

Article

# Changes in real earnings in the UK and London: 2002 to 2012

Average earnings of employees in the UK have fallen in real terms since 2009. Average earnings in real terms are now at similar levels to those of 2002-03. There are some geographical differences. For instance, employees working in London earn more on average than UK employees and their average real earnings fell less rapidly than the UK average from 2010 to 2012. There are also differences between full-time and part-time employees in the private and public sectors. The decline in real wages has short-term implications for the economy and economic indicators. It is possible that it also marks a permanent change in long-term wage growth trends, but it is too early to be sure about this.



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## Table of contents

1. [Introduction](#)
2. [Changes in earnings of employees in the UK and its regions, 2002-12](#)
3. [Real earnings of employees in the private sector, UK and London](#)
4. [Real earnings of employees in the public sector, UK and London](#)
5. [Real incomes of the self-employed, UK and London](#)
6. [Implications of falling real wages](#)
7. [Box 1: Real wages and productivity](#)
8. [Conclusion](#)
9. [References](#)
10. [Appendix 1: Hours and employee jobs](#)
11. [Appendix 2: Average weekly earnings and inflation](#)
12. [Background notes](#)

# 1. Introduction

Average earnings of employees in the UK have fallen in real terms since 2009. This represents a change from the strong growth in real wages over the previous three decades. Although it is too early to be sure whether there has been a permanent change in the long-term trend, the decline in real wages has now been sustained for three consecutive years. Average earnings in real terms are now at similar levels to those of 2002-03. Therefore it is worth looking carefully at the evidence and its implications for the economy and economic indicators.

In this article, average earnings are presented in both 'nominal' and 'real' terms. By contrast with nominal earnings, which are expressed in the prices prevailing at the time ('current prices'), real earnings adjust the nominal values for past years to remove the effect of inflation. For most of this article we use data for 2002 to 2012 from the Annual Survey of Hours and Earnings (ASHE) and present real earnings in '2012 constant prices', or 2012 money (see **Background notes**).

The ASHE analysis looks at employees' gross hourly earnings excluding overtime<sup>1</sup>. Hourly earnings are analysed in preference to weekly earnings because this makes it easier to compare full-time and part-time workers. The median is used as a measure of the average (see **Background notes**). This article does not explore distributions of earnings around the average, but readers can download some information on distributions from our website (see **References**: ASHE tables).

It should be noted that this article looks only at changes in hourly earnings. These are just one aspect of labour market analysis in the context of the recent period of recession and slow growth. A full analysis would take into account a variety of factors including changes in working patterns, hours worked and involuntary underemployment. These may affect estimates of earnings in ways which are difficult to capture. For instance, involuntary underemployment in the form of temporary lay-offs or reduced hours affect a person's total earnings over a period of time even if their hourly pay rate is not affected. Although this is not the subject of the current article, Appendix 1 presents some data from ASHE on changes in hours worked over the 2002-12 period. Other changes have been documented in recent Office for National Statistics (ONS) articles and Statistical Bulletins (see for example **References**: Patterson, 2012; ONS, 2012c; and ONS, 2013b).

At the same time, the gross measure of pay used here does not capture the full impact of austerity measures introduced in recent years. Many of these affect net (rather than gross) pay via changes in taxation, National Insurance contributions and, for public sector workers, increases in employee pension contributions from April 2012. Thus, this article should not be interpreted as providing a full picture of the impact of the recession and economic slowdown on people's take-home pay.

The remainder of this article is organised as follows:

- Part 3 provides an overview of changes in nominal and real earnings of employees in the UK and its regions, using data from ASHE.
- Parts 4 and 5 take a more detailed look at the ASHE data on changes in real earnings of employees in the private and public sectors, focusing on the UK and London.
- Part 6 looks briefly at the self-employed, using information from the Family Resources Survey of the Department for Work and Pensions (DWP).
- Part 7 discusses the implications of falling real wages for the economy and for economic indicators produced by ONS.
- Part 9 concludes.

## Notes for introduction

1. Gross pay means pay **before** tax or other deductions, and excludes payments in kind; net pay or 'take-home' pay is pay **after** such deductions. The measure of gross hourly earnings from ASHE used in this article excludes overtime but includes incentive payments (see **Background notes**) as well as premium payments for shift work and night or weekend work not treated as overtime.

## 2. Changes in earnings of employees in the UK and its regions, 2002-12

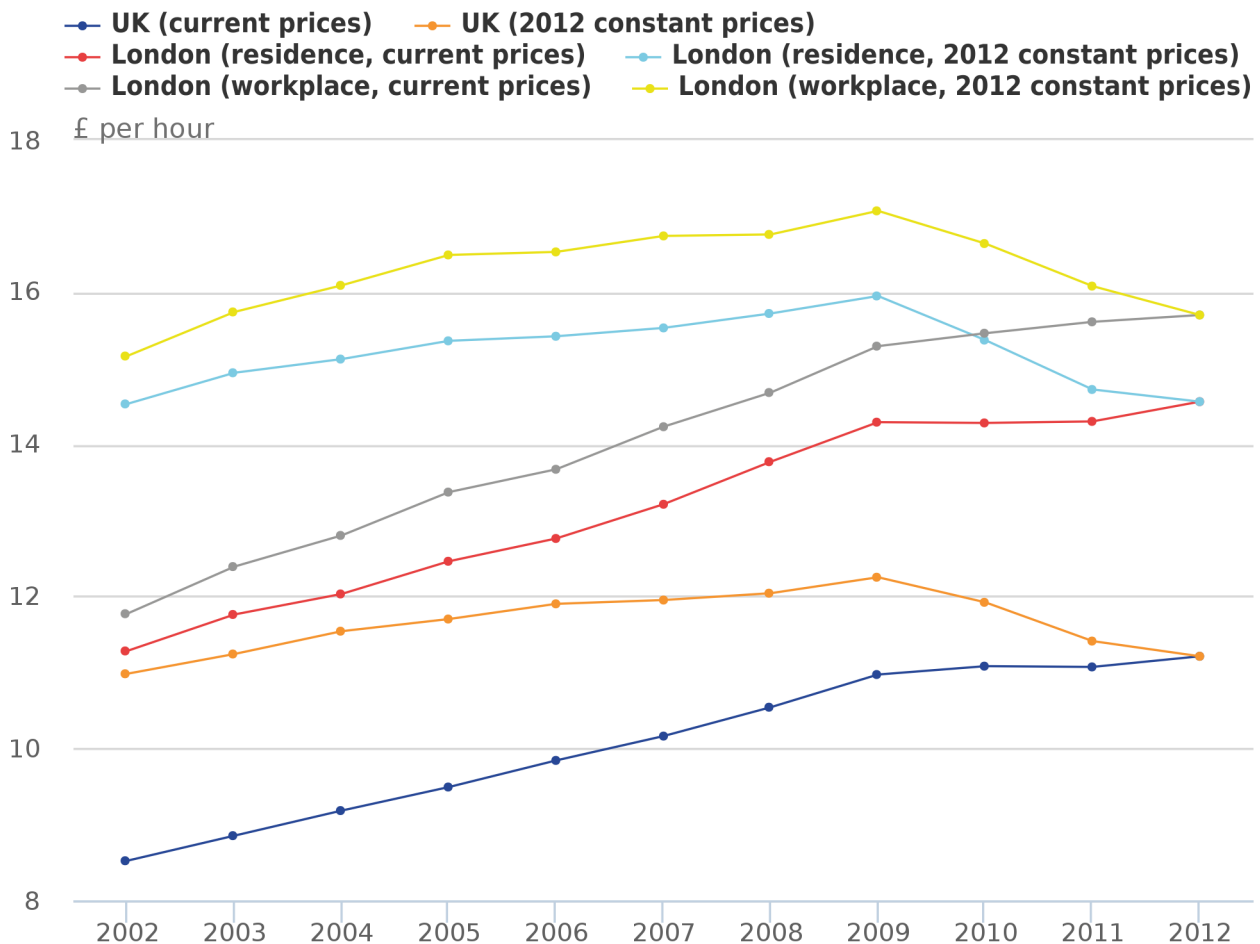
Figure 1 shows average (median) hourly earnings excluding overtime for employees in the UK and in London, from 2002 to 2012. By downloading the data associated with Figure 1, users can obtain information for all English regions and for Scotland, Wales and Northern Ireland.

In the seven years to 2009, UK employees' median hourly earnings grew by 3.7% a year on average in nominal (current price) terms. With relatively low inflation, median real earnings (in 2012 constant prices) grew by 1.6% a year on average. This continued a trend of positive growth in real earnings every year since the late 1970s, with the exception of periods of slightly negative growth lasting less than one year during the recessions of the early 1980s and 1990s<sup>1</sup>.

Since 2009 average nominal earnings of UK employees have remained quite flat. With Consumer Prices Index (CPI) inflation averaging 3.7% in the 12 months to April 2010, 2011 and 2012, there was a sharp fall in median earnings in real terms from their peak of £12.25 per hour (2012 prices) in 2009 to £11.21 per hour in 2012 – roughly the same as their real value in 2003. This may be because of pay freezes for people who remain in the same job or it may reflect changes in the composition of jobs that people do, with some high-paid jobs being cut as the economy adjusts following the shock of 2008-09 and more low-paid jobs being created. The 'average' earnings outcome for UK employees as a whole is probably the result of a combination of both pay freezes and economic restructuring.

The Average Weekly Earnings (AWE) indicator, which is the ONS's lead measure of changes in wages and salaries (see **Background notes**), supports this analysis. Although earnings levels recorded by the AWE and ASHE are not directly comparable, a comparison of changes in UK employees' total pay from the AWE with CPI inflation shows similar trends to the deflated ASHE data presented here: negative real wage growth in most months since mid-2008 (see Appendix 2).

**Figure 1: Median hourly earnings excluding overtime of all employees, UK and London**



Source: Annual Survey of Hours and Earnings, Office for National Statistics

**Notes:**

1. Results are for employees on adult rates of pay, whose pay for the survey pay period was not affected by absence
2. London is shown on a residence basis (for employees resident in London) and on a workplace basis (for employees working in London, including people commuting from outside London)
3. Real earnings (in 2012 constant prices) are calculated using the UK Consumer Prices Index (CPI) for the 12 months to April
4. A change in the weighting of ASHE onto a SOC2010 basis in 2011 explains some of the decrease in real wages since 2009. ONS analysts estimate that without the change to SOC2010, the annual average contraction in real earnings in 2010-12 would have been reduced from 2.9% to 2.7% for the UK and from 3.0% to 2.9% for London (residence basis)
5. There are two additional discontinuities in the series, in 2004 and 2006, due to improvements to the survey. In both cases, these slightly reduced the estimates of median earnings (in current prices) with respect to the methodology used previously, at a time when both nominal and real earnings were rising

Readers should note that between 2010 and 2011 ASHE was reweighted in line with the Standard Occupational Classification (SOC) 2010, having previously been on a SOC 2000 basis. This accounts for a small proportion of the decrease in real earnings in these years (see Figure 1, note 4), but does not materially alter the trends described above.

Figure 1 also shows median hourly earnings excluding overtime for employees living in London. Although London-resident employees earn more on average than UK employees, their median real earnings fell slightly faster than

the UK average from 2010 to 2012. In 2012, their median earnings were estimated at £14.56 per hour, similar to their real value in 2002. By contrast, employees working in London (including those commuting from outside London) experienced a less rapid decline in median real earnings in 2010-12 than was the case for employees in the UK as a whole. In 2012, their median earnings were estimated at £15.70 per hour, similar to their real value in 2003.

Although regional trends are similar on both residence and workplace bases (see the data behind Figure 1), for London average earnings are higher when presented on a workplace basis than when presented on a residence basis, while for the East and South East they are lower, reflecting the large numbers of people who commute to work into London from these regions. On the other hand, average earnings are higher on a residence basis than on a workplace basis for the East Midlands and, to a lesser extent, for the West Midlands.

The next two sections show trends for employees in the private and public sectors. It should be noted that the analysis is about changes in real earnings over time, not about differences between earnings levels in the two sectors. Although there is a pay gap between the private and public sectors, most of the gap can be explained by factors such as the type of jobs that people do and the differing proportions of men and women in the two sectors (see **References**: ONS, 2012b).

#### **Notes for changes in earnings of employees in the UK and its regions, 2002-12**

1. This is based on a time series of median gross weekly earnings of full-time employees going back to 1968, when the New Earnings Survey (NES) was introduced (see **Background notes**). Before 1989, wages are deflated using a modelled CPI series (see **References**: ONS, 2012e).

### **3. Real earnings of employees in the private sector, UK and London**

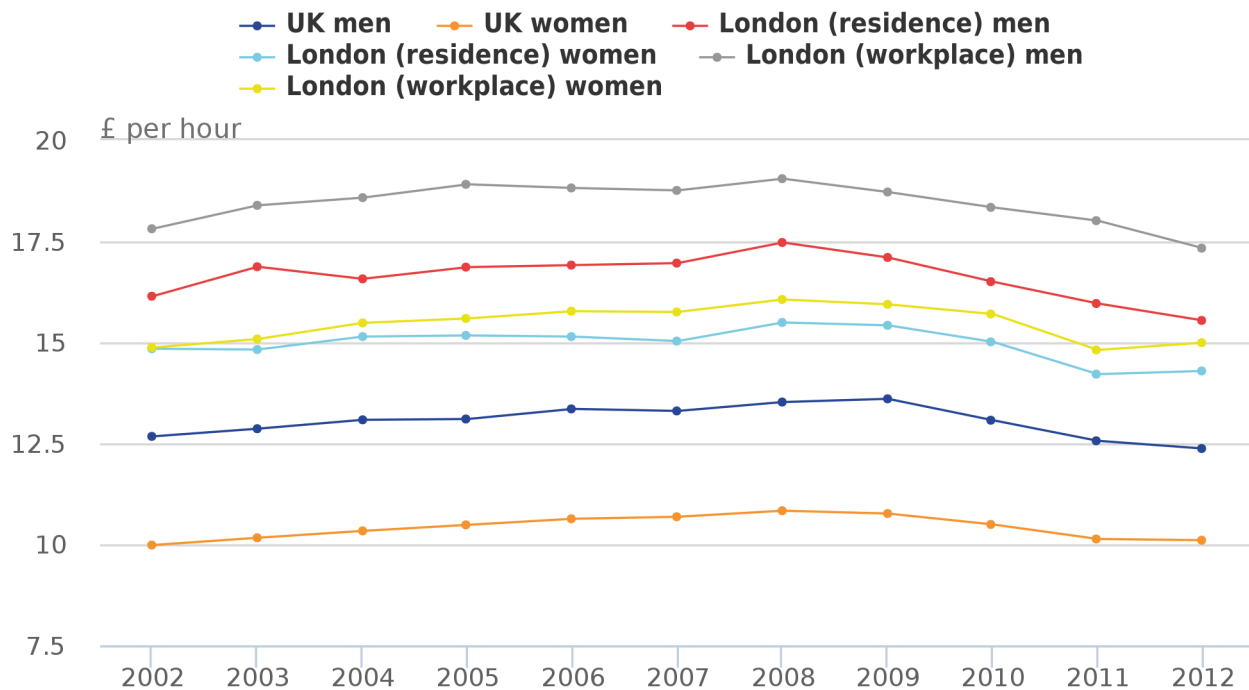
Figure 2 shows median real earnings (in 2012 constant prices) of full-time employees working in the private sector. For London, private sector full-time median earnings are generally higher on a workplace basis than on a residence basis, particularly for men. However, while at UK level full-time male employees in the private sector saw positive real wage growth until 2009 (except in 2007), in London male private sector employees experienced declining average wages in real terms in 2009 as well as in 2010, 2011 and 2012. As a result:

- Male full-time employees resident in London earned £15.54 per hour on average in 2012, compared with £16.14 in real terms in 2002 – a drop of 4%.
- On a workplace basis, male full-time employees in London earned £17.33 per hour on average in 2012, compared with £17.81 in real terms in 2002 – a drop of 3%.

Male full-time employees working in the private sector in London and in the UK as a whole have experienced a bigger fall in real wages over the past decade than 'all employees' including female full-time employees, part-time private sector employees and public sector workers (Figure 1).

For female private sector full-time employees in London, real wages also fell on both residence and workplace bases in 2009, 2010, 2011 and 2012. However, as was the case at UK level, the decline was less than for men. At UK level and in London on a workplace basis, female private sector full-time employees ended up with slightly higher real earnings in 2012 than in 2002.

**Figure 2: Median hourly earnings excluding overtime of full-time employees in the private sector, UK and London (2012 constant prices)**



Source: Annual Survey of Hours and Earnings, Office for National Statistics

**Notes:**

1. Results are for employees on adult rates of pay, whose pay for the survey pay period was not affected by absence.
2. London is shown on a residence basis (for employees resident in London) and on a workplace basis (for employees working in London, including people commuting from outside London)
3. Real earnings (in 2012 constant prices) are calculated using the UK Consumer Prices Index (CPI) for the 12 months to April
4. A change in the weighting of ASHE onto a SOC2010 basis in 2011 explains some of the decrease in real wages since 2009
5. There are two additional discontinuities in the series, in 2004 and 2006, due to improvements to the survey. In both cases, these slightly reduced the estimates of median earnings (in current prices) with respect to the methodology used previously, at a time when nominal and real earnings were rising
6. ASHE breakdowns by public and private sector are produced according to the legal status of the employers. Between 2008 and 2009 Lloyds Banking Group, the Royal Bank of Scotland Group and HBOS PLC were reclassified from the private sector to the public sector

Figure 3 shows median real earnings (in 2012 constant prices) of part-time employees working in the private sector. Such workers have lower median hourly earnings than their full-time counterparts, and the male-female pay gap is narrower. In London, part-time women employees in the private sector have slightly higher median earnings than part-time men.

Part-time private sector employees' experience of median real earnings growth in recent years has been different from that of full-time employees in the private sector. At UK level, median real earnings fell in 2008 before recovering in 2009 and falling again in 2010-12. At London level, there was a similar 'double dip' pattern – with the first 'dip' starting in 2007 in some cases – for male and female part-time employees on a workplace basis and for male part-time employees on a residence basis. For female part-time employees on a London residence basis, real wage growth has been relatively weak since 2005. Nevertheless, for all the part-time employee groups shown in Figure 3 except resident women, median real earnings were higher in 2012 than in 2002.

**Figure 3: Median hourly earnings excluding overtime of part-time employees in the private sector, UK and London (2012 constant prices)**



Source: Annual Survey of Hours and Earnings, Office for National Statistics

**Notes:**

1. Results are for employees on adult rates of pay, whose pay for the survey pay period was not affected by absence.
2. London is shown on a residence basis (for employees resident in London) and on a workplace basis (for employees working in London, including people commuting from outside London)
3. Real earnings (in 2012 constant prices) are calculated using the UK Consumer Prices Index (CPI) for the 12 months to April
4. A change in the weighting of ASHE onto a SOC2010 basis in 2011 explains some of the decrease in real wages since 2009
5. There are two additional discontinuities in the series, in 2004 and 2006, due to improvements to the survey. In both cases, these slightly reduced the estimates of median earnings (in current prices) with respect to the methodology used previously, at a time when nominal and real earnings were rising
6. ASHE breakdowns by public and private sector are produced according to the legal status of the employers. Between 2008 and 2009 Lloyds Banking Group, the Royal Bank of Scotland Group and HBOS PLC were reclassified from the private sector to the public sector

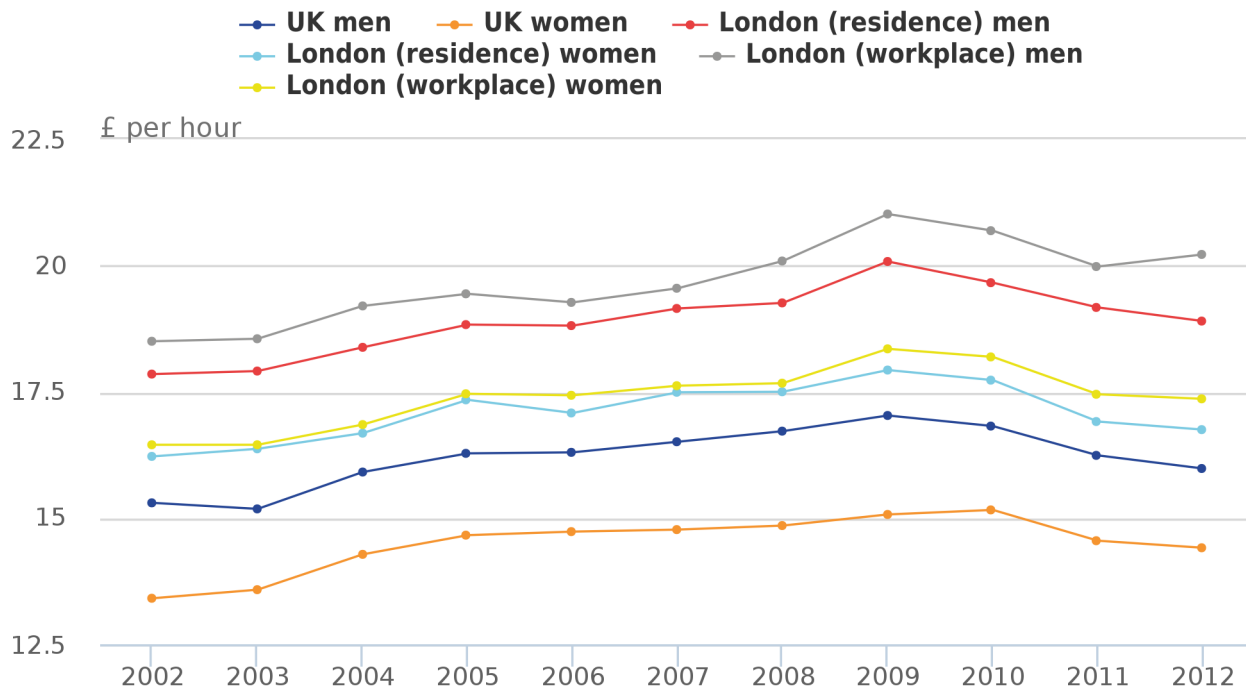
## 4. Real earnings of employees in the public sector, UK and London

The government's June 2010 Budget announced a two-year pay freeze for public sector employees starting in 2011/12, but full-time public sector workers' average earnings had already begun to decline in real terms before the pay freeze began.

Figure 4 shows median real earnings (in 2012 constant prices) of full-time employees working in the public sector. The trends are similar to those affecting their counterparts in the private sector, although the increase in 2002-09 is stronger and the fall in median real earnings is less marked than in the private sector: for instance, in 2010 to 2012 the decline in median real earnings averaged 2.1% per year for full-time male public sector workers in the UK compared with 3.1% per year for their private sector counterparts.

For full-time public sector workers, the fall in median real wages was delayed for longer after the start of the 2008-09 recession than in the case of full-time private sector workers. For men at UK level and for all of the groups analysed in London, real earnings of public sector full-time employees continued to rise until 2009; for UK women they continued to rise until 2010. By contrast, for private sector full-time employees the decline began in 2009 for most of the groups analysed (see Figure 2).

**Figure 4: Median hourly earnings excluding overtime of full-time employees in the public sector, UK and London (2012 constant prices)**



Source: Annual Survey of Hours and Earnings, Office for National Statistics

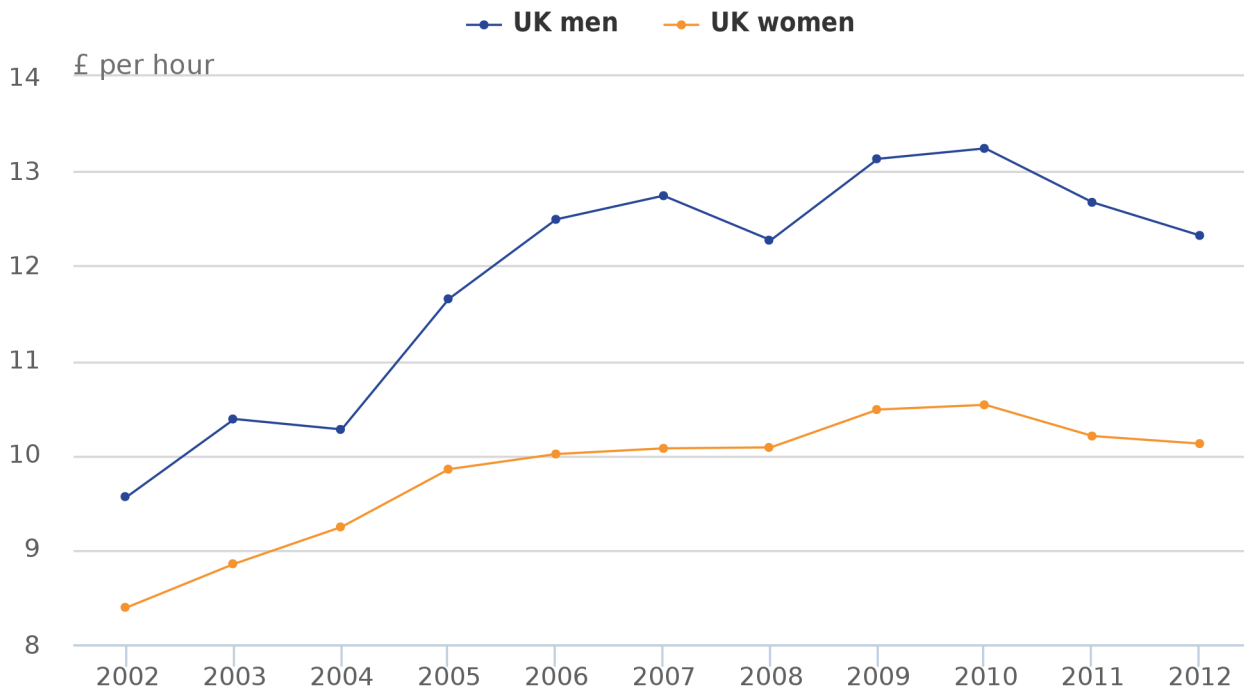
Notes:

1. Results are for employees on adult rates of pay, whose pay for the survey pay period was not affected by absence
2. London is shown on a residence basis (for employees resident in London) and on a workplace basis (for employees working in London, including people commuting from outside London)
3. Real earnings (in 2012 constant prices) are calculated using the UK Consumer Prices Index (CPI) for the 12 months to April
4. A change in the weighting of ASHE onto a SOC2010 basis in 2011 explains some of the decrease in real wages since 2009
5. There are two additional discontinuities in the series, in 2004 and 2006, due to improvements to the survey. In both cases, these slightly reduced the estimates of median earnings (in current prices) with respect to the methodology used previously, at a time when nominal and real earnings were rising
6. ASHE breakdowns by public and private sector are produced according to the legal status of the employers. Between 2008 and 2009 Lloyds Banking Group, the Royal Bank of Scotland Group and HBOS PLC were reclassified from the private sector to the public sector.



As a result of the combination of relatively strong increases in real wages in 2002-09 and the delayed impact of the 2008-09 recession on public sector pay, full-time employees in the public sector in the UK and in London had higher median real earnings in 2012 than in 2002. However, these figures show changes in gross earnings only; as explained above, they do not show take-home pay, which, in the public sector, was affected by increases in pension contributions from April 2012.

**Figure 5: Median hourly earnings excluding overtime of part-time employees in the public sector, UK (2012 constant prices)**



Source: Annual Survey of Hours and Earnings, Office for National Statistics

Notes:

1. Results are for employees on adult rates of pay, whose pay for the survey pay period was not affected by absence
2. Real earnings (in 2012 constant prices) are calculated using the UK Consumer Prices Index (CPI) for the 12 months to April
3. A change in the weighting of ASHE onto a SOC2010 basis in 2011 explains some of the decrease in real wages since 2009
4. There are two additional discontinuities in the series, in 2004 and 2006, due to improvements to the survey. In both cases, these slightly reduced the estimates of median earnings (in current prices) with respect to the methodology used previously, at a time when nominal and real earnings were rising
5. ASHE breakdowns by public and private sector are produced according to the legal status of the employers. Between 2008 and 2009 Lloyds Banking Group, the Royal Bank of Scotland Group and HBOS PLC were reclassified from the private sector to the public sector

Figure 5 shows results for part-time public sector employees. It shows the UK only because some of the results at London are unreliable for this type of analysis, where we are interested in detecting small changes over time. As in the private sector, part-time workers in the public sector have lower median hourly earnings than their full-time counterparts. However, in the public sector there is a large gap between median earnings of part-time male and female employees. This may reflect the type of job done by male and female part-time workers in the public sector.

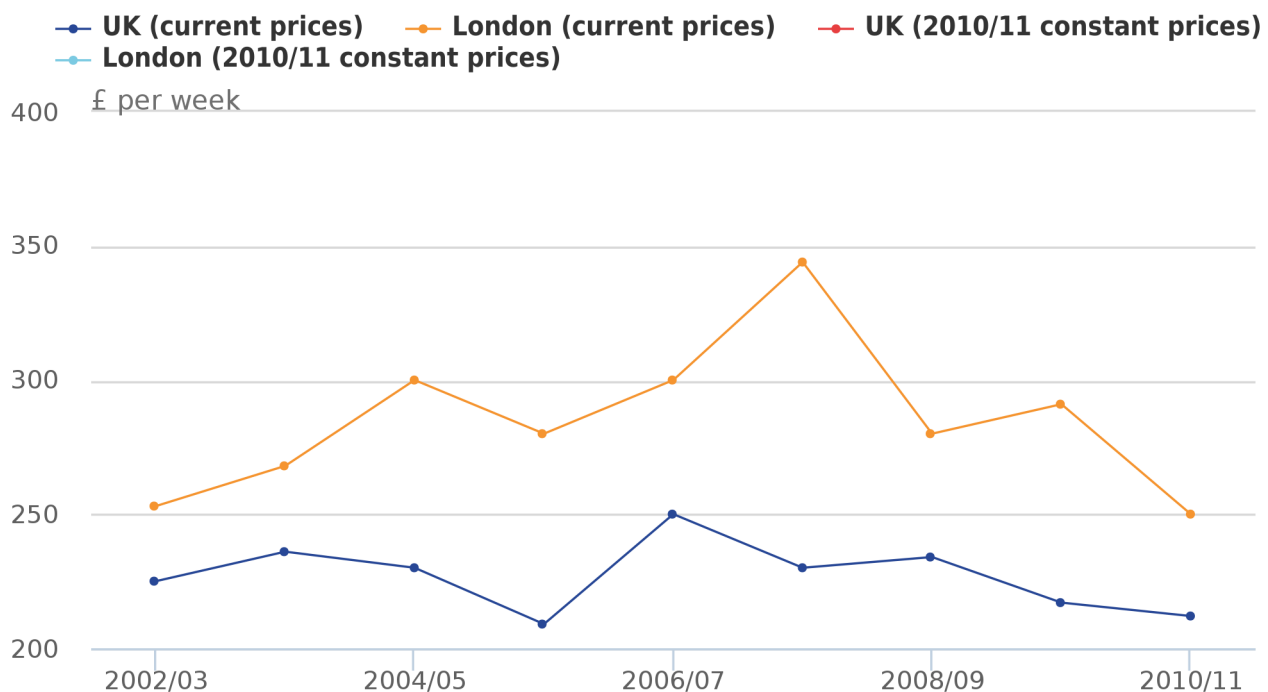
In the UK public sector, part-time male workers' median real earnings growth was negative in 2008; but it recovered strongly in 2009-10 before continuing to decline in 2011-12. Part-time female workers experienced positive changes in median real earnings every year from 2002 until 2010, and only saw decreases in 2011-12.

Over the decade to 2012, male part-time employees' median real earnings rose by 29%, while those of their female counterparts rose by 21%. This contrasts with the experience of private sector part-time employees, where, for the UK, increases in median real earnings were 4% and 5% respectively over this period (Figure 3).

## 5. Real incomes of the self-employed, UK and London

In April-June 2012, self-employed people comprised 14% of people in employment in the UK and 18% of people in employment in London, according to ONS's Labour Force Survey (see **References:** ONS, 2013c). ASHE does not collect information on the self-employed. However, data on incomes of self-employed people is collected by DWP in its Family Resources Survey.

**Figure 6: Median income from self-employment of people living in the UK and London**



**Source:** Family Resources Survey, Department for Work and Pensions

**Notes:**

1. Location is defined on a residence basis
2. Income is gross income of adults. Income from self-employment is only for those whose main employment status is 'self-employed'; it does not include amounts earned from self-employment by others e.g. employees
3. Real earnings (in 2010/11 constant prices) are calculated using the UK CPI for April-March

Figure 6 shows a time series from 2002/03 to 2010/11 (the latest year available) of median real income per week from self-employment. Income from self-employment is quite variable, making it hard to interpret the trends. However, the pattern suggests that the effects of the recession began to be felt in the UK in 2007/08 and in London in 2008/09. Between 2007/08 and 2010/11 median real income from self-employment (in 2010/11 constant prices) fell by 16% for the UK as a whole and by one-third (from a higher starting point) for people living in London. This may reflect underlying changes following the recession, such as increases in the numbers of self-

employed people which have not been matched by increases in the amount of work available, resulting in rising underemployment rates among the self-employed (see **References**: ONS, 2013c).

## 6. Implications of falling real wages

In the short term, businesses are the main beneficiary of falling real wages. Lower labour costs may help them to survive an economic downturn and to avoid job cuts. In the longer term, they may influence firms' investment decisions, for instance by encouraging them to use more labour and less machinery. If this kind of 'factor substitution' is sustained, it could contribute to a reduction in productivity, with the risk that firms may become less competitive. In the private sector, falling real wages may also be a reflection of a change in the composition of jobs on offer, reflecting a shift in the structure of the economy towards less productive jobs for other reasons.

For people and households, falling real wages implies falling purchasing power (unless they can work longer hours to compensate or borrow to finance their spending). Many families will have to reduce expenditure and may change their spending habits, looking for cheaper goods and services. This, in turn, will have an impact on demand for what businesses produce. UK businesses may have to look for alternative markets either at home or – in the face of weak domestic demand – abroad. As well as reducing demand for basic items such as food and clothing, falling real wages are likely to have an impact on markets for major assets such as property. Thus housing demand and house price growth tend to remain subdued when real wages are falling.

As a major employer, the government saves money if nominal wages are frozen, as is currently the case in the public sector. In addition, the government is a major provider of welfare benefits. In the context of austerity, the government has argued the case for saving money by capping increases in working-age welfare benefits to reflect the falling real earnings of employees in the private sector. The size of the government's pension liability would also be reduced if it used negative (or lower) projections of real wage growth, reflecting recent years' data.

Finally, falling real wages may have implications for the calculation of economic indicators produced by ONS. An example of this is productivity. The ONS Productivity Handbook notes that according to the economist Paul Krugman, productivity is one of the most important economic indicators because "A country's ability to improve its standard of living over time depends almost entirely on its ability to raise output per worker" (see **References**: Camus, 2007, Chapter 1).

However, analysis by ONS (see **References**: Grice, 2012 and Patterson, 2012) points to evidence of a 'productivity conundrum' (or puzzle) in recent years: labour productivity in the UK fell during the 2008-09 recession and, by contrast with the previous two recessions of the early 1980s and early 1990s, it has not recovered since then. Real wage trends may help to resolve this puzzle, not just because a sustained fall in real wages may lead to factor substitution, as described above, but because it may affect the calculation of real GVA and GDP (see **Box 1: Real wages and productivity**).

## 7. Box 1: Real wages and productivity

ONS publishes labour productivity statistics every quarter. These include output per worker and output per hour worked (see **References**: 2013a). The output side of the equation is based on Gross Value Added (GVA). GVA plus taxes (less subsidies) on products is equivalent to Gross Domestic Product (GDP). Around two-thirds of GDP consists of 'compensation of employees', which is predominantly workers' earnings.

ONS's productivity statistics use the chained volume measure of GVA. This removes price effects so that output is expressed in real terms. In the National Accounts, changes in real wage trends may affect the deflators used to calculate the various elements of the chained volume measure of GVA. ONS is investigating the methods used to deflate GVA as part of its research into the productivity conundrum and its GDP continuous improvement programme.

## 8. Conclusion

Median real wages in the UK have fallen since 2009 and are now at similar levels to what they were a decade ago. There are some geographical differences. For instance, employees working in London earn more on average than UK employees and their median real earnings fell less rapidly than the UK average from 2010 to 2012.

There are also differences between the private and public sectors, and between full- and part-time employees. Full-time male employees in the private sector have seen the greatest reductions in real earnings since the 2008-09 recession. In 2012 their median earnings were worth less in real terms than in 2002. On the other hand, at UK level and in London on a workplace basis, full-time female private sector employees ended up with slightly higher real earnings in 2012 than in 2002.

Full-time public sector employees have also experienced declining real wages since the 2008-09 recession. However, the decline started later and followed strong growth in earlier years. Therefore, their median real earnings remained higher in 2012 than a decade earlier.

For part-time employees, there was less of a decrease in real earnings following the recession and, for most of the groups analysed, there was an increase in the decade to 2012. This was particularly evident in the public sector, where male part-time employees' median real earnings rose by 29% between 2002 and 2012, while those of their female counterparts rose by 21%.

The available evidence suggests that for the self-employed, on the other hand, there was a sharp decline in median real income between 2007/08 and 2010/11 (the latest year available). This was particularly so in London, where median real income from self-employment fell by one-third over this period. The weakness of real earnings explored in this article may be a short-term phenomenon or a change in trend. In either case, it will have important implications for people and households, businesses, government spending and the economy as a whole. It may also have implications for some of ONS's economic indicators, such as the measure of productivity.

## 9. References

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2. ASHE tables

Annual Survey of Hours and Earnings (ASHE) published tables are available at: [www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/index.html](http://www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/index.html)

3. ASHE Nomis data

Time series data from ASHE can be downloaded via the Nomis website: [www.nomisweb.co.uk](http://www.nomisweb.co.uk)

4. ASHE request 848

An 'ad hoc data and analysis' table entitled 'Historical median and percentile gross weekly earnings time-series, GB and UK 1968 to 2012' was published in December 2012 as Request No. 000848 at [www.ons.gov.uk/ons/about-ons/what-we-do/publication-scheme/published-ad-hoc-data/labour-market/december-2012/index.html](http://www.ons.gov.uk/ons/about-ons/what-we-do/publication-scheme/published-ad-hoc-data/labour-market/december-2012/index.html)

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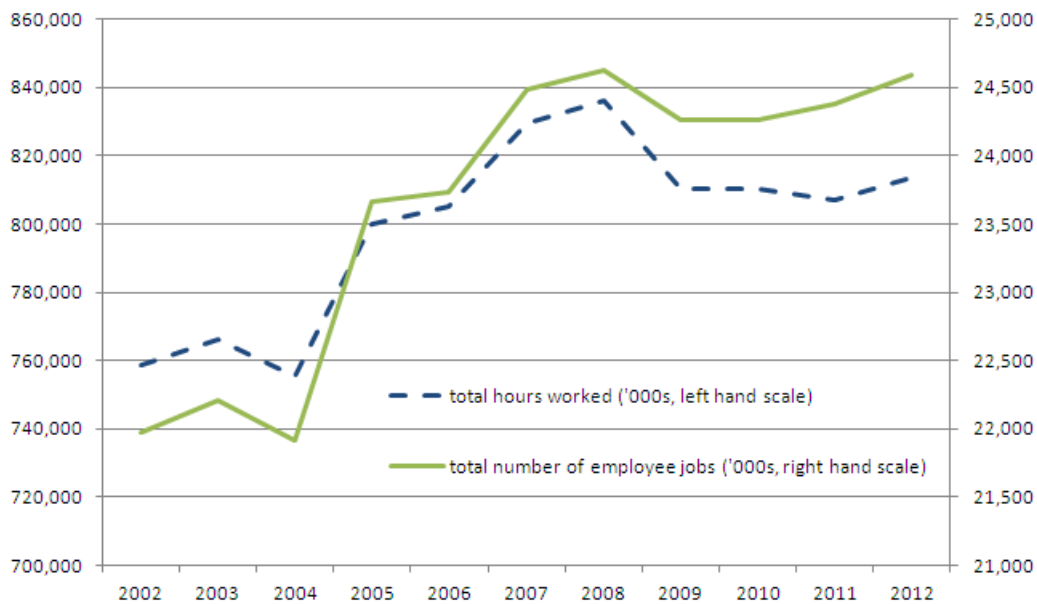
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## 10. Appendix 1: Hours and employee jobs

**Figure A1: Hours worked and number of employee jobs, 2002-12 (UK)**

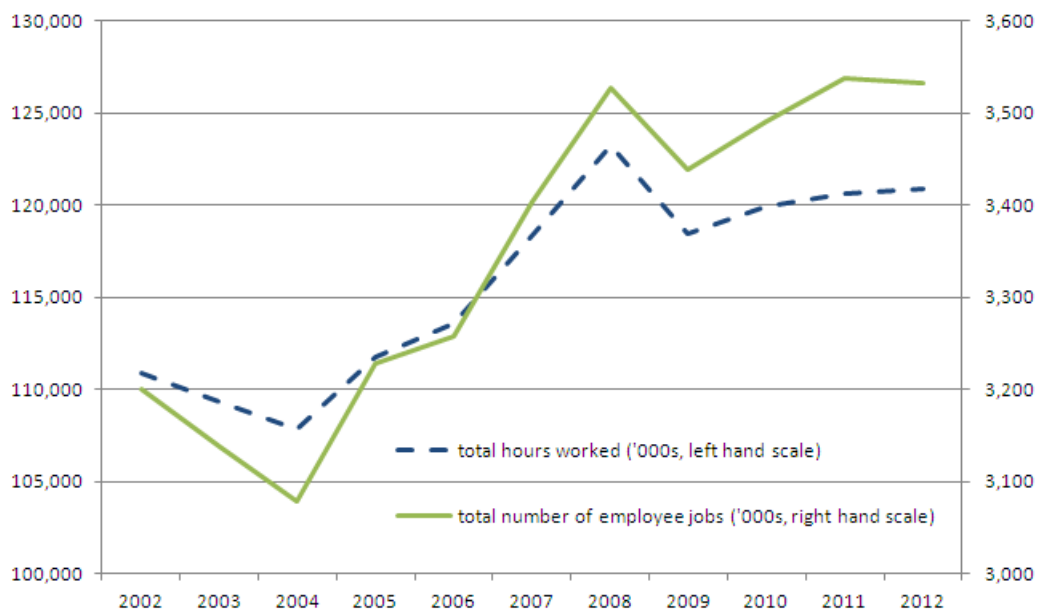


**Source: Annual Survey of Hours and Earnings (ASHE) - Office for National Statistics**

### Notes:

1. Results are for employees on adult rates of pay, whose pay for the survey pay period was not affected by absence. There are three discontinuities in the series: in 2004 and 2006, due to improvements to the survey, and in 2011 due to a change in the weighting of ASHE from a SOC2000 onto a SOC2010 basis.

**Figure A2: Hours worked and number of employee jobs, 2002-12 (London)**



Source: Annual Survey of Hours and Earnings (ASHE) - Office for National Statistics

**Notes:**

1. Results are for employees on adult rates of pay, whose pay for the survey pay period was not affected by absence.
2. London is defined on a workplace basis.
3. There are three discontinuities in the series: in 2004 and 2006, due to improvements to the survey, and in 2011 due to a change in the weighting of ASHE from a SOC2000 onto a SOC2010 basis.

**Figure A3: Hours per employee job, 2002-12 (UK and London)**



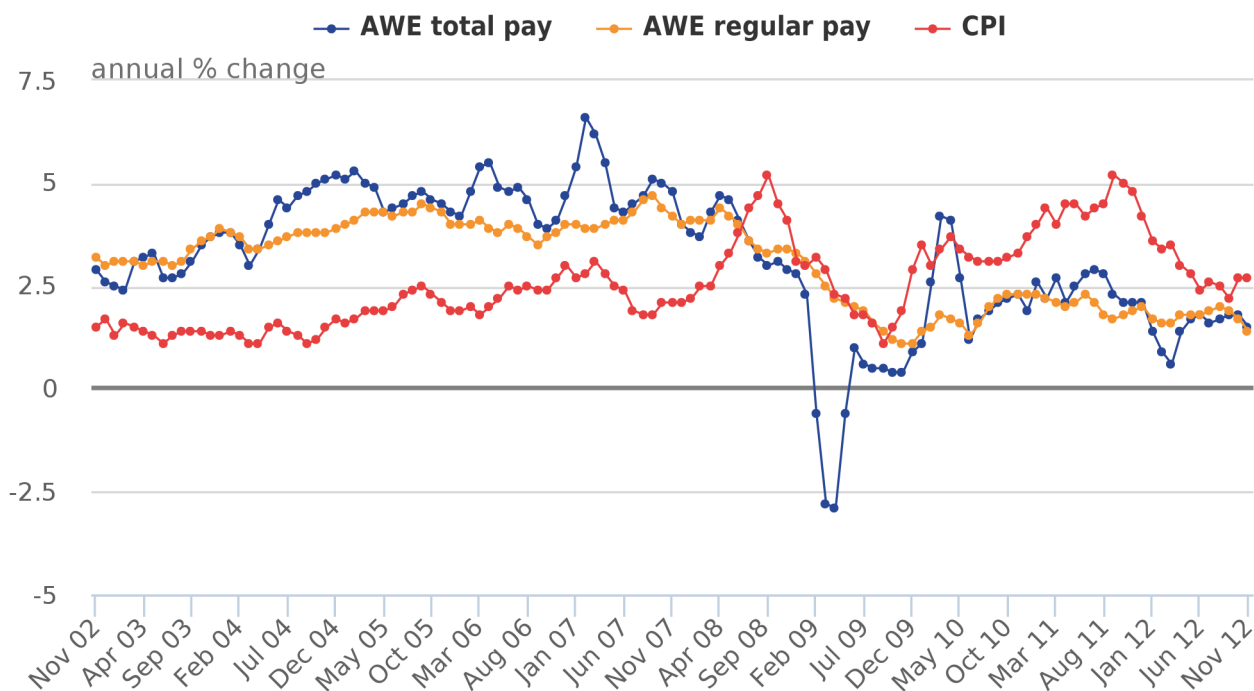
Source: Annual Survey of Hours and Earnings (ASHE) - Office for National Statistics

**Notes:**

1. Results are for employees on adult rates of pay, whose pay for the survey pay period was not affected by absence
2. London is defined on a workplace basis
3. There are three discontinuities in the series: in 2004 and 2006, due to improvements to the survey, and in 2011 due to a change in the weighting of ASHE from a SOC2000 onto a SOC2010 basis

## 11. Appendix 2: Average weekly earnings and inflation

Figure A4: Change in Average Weekly Earnings and CPI inflation



Source: Office for National Statistics

Notes:

1. The Consumer Prices Index (CPI) series is for the UK and is compiled from prices data based on a large and representative selection of individual goods and services. The Average Weekly Earnings (AWE) series are for GB and are sourced from the Monthly Wages and Salaries Survey
2. Estimates of regular pay in the AWE series exclude bonuses and arrears of pay. Estimates of total pay in the AWE series include bonuses but exclude arrears of pay
3. The AWE figures are based on three month averages: they show the changes in the average seasonally adjusted values for the three months ending with the relevant month compared the same period a year earlier. The CPI figures are single-month figures, not seasonally adjusted
4. The AWE estimate for November 2012 is provisional

## 12. Background notes

1. The Annual Survey of Hours and Earnings (ASHE) is an ONS survey based on a 1% sample of employee jobs taken from HM Revenue and Customs PAYE records. Information on earnings and hours is obtained from employers and treated confidentially. ASHE does not cover the self-employed nor does it cover employees not paid during the reference period. The reference period for the survey is in April of each year. In ASHE, full-time employees are defined as those who work more than 30 paid hours per week or those in teaching professions working 25 paid hours or more per week.



2. A time series of weekly earnings of full-time employees from the New Earnings Survey (NES) and ASHE, starting in 1968, is available from the 'ASHE request 848' (see **References**). Before 1997, the data is on a GB-only basis. Information for the UK is available from 1997 when ASHE was introduced.
3. ONS also collects information on earnings from the Monthly Wages and Salaries Survey, which is used to construct the Average Weekly Earnings (AWE) indicator. This survey asks 9,000 employers to provide information about total pay and numbers of employees, and is ONS's lead measure of changes in the level of earnings. However, it does not permit the kinds of breakdowns that are possible using ASHE.
4. The Family Resources Survey (FRS) is a Department for Work and Pensions (DWP) survey designed to provide information about living conditions and resources. In the period 2002/03 to 2010/11 it covers the UK, with an achieved sample of around 24,000 households a year. Data is collected throughout the year, starting in April and ending in March.
5. The analysis presented here is based on the median rather than the mean. The median is the value below which 50% of employees/self-employed people fall. It is ONS's preferred measure of average earnings as it is less affected than the mean by the relatively small number of very high earners and the skewed distribution of earnings. It therefore gives a better indication of typical pay than the mean.
6. This analysis uses a deflator based on the UK Consumer Prices Index (CPI) to calculate real earnings over time. The Figures show past years' median earnings expressed in 'constant prices' of the latest period for which data is available: 2012 for ASHE and 2010/11 for the FRS. In the case of ASHE, the calculations use the annual percentage change in the CPI to April each year (the month when ASHE data is collected); in the case of the FRS, the calculations use the average annual percentage change in the CPI over the survey months (April to March) of each year, for instance 2010/11 uses April 2010 to March 2011 data.
7. The ASHE analysis excludes results where pay was affected by absence in the relevant pay period. This is standard practice for such analysis, but readers should note that it may lead to overestimates of hourly pay when there is involuntary underemployment, as has been the case during the recent economic downturn (see **References**: ONS 2012c). This is because employers may use enforced absences or reduced hours to cut costs and prevent job losses. In such cases, average hourly earnings over a period of time would be affected even if hourly pay is not affected while the person is working.
8. The measure of gross hourly earnings from ASHE used in this article includes incentive payments, which are defined as profit sharing, productivity, performance and other bonus or incentive pay, piecework and commission. However, in ASHE such payments only relate to work carried out in the relevant pay period. A time series and further analysis for bonus payments can be found in the AWE (see **References**: Anyaegbu, 2012).
9. In the National Accounts, Gross Value Added (GVA) is the total value of output of goods and services produced less the goods and services used up to produce the output.
10. Details of the policy governing the release of new data are available by visiting [www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html](http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html) or from the Media Relations Office email: [media.relations@ons.gsi.gov.uk](mailto:media.relations@ons.gsi.gov.uk)

These National Statistics are produced to high professional standards and released according to the arrangements approved by the UK Statistics Authority.