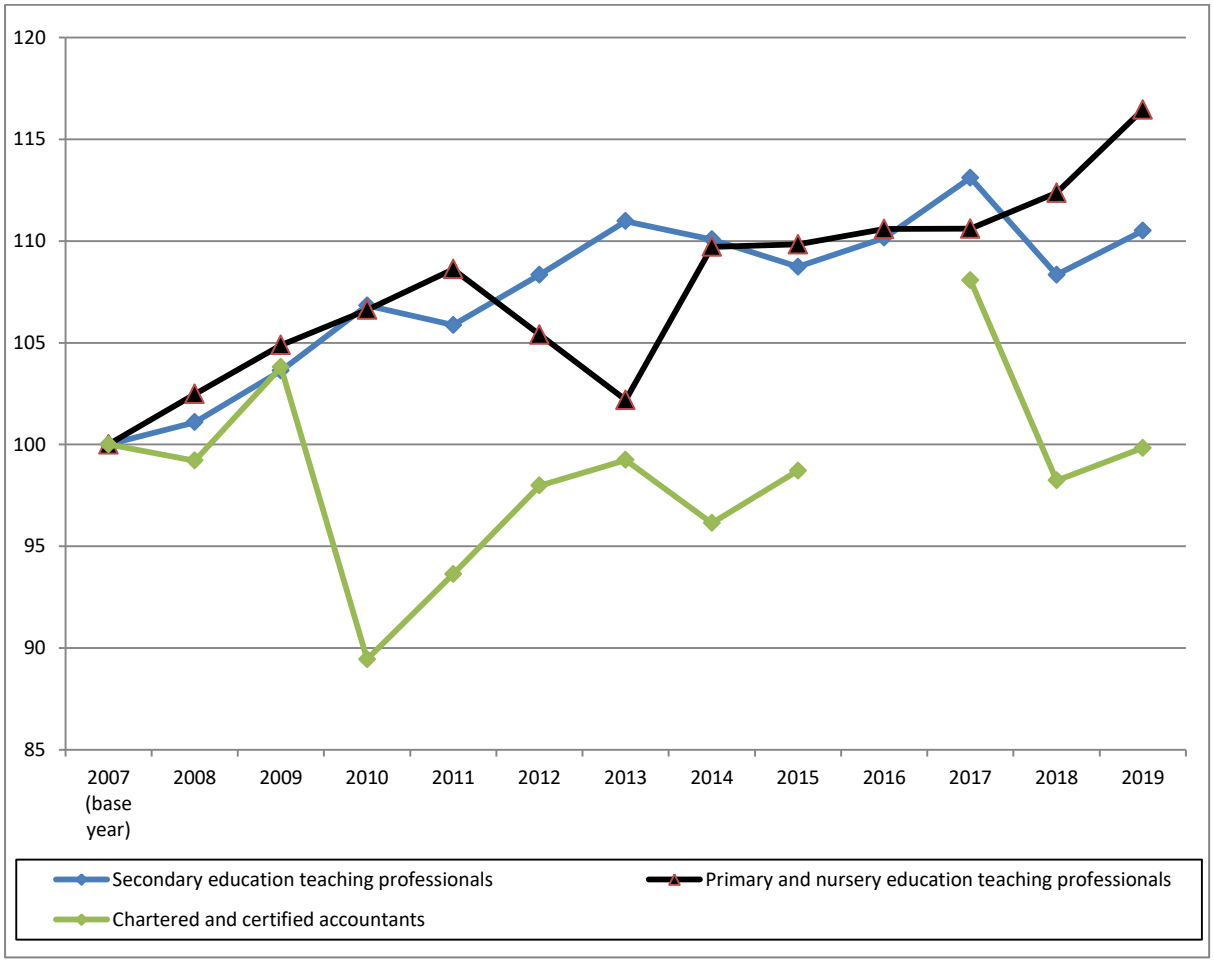
D Legal professionals

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Legal professionals
2007 (base year)	100.0	100.0	100.0
2008	101.1	102.5	96.6
2009	103.6	104.9	90.6
2010	106.8	106.6	87.3
2011	105.9	108.6	83.9
2012	108.3	105.4	
2013	111.0	102.2	86.9
2014	110.1	109.7	87.8
2015	108.7	109.8	
2016	110.2	110.6	
2017	113.1	110.6	
2018	108.3	112.4	86.8
2019	110.5	116.5	99.8



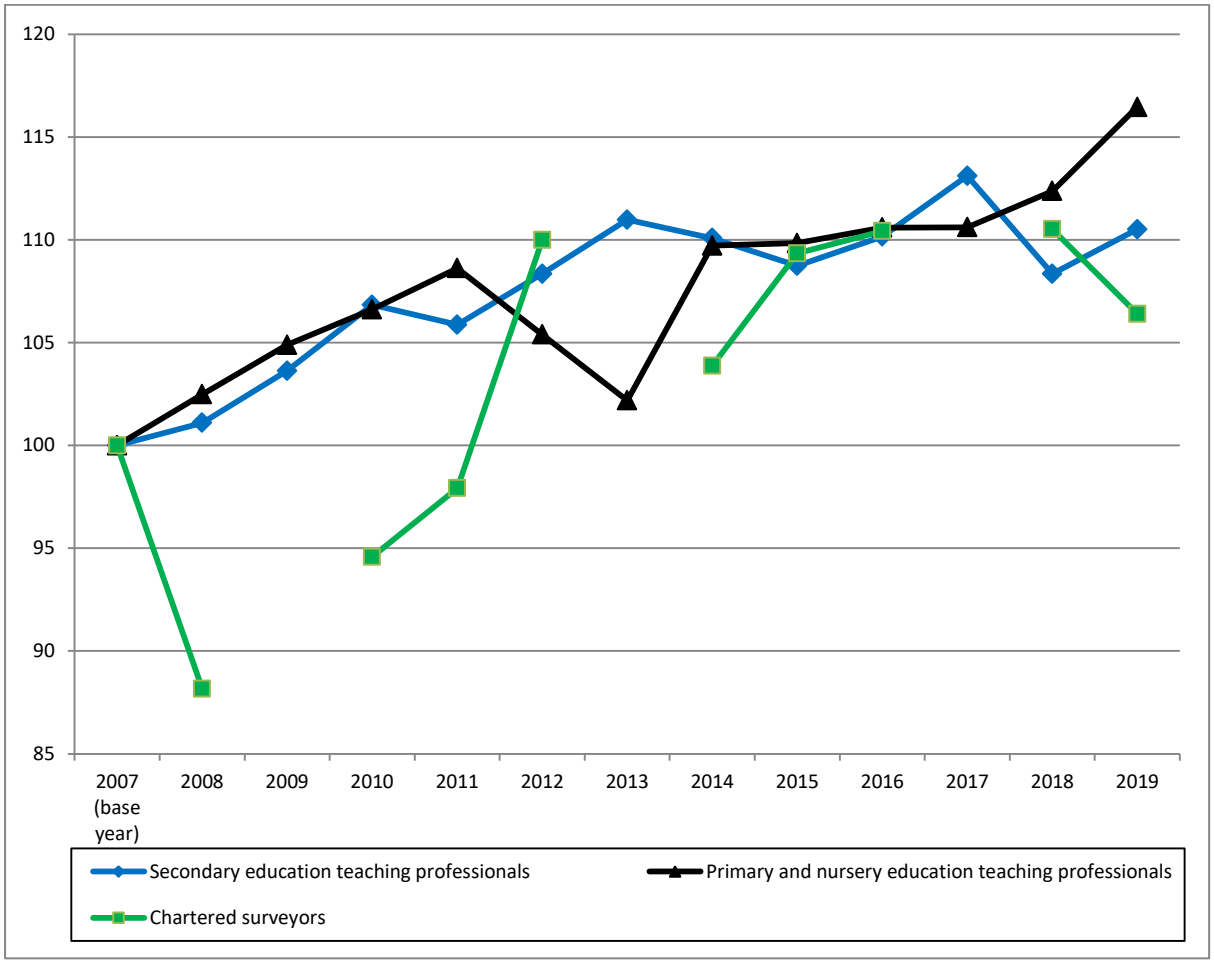
E Business, Research and Administrative professionals

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chartered and certified accountants
2007 (base year)	100.0	100.0	100.0
2008	101.1	102.5	99.2
2009	103.6	104.9	103.8
2010	106.8	106.6	89.4
2011	105.9	108.6	93.6
2012	108.3	105.4	98.0
2013	111.0	102.2	99.2
2014	110.1	109.7	96.1
2015	108.7	109.8	98.7
2016	110.2	110.6	
2017	113.1	110.6	108.1
2018	108.3	112.4	98.2
2019	110.5	116.5	99.8



F Chartered Surveyors

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chartered surveyors
2007 (base year)	100.0	100.0	100.0
2008	101.1	102.5	88.2
2009	103.6	104.9	
2010	106.8	106.6	94.6
2011	105.9	108.6	97.9
2012	108.3	105.4	110.0
2013	111.0	102.2	
2014	110.1	109.7	103.9
2015	108.7	109.8	109.3
2016	110.2	110.6	110.4
2017	113.1	110.6	
2018	108.3	112.4	110.5
2019	110.5	116.5	106.4

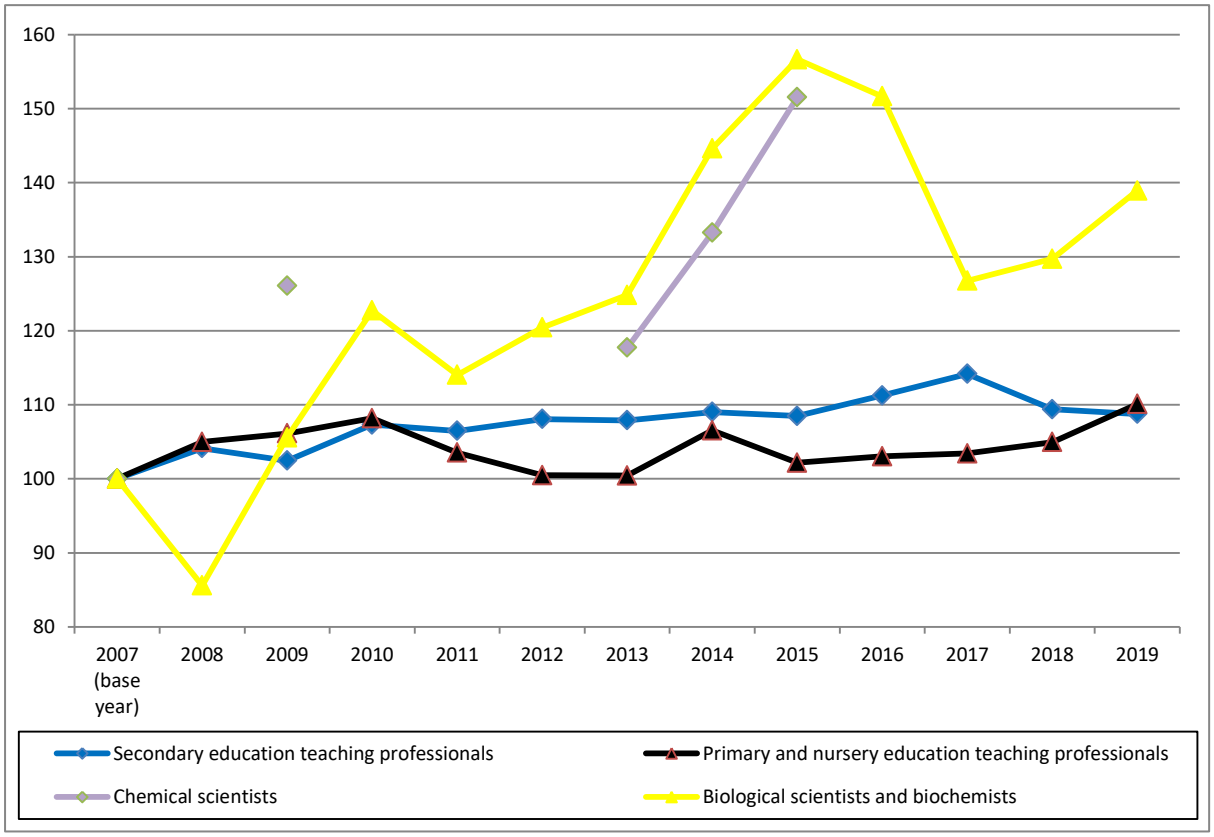


Appendix 6: Indexed average gross weekly earnings 2007 to 2019

A Science and research professionals

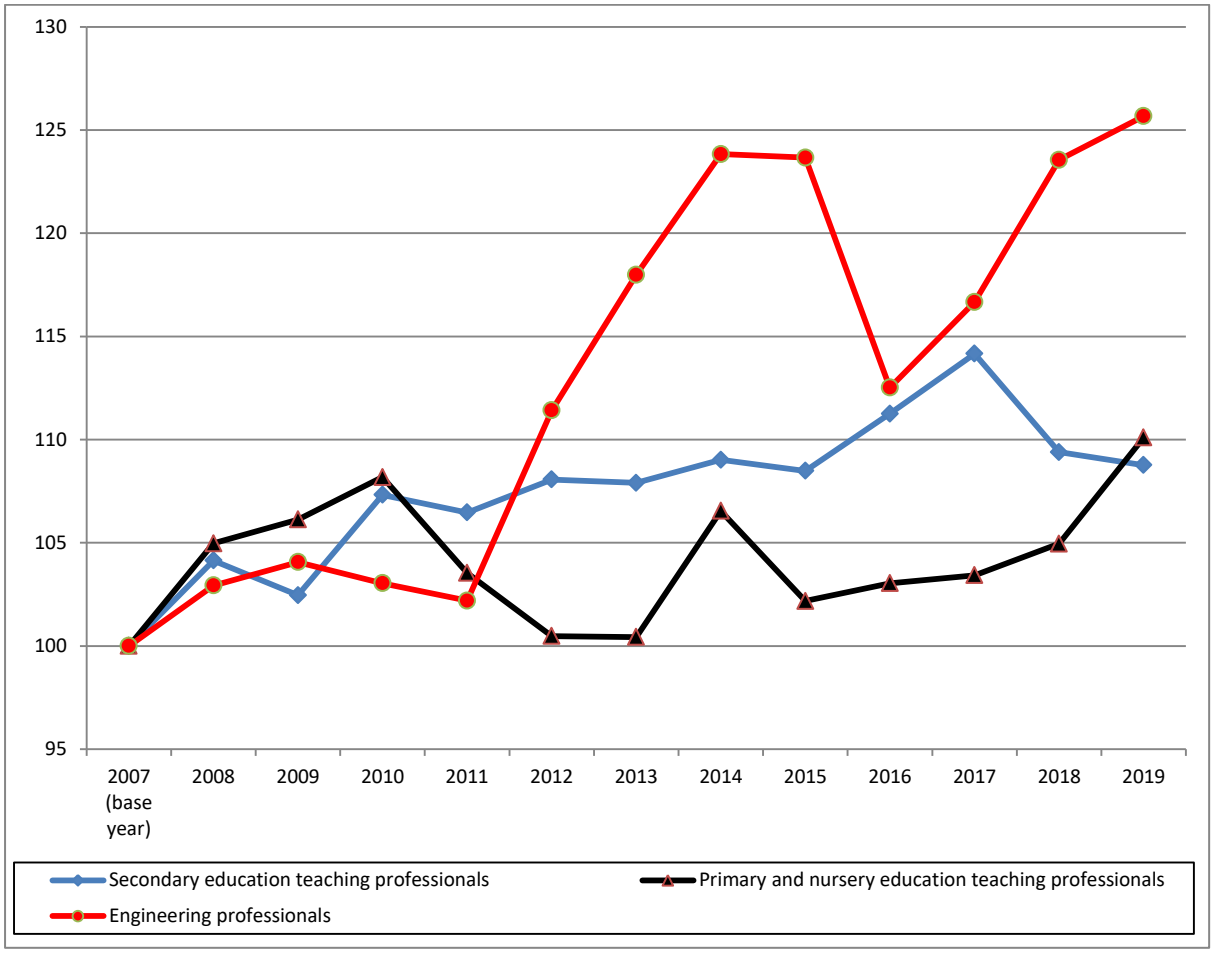
There was no base year data in 2007 for physical scientists.

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chemical scientists	Biological scientists and biochemists	Physical scientists
2007 (base year)	100.0	100.0	100.0	100.0	
2008	104.1	105.0		85.6	
2009	102.5	106.1	126.1	105.6	
2010	107.3	108.2		122.7	
2011	106.5	103.5		114.0	
2012	108.1	100.5		120.4	
2013	107.9	100.4	117.7	124.8	
2014	109.0	106.5	133.2	144.6	
2015	108.5	102.2	151.5	156.7	
2016	111.3	103.0		151.7	
2017	114.2	103.4		126.7	
2018	109.4	105.0		129.7	
2019	108.8	110.1		138.9	



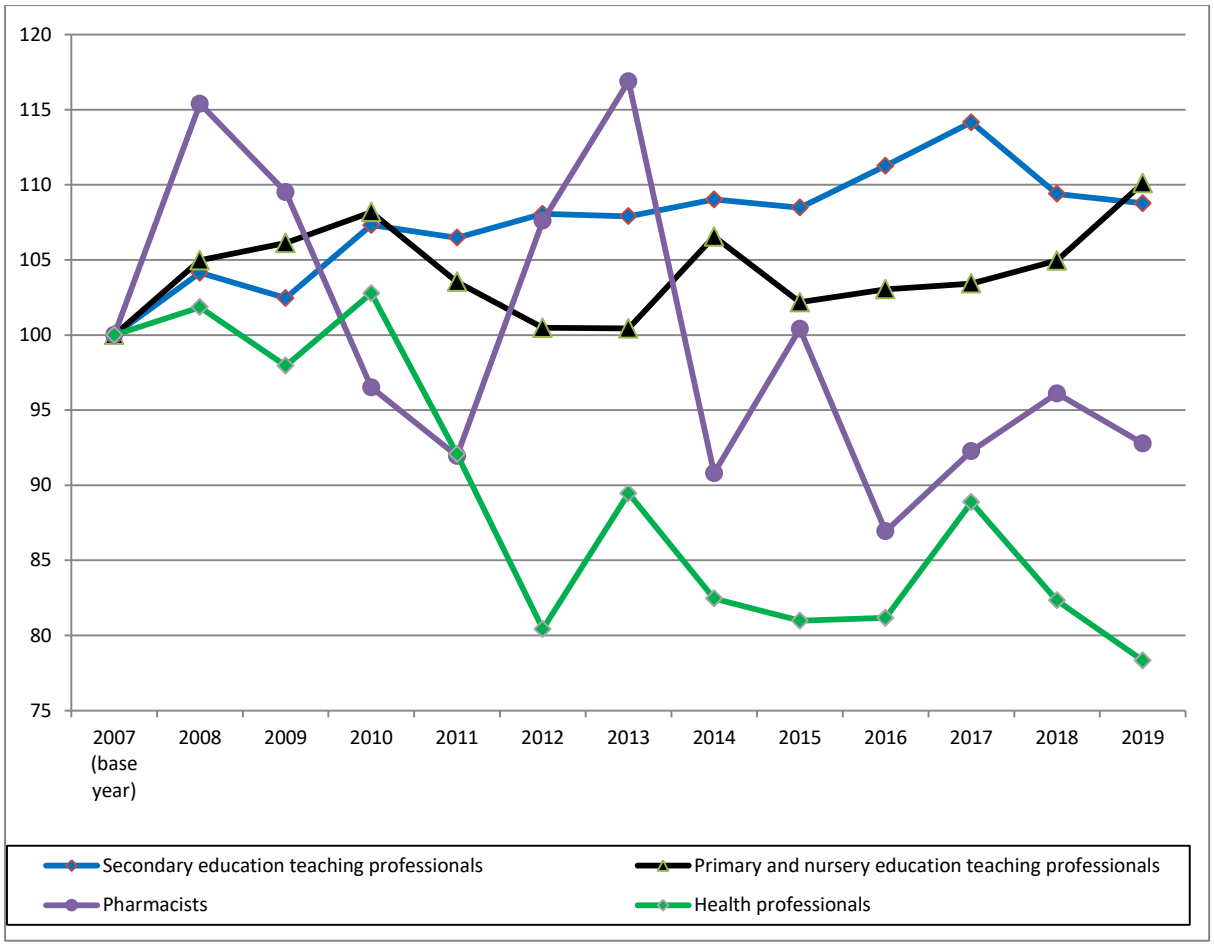
B Engineering professionals

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Engineering professionals
2007 (base year)	100.0	100.0	100.0
2008	104.1	105.0	102.9
2009	102.5	106.1	104.1
2010	107.3	108.2	103.0
2011	106.5	103.5	102.2
2012	108.1	100.5	111.4
2013	107.9	100.4	118.0
2014	109.0	106.5	123.8
2015	108.5	102.2	123.7
2016	111.3	103.0	112.5
2017	114.2	103.4	116.7
2018	109.4	105.0	123.6
2019	108.8	110.1	125.7



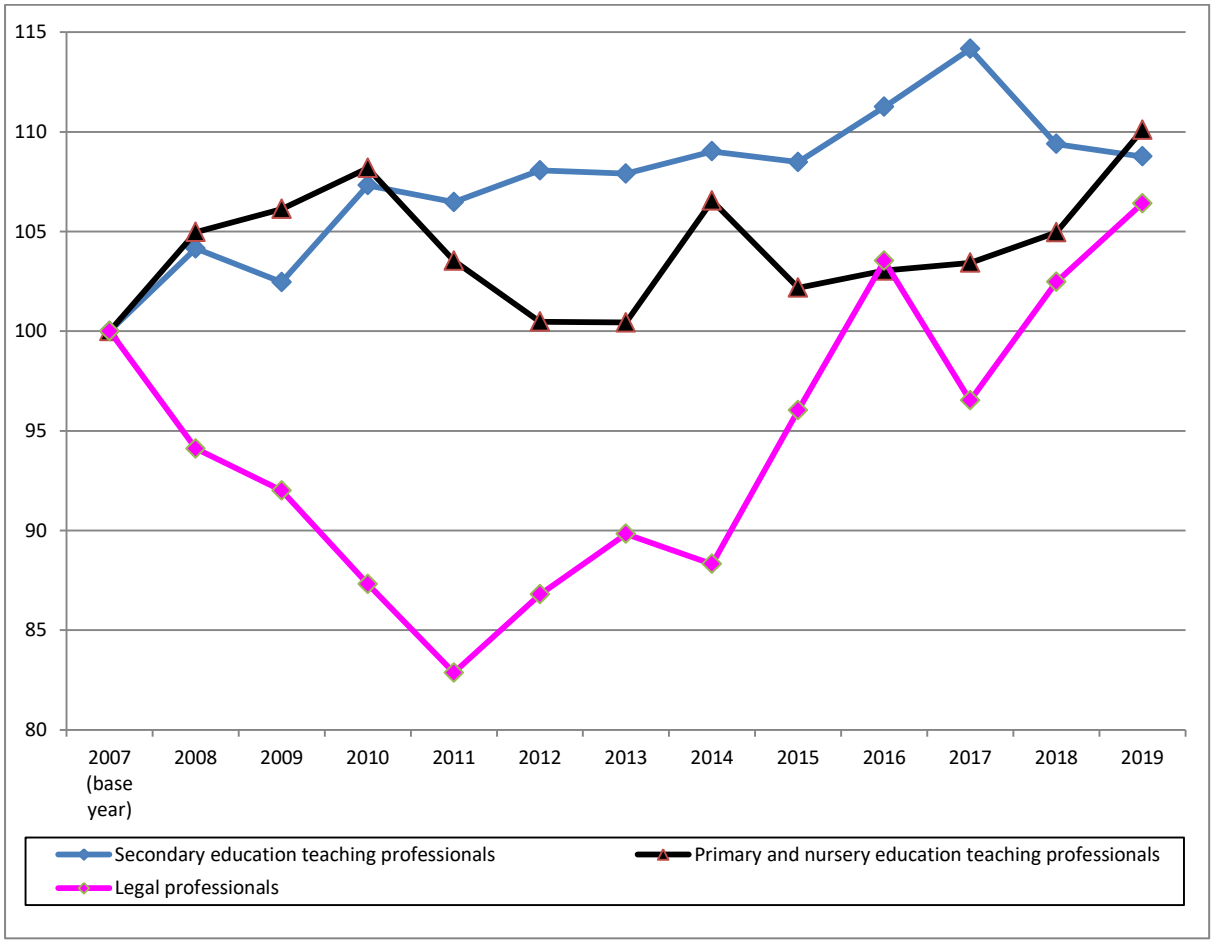
C Health professionals

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Health professionals	Pharmacists
2007 (base year)	100.0	100.0	100.0	100.0
2008	104.1	105.0	101.9	115.4
2009	102.5	106.1	98.0	109.5
2010	107.3	108.2	102.8	96.5
2011	106.5	103.5	92.1	92.0
2012	108.1	100.5	80.4	107.6
2013	107.9	100.4	89.5	116.9
2014	109.0	106.5	82.5	90.8
2015	108.5	102.2	81.0	100.4
2016	111.3	103.0	81.2	86.9
2017	114.2	103.4	88.9	92.3
2018	109.4	105.0	82.3	96.1
2019	108.8	110.1	78.3	92.8



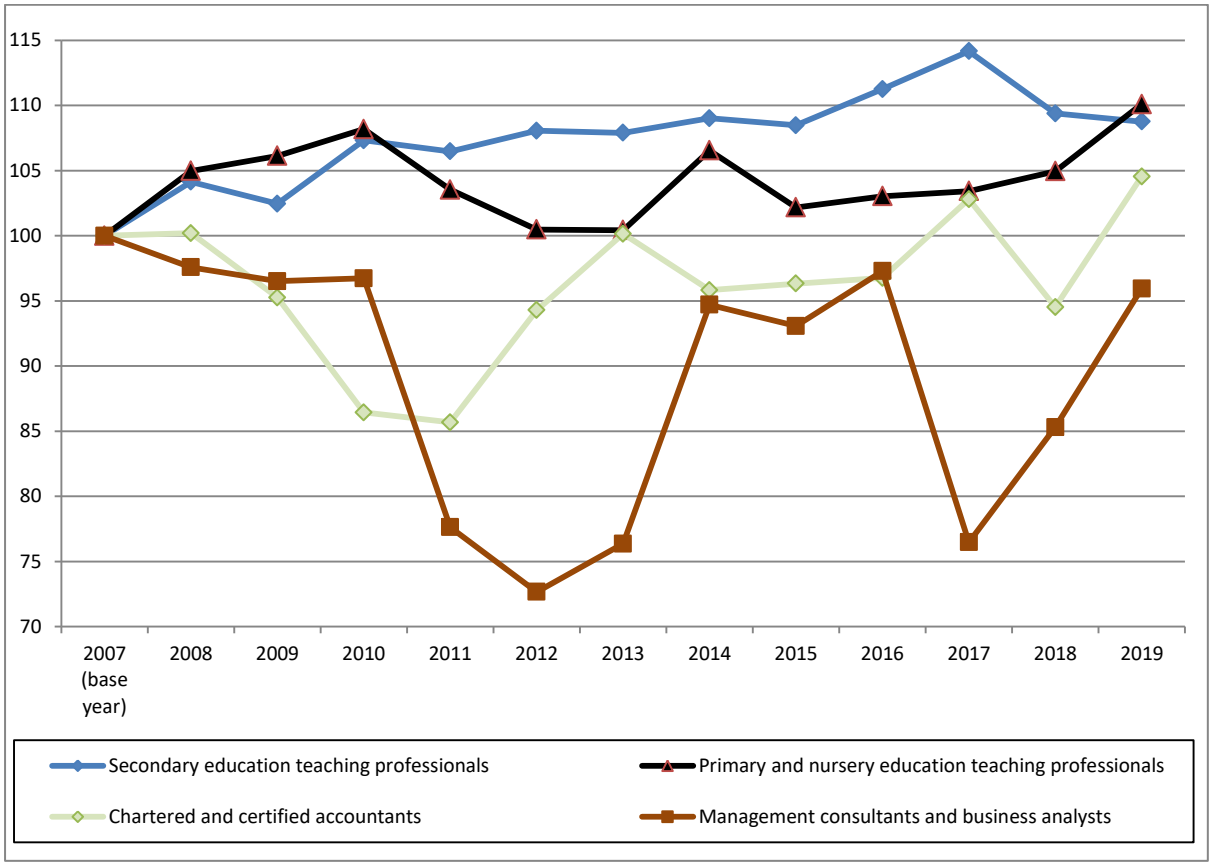
D Legal professionals

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Legal professionals
2007 (base year)	100.0	100.0	100.0
2008	104.1	105.0	94.1
2009	102.5	106.1	92.0
2010	107.3	108.2	87.3
2011	106.5	103.5	82.9
2012	108.1	100.5	86.8
2013	107.9	100.4	89.8
2014	109.0	106.5	88.3
2015	108.5	102.2	96.0
2016	111.3	103.0	103.5
2017	114.2	103.4	96.5
2018	109.4	105.0	102.5
2019	108.8	110.1	106.4



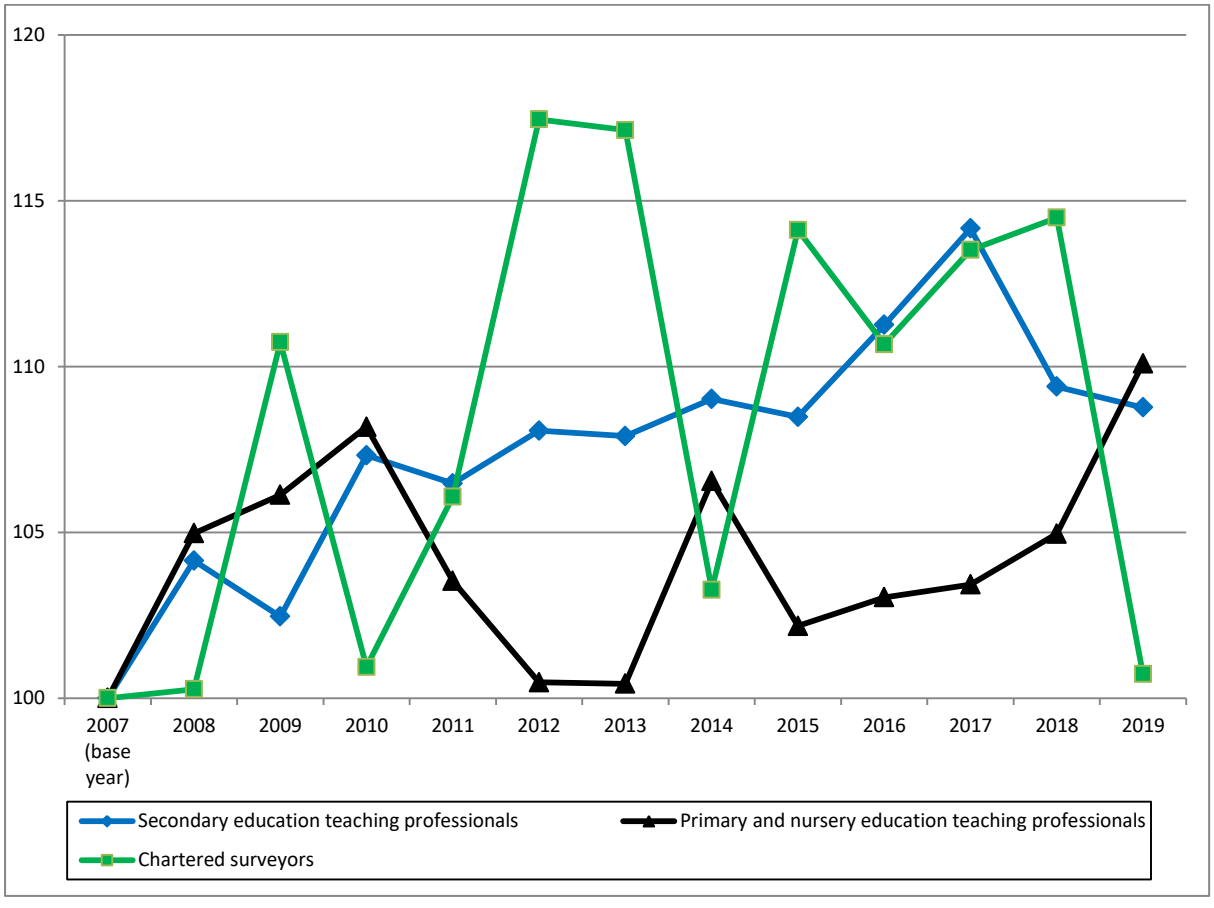
E Business, Research and Administrative professionals

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chartered and certified accountants	Management consultants and business analysts
2007 (base year)	100.0	100.0	100.0	100.0
2008	104.1	105.0	100.2	97.6
2009	102.5	106.1	95.3	96.5
2010	107.3	108.2	86.4	96.7
2011	106.5	103.5	85.7	77.6
2012	108.1	100.5	94.3	72.7
2013	107.9	100.4	100.1	76.4
2014	109.0	106.5	95.8	94.7
2015	108.5	102.2	96.3	93.1
2016	111.3	103.0	96.8	97.3
2017	114.2	103.4	102.8	76.5
2018	109.4	105.0	94.5	85.3
2019	108.8	110.1	104.5	95.9



F Chartered Surveyors

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chartered surveyors
2007 (base year)	100.0	100.0	100.0
2008	104.1	105.0	100.3
2009	102.5	106.1	110.7
2010	107.3	108.2	100.9
2011	106.5	103.5	106.1
2012	108.1	100.5	117.5
2013	107.9	100.4	117.1
2014	109.0	106.5	103.3
2015	108.5	102.2	114.1
2016	111.3	103.0	110.7
2017	114.2	103.4	113.5
2018	109.4	105.0	114.5
2019	108.8	110.1	100.7

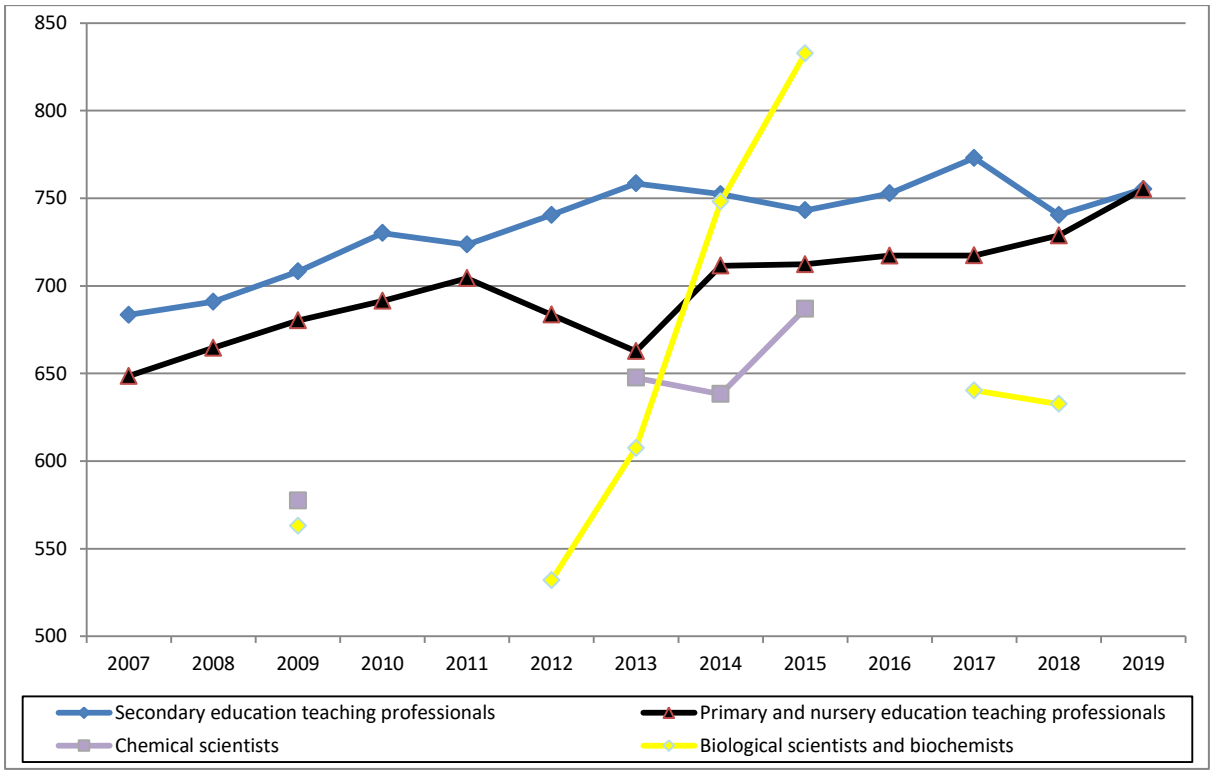


Appendix 7: Median gross weekly earnings 1998 to 2015 (ASHE)

A Science and research professionals

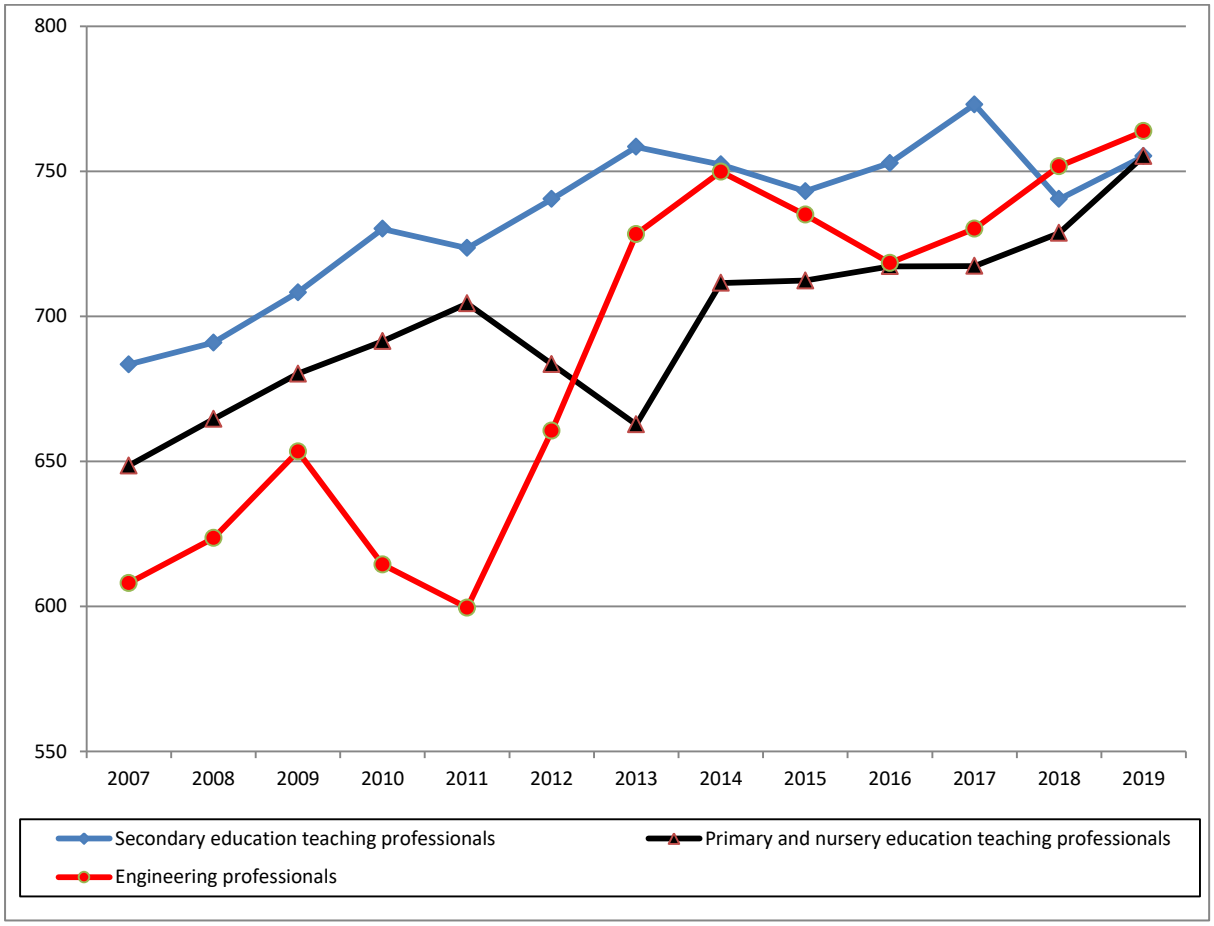
There was no base year data in 2007 for physical scientists.

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chemical scientists	Biological scientists and biochemists
2007	683.4	648.5		
2008	690.9	664.6		
2009	708.2	680.2	577.4	563.0
2010	730.1	691.4		
2011	723.5	704.4		
2012	740.4	683.5		531.9
2013	758.4	662.7	647.5	607.4
2014	752.3	711.5	638.2	748.0
2015	743.1	712.3	686.9	832.7
2016	752.8	717.2		
2017	773.0	717.3		640.3
2018	740.4	728.7		632.6
2019	755.2	755.2		



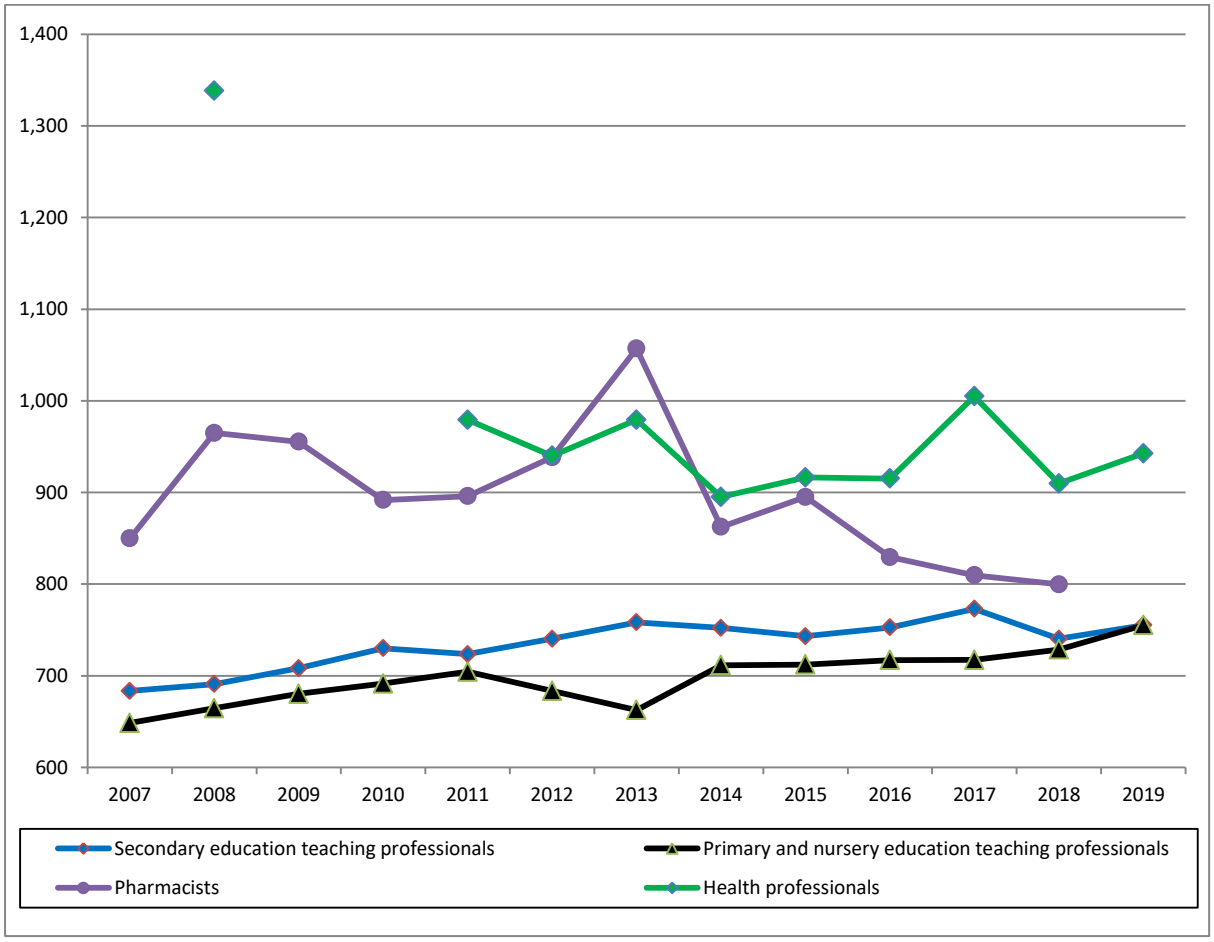
B Engineering professionals (median gross earnings £pw)

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Engineering professionals
2007	683.4	648.5	608.0
2008	690.9	664.6	623.5
2009	708.2	680.2	653.4
2010	730.1	691.4	614.4
2011	723.5	704.4	599.5
2012	740.4	683.5	660.5
2013	758.4	662.7	728.3
2014	752.3	711.5	749.8
2015	743.1	712.3	735.0
2016	752.8	717.2	718.4
2017	773.0	717.3	730.2
2018	740.4	728.7	751.7
2019	755.2	755.2	763.8



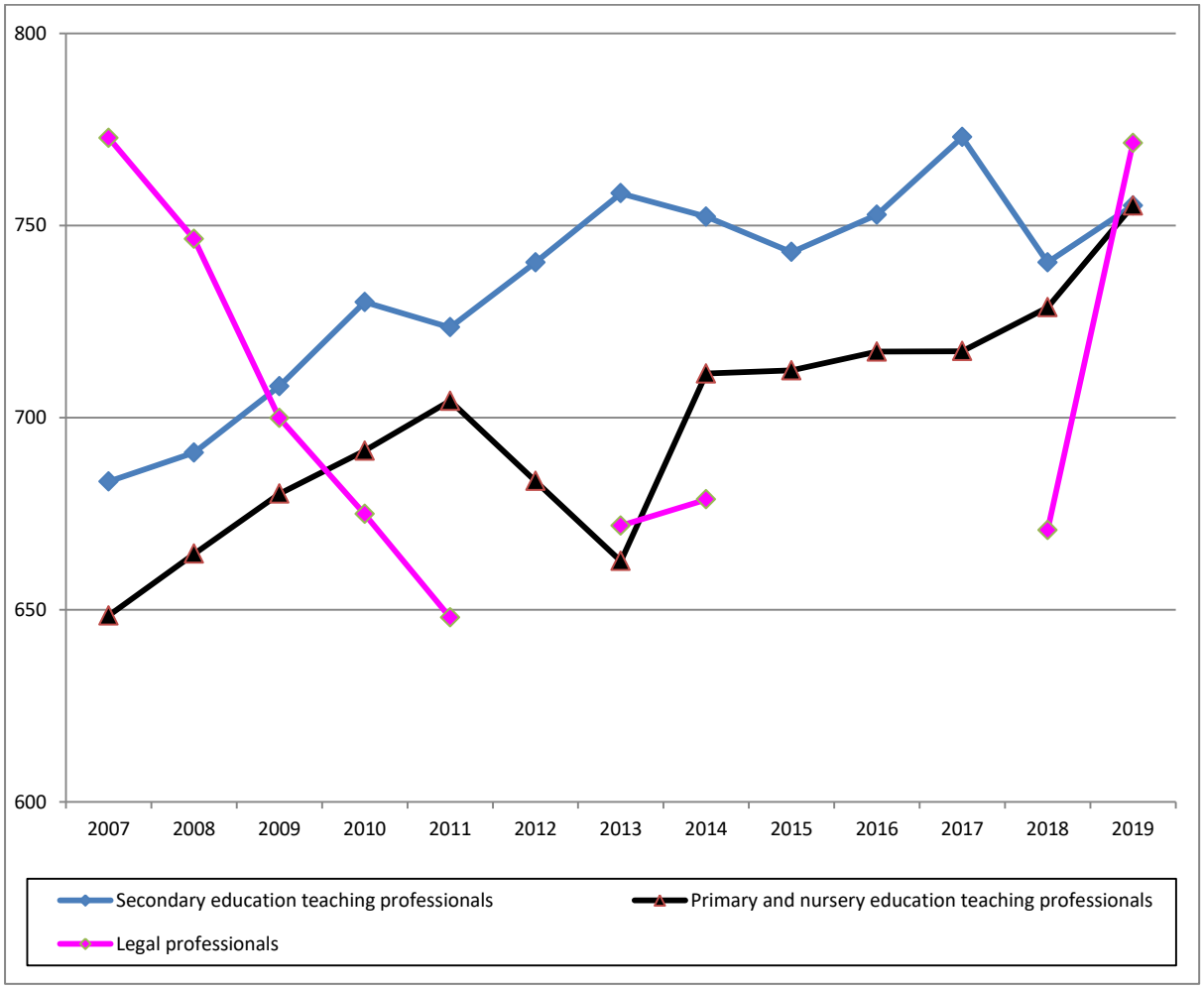
C Health professionals (median gross earnings £pw)

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Health professionals	Pharmacists
2007	683.4	648.5		849.9
2008	690.9	664.6	1,338.3	964.9
2009	708.2	680.2		955.3
2010	730.1	691.4		891.7
2011	723.5	704.4	979.2	896.0
2012	740.4	683.5	939.9	938.4
2013	758.4	662.7	979.2	1,057.0
2014	752.3	711.5	895.0	862.4
2015	743.1	712.3	916.3	895.1
2016	752.8	717.2	915.1	829.4
2017	773.0	717.3	1,005.0	809.7
2018	740.4	728.7	909.8	799.8
2019	755.2	755.2	942.6	



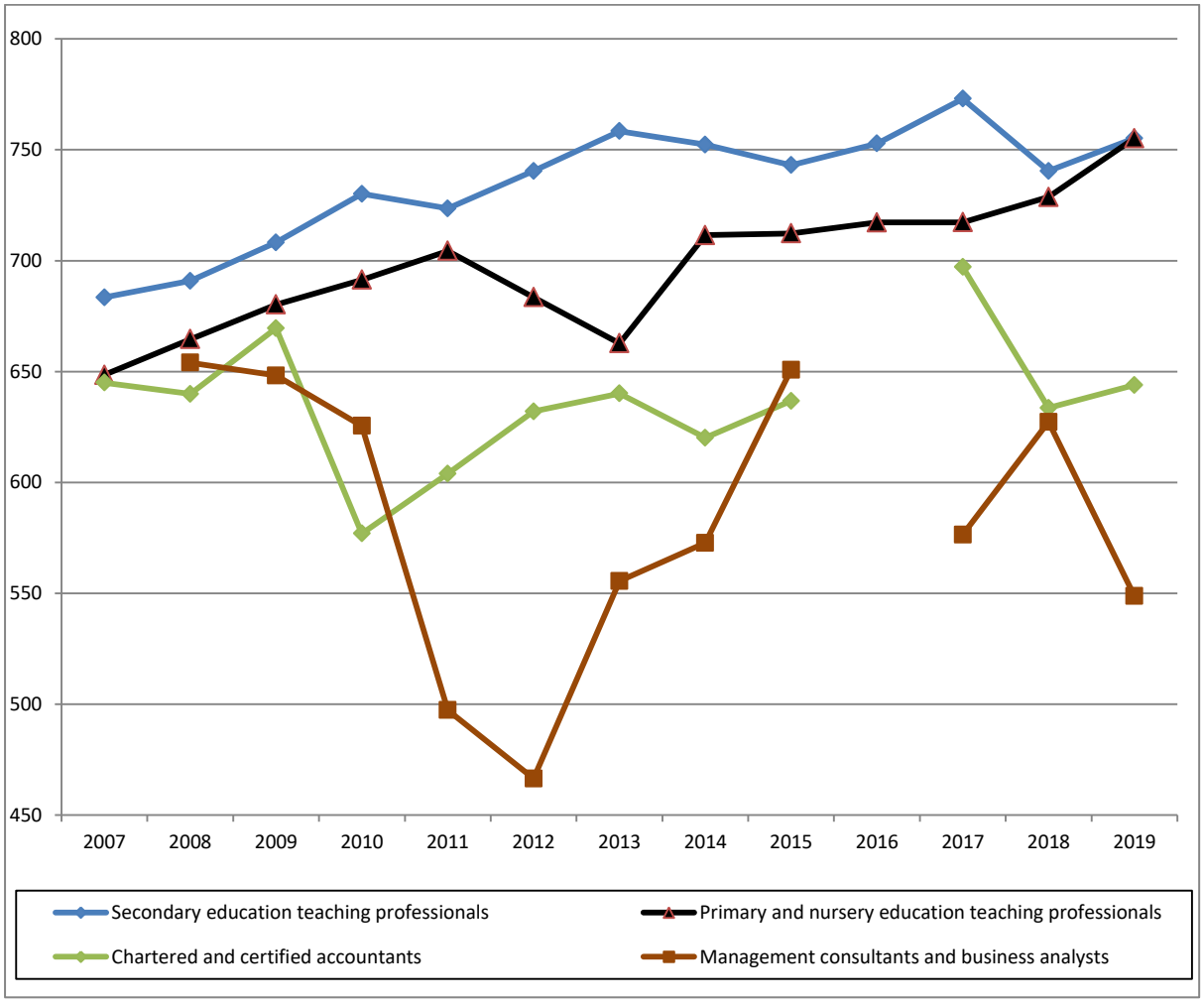
D Legal professionals (median gross earnings £pw)

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Legal professionals
2007	683.4	648.5	772.8
2008	690.9	664.6	746.5
2009	708.2	680.2	699.9
2010	730.1	691.4	674.9
2011	723.5	704.4	648.0
2012	740.4	683.5	
2013	758.4	662.7	671.9
2014	752.3	711.5	678.7
2015	743.1	712.3	
2016	752.8	717.2	
2017	773.0	717.3	
2018	740.4	728.7	670.7
2019	755.2	755.2	771.5



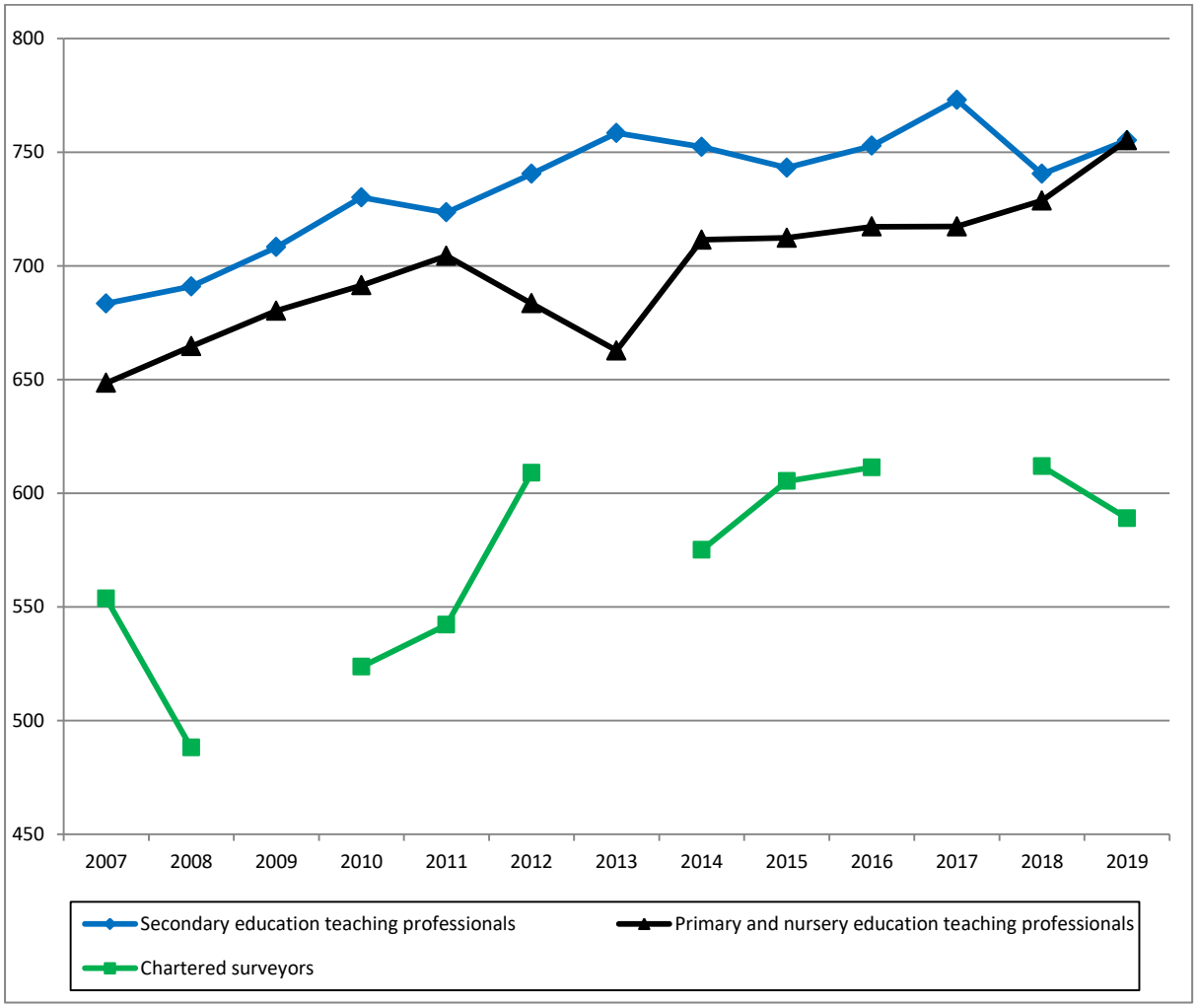
E Business, Research and Administrative professions (median gross earnings £pw)

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chartered and certified accountants	Management consultants and business analysts
2007	683.4	648.5	645.0	
2008	690.9	664.6	639.9	654.0
2009	708.2	680.2	669.5	648.2
2010	730.1	691.4	576.9	625.5
2011	723.5	704.4	603.9	497.3
2012	740.4	683.5	632.0	466.4
2013	758.4	662.7	640.1	555.5
2014	752.3	711.5	620.1	572.7
2015	743.1	712.3	636.7	650.8
2016	752.8	717.2		
2017	773.0	717.3	697.1	576.4
2018	740.4	728.7	633.6	627.3
2019	755.2	755.2	643.9	548.7



F Chartered Surveyors (median gross earnings £pw)

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chartered surveyors
2007	683.4	648.5	553.6
2008	690.9	664.6	488.1
2009	708.2	680.2	
2010	730.1	691.4	523.6
2011	723.5	704.4	542.1
2012	740.4	683.5	608.9
2013	758.4	662.7	
2014	752.3	711.5	575.0
2015	743.1	712.3	605.3
2016	752.8	717.2	611.3
2017	773.0	717.3	
2018	740.4	728.7	611.8
2019	755.2	755.2	589.0

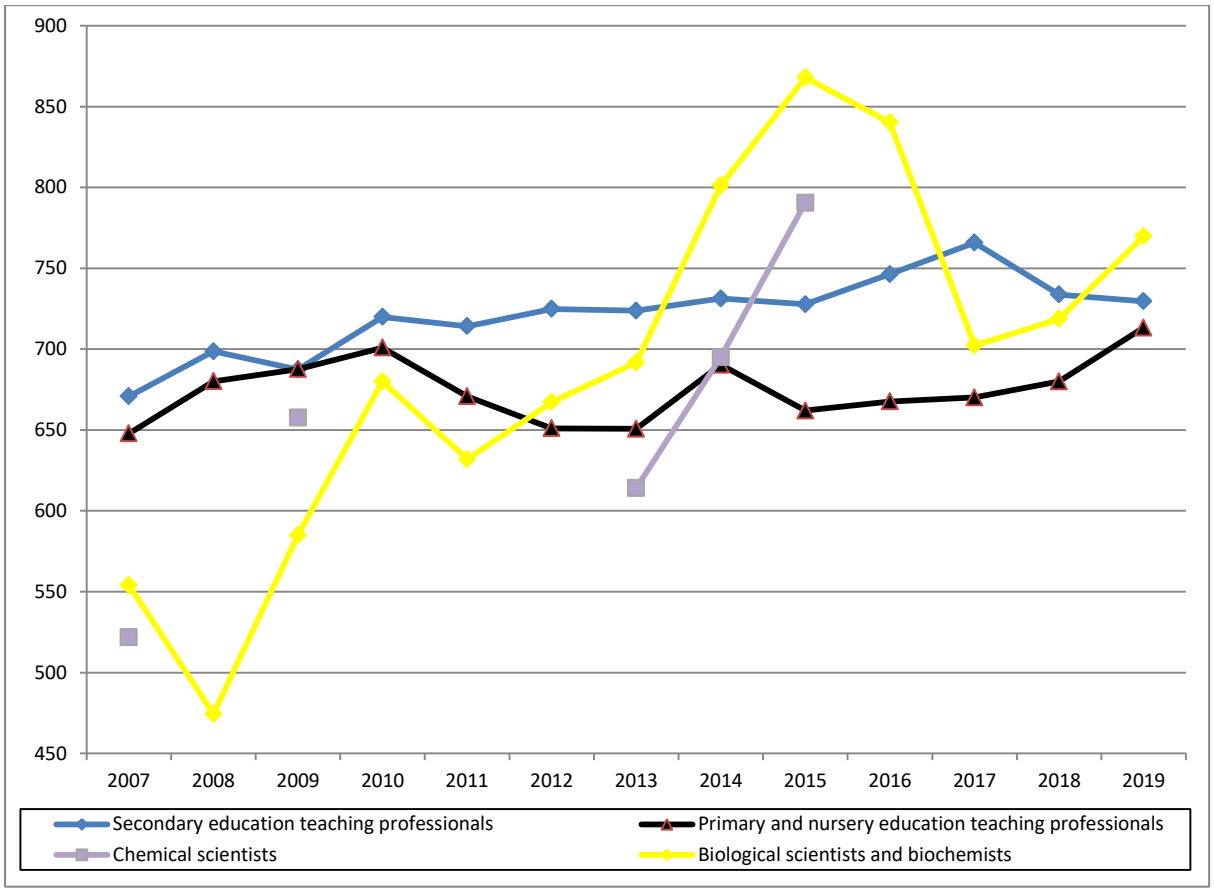


Appendix 8: Average gross weekly earnings 2007 to 2019 (ASHE)

A Science, Research, Engineering and Technology professionals

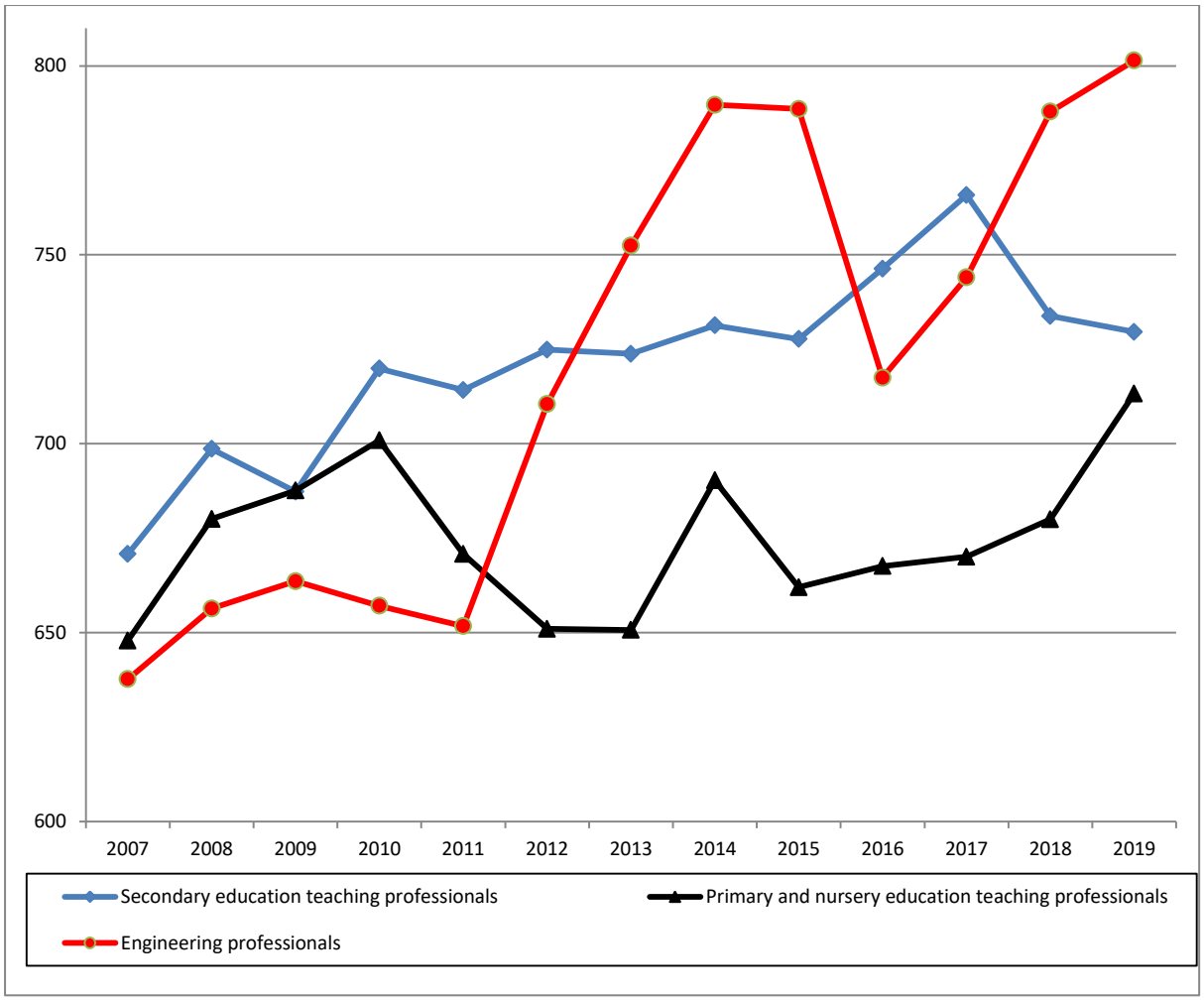
There was no base year data in 2007 for physical scientists.

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chemical scientists	Biological scientists and biochemists
2007	670.8	647.9	521.7	554.1
2008	698.6	680.1		474.3
2009	687.3	687.6	657.7	585.0
2010	719.9	700.9		680.0
2011	714.2	670.8		631.9
2012	724.9	651.0		667.3
2013	723.8	650.7	614.1	691.7
2014	731.3	690.3	695.1	801.3
2015	727.7	662.0	790.5	868.0
2016	746.3	667.6		840.3
2017	765.8	670.1		702.3
2018	733.8	680.0		718.7
2019	729.6	713.3		769.8



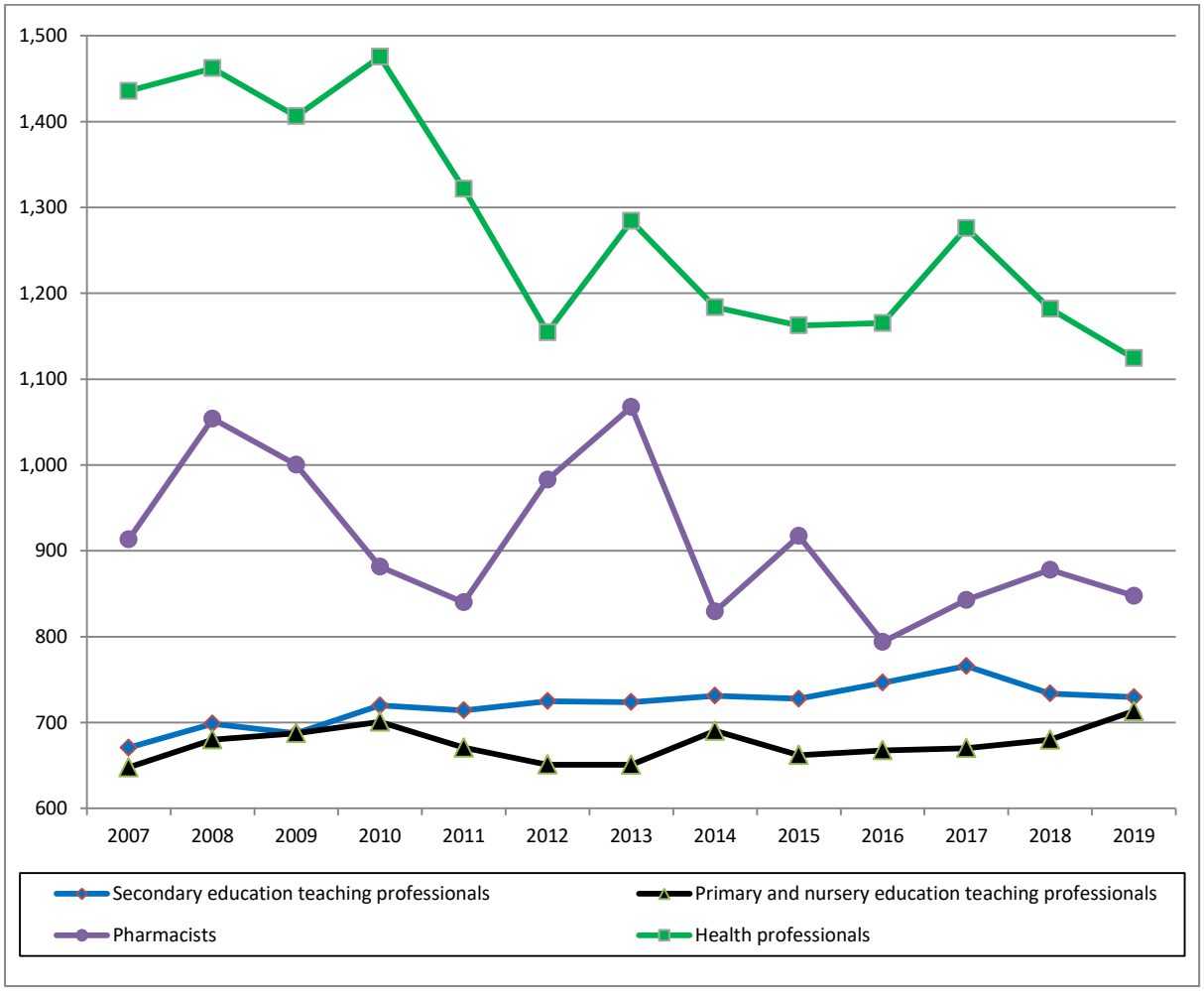
B Engineering professionals (average gross earnings £pw)

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Engineering professionals
2007	670.8	647.9	637.7
2008	698.6	680.1	656.4
2009	687.3	687.6	663.6
2010	719.9	700.9	657.1
2011	714.2	670.8	651.7
2012	724.9	651.0	710.5
2013	723.8	650.7	752.4
2014	731.3	690.3	789.7
2015	727.7	662.0	788.6
2016	746.3	667.6	717.5
2017	765.8	670.1	744.0
2018	733.8	680.0	787.9
2019	729.6	713.3	801.4



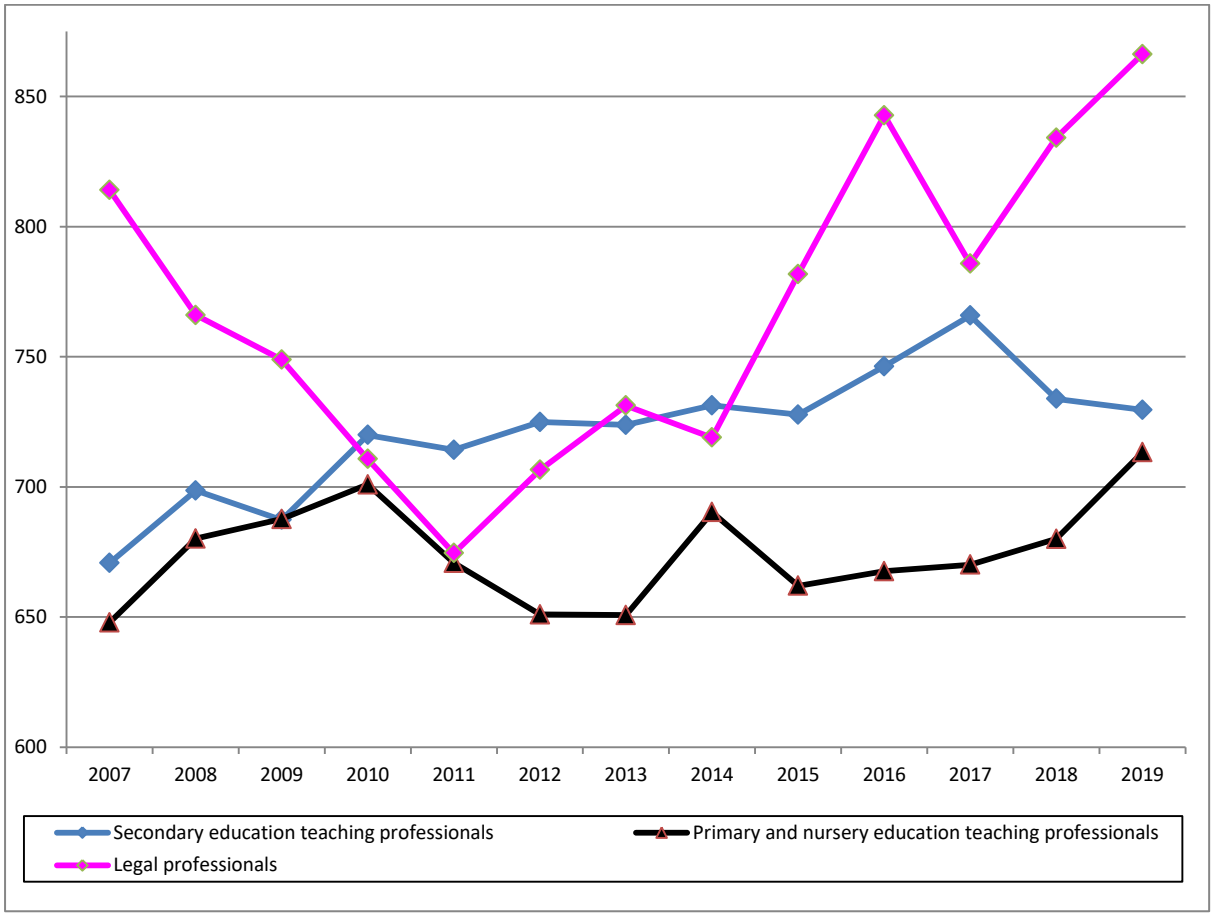
C Health professionals (average gross earnings £pw)

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Health professionals	Pharmacists
2007	670.8	647.9	1,435.6	913.4
2008	698.6	680.1	1,462.2	1,054.0
2009	687.3	687.6	1,406.2	1,000.3
2010	719.9	700.9	1,475.5	881.5
2011	714.2	670.8	1,321.7	839.9
2012	724.9	651.0	1,154.5	982.9
2013	723.8	650.7	1,284.2	1,067.6
2014	731.3	690.3	1,183.7	829.4
2015	727.7	662.0	1,162.5	917.2
2016	746.3	667.6	1,165.2	794.0
2017	765.8	670.1	1,275.9	842.8
2018	733.8	680.0	1,182.0	877.8
2019	729.6	713.3	1124.5	847.5



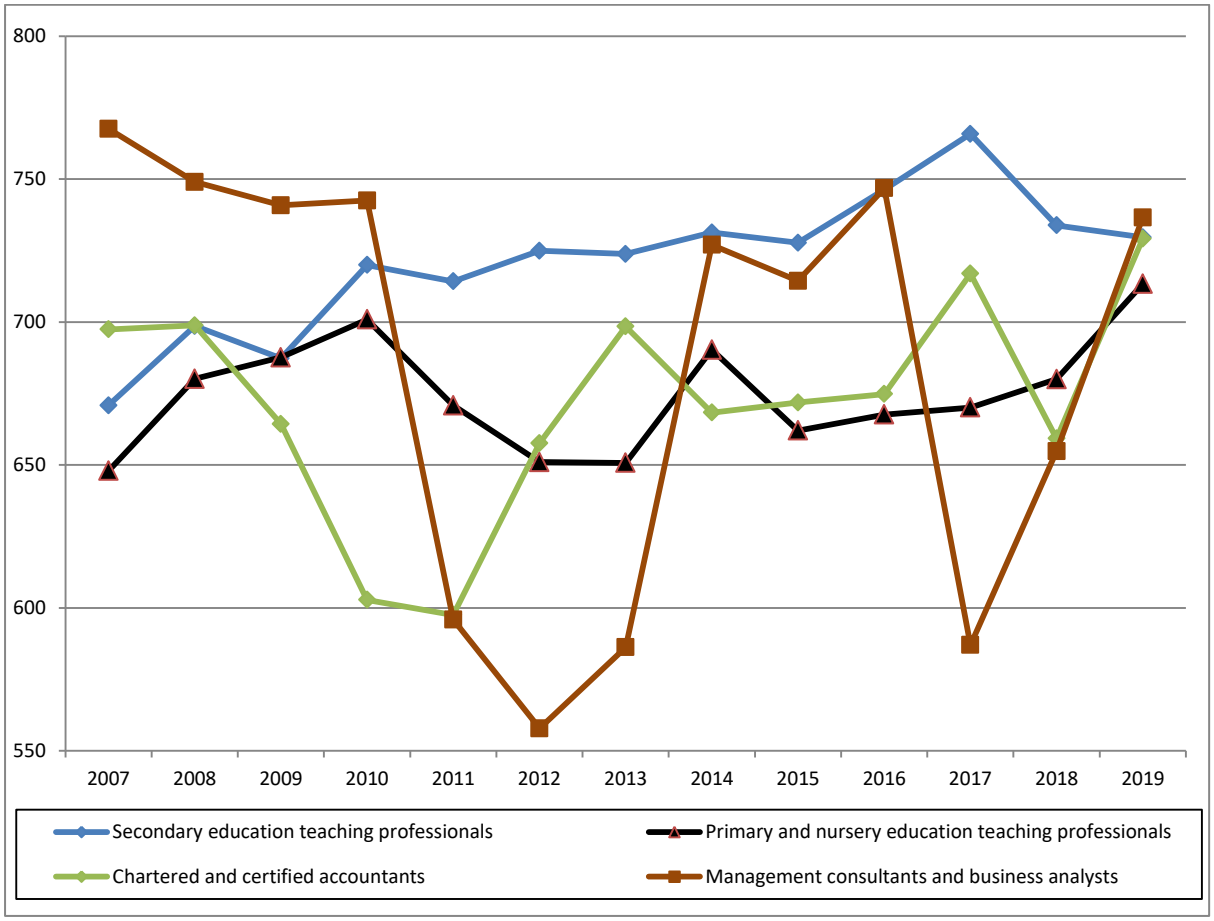
D Legal professionals (average gross earnings £pw)

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Legal professionals
2007	670.8	647.9	814.0
2008	698.6	680.1	766.0
2009	687.3	687.6	748.9
2010	719.9	700.9	710.7
2011	714.2	670.8	674.5
2012	724.9	651.0	706.5
2013	723.8	650.7	731.2
2014	731.3	690.3	718.9
2015	727.7	662.0	781.7
2016	746.3	667.6	842.7
2017	765.8	670.1	785.7
2018	733.8	680.0	834.1
2019	729.6	713.3	866.2



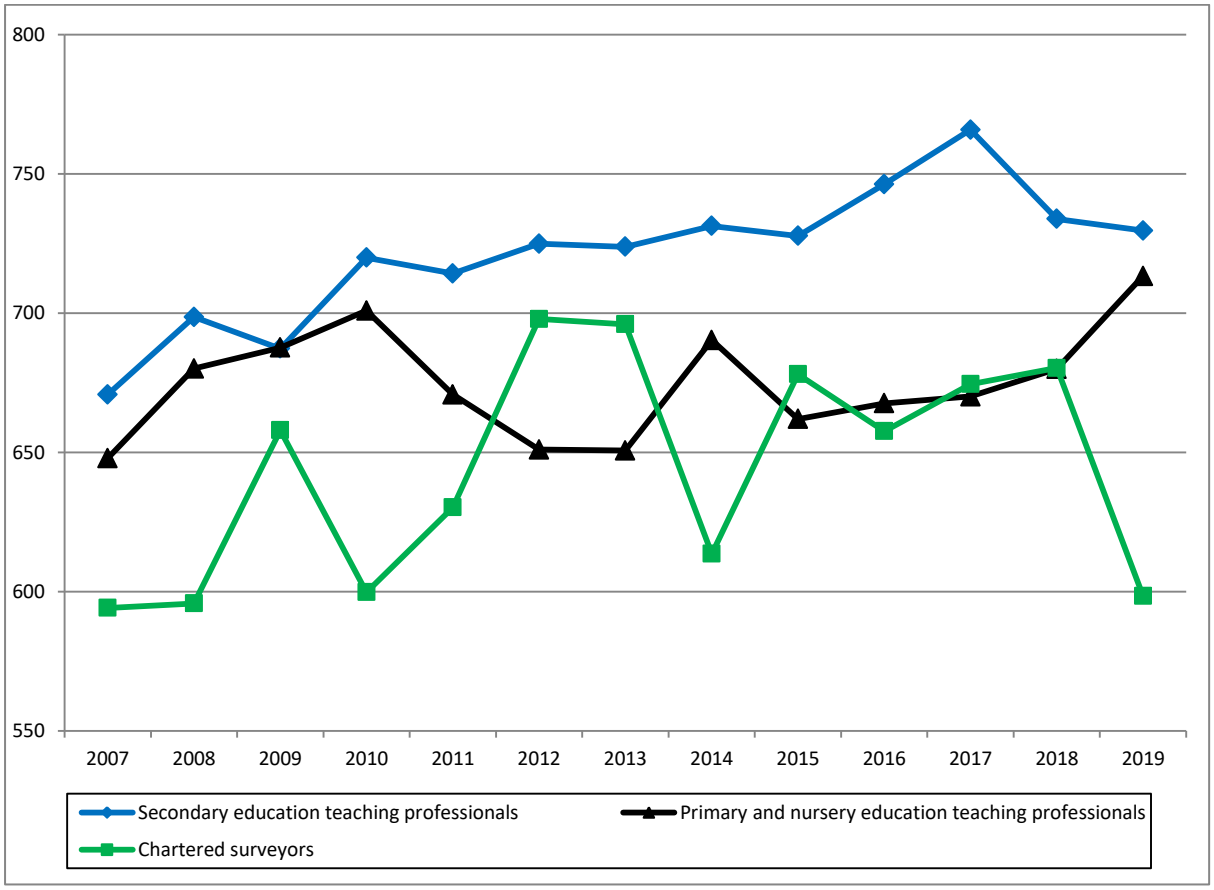
E Business, Research and Administrative professionals (average gross earnings £pw)

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chartered and certified accountants	Management consultants and business analysts
2007	670.8	647.9	697.4	767.6
2008	698.6	680.1	698.8	749.0
2009	687.3	687.6	664.3	740.8
2010	719.9	700.9	602.8	742.5
2011	714.2	670.8	597.5	595.9
2012	724.9	651.0	657.6	557.8
2013	723.8	650.7	698.4	586.2
2014	731.3	690.3	668.3	727.0
2015	727.7	662.0	671.8	714.4
2016	746.3	667.6	674.8	746.8
2017	765.8	670.1	716.9	587.0
2018	733.8	680.0	659.2	654.8
2019	729.6	713.3	729.1	736.5



F Chartered Surveyors (average gross earnings £pw)

	Secondary education teaching professionals	Primary and nursery education teaching professionals	Chartered surveyors
2007	670.8	647.9	594.2
2008	698.6	680.1	595.8
2009	687.3	687.6	658.0
2010	719.9	700.9	599.8
2011	714.2	670.8	630.3
2012	724.9	651.0	697.9
2013	723.8	650.7	696.0
2014	731.3	690.3	613.6
2015	727.7	662.0	678.1
2016	746.3	667.6	657.6
2017	765.8	670.1	674.5
2018	733.8	680.0	680.3
2019	729.6	713.3	598.5



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%. However, estimates for domains with smaller sample sizes such as found in Wales are susceptible to larger revisions.