

## ANNUAL SURVEY OF HOURS & EARNINGS (ASHE) 2007

### Background information about ASHE

The Annual Survey of Hours and Earnings (ASHE) provides information about the levels, and range of earnings and hours worked, for employees in all industries and occupations.

The Office for National Statistics developed ASHE to improve the methodology and accuracy of earnings data, especially around the collection of data relating to allowances and incentive pay.

A number of methodological changes were introduced in 2007. In light of these changes, revisions were retrospectively made to the 2006 figures. The results from these two years are therefore not directly comparable with those from previous years.

The latest data was released in November 2007 and relates to employees who were employed on the 18<sup>th</sup> April 2007. This excludes employees not paid during the pay period including 26th April 2007 and those who are self-employed. The survey is based on a random 1% sample of employees (using their national insurance number), which was equivalent to approximately 250,000 in 2006. The sample size has, however, been reduced by 20% in 2007. Information on earnings and hours is obtained in confidence from employers, via a postal questionnaire and in some instances the data is provided electronically.

However, for an area the size of Herefordshire, due to the relatively small sample size, it is not advisable to look at changes over time periods of less than a 5-year period. Furthermore, due to the methodological changes made in 2007, we are limited to just comparing the previous 2 years.

The ASHE survey provides data on earnings for employees: gross annual, weekly and hourly pay (including and excluding overtime) and hours worked (including and excluding overtime). It also provides a breakdown of earnings by gender and full/part-time workers. This information is available down to local authority level and for parliamentary constituencies. Earnings by occupation and industry are available but only at a national level.

There are two sets of figures of earnings data for Herefordshire:

- **Work based** – all people who work in Herefordshire regardless of which county they live in, and
- **Residence based** – people who live in Herefordshire i.e. including those who work outside the county.

Both of these data sets are useful and provide information for different purposes. Work based earnings are what people can earn in Herefordshire, providing information about levels of pay for jobs in the county whereas residence based earnings are what people living in Herefordshire earn so can give us a better view of spending power and the wider economy in Herefordshire.

In order to give a better picture of earnings a 'median' figure has been used rather than the 'mean'. Both are considered averages, but the term 'average' is more generally associated with the mean. The median provides a 'mid-point' figure for earnings such that half of all employees earn less than this amount, and half earn more. The mean can be skewed by a small proportion of high earners. For example the *mean* gross weekly earnings for full time employees working in Herefordshire in 2007 were £475.10 whilst the figure for *median* earnings was £384.40. Lower quartile earnings are used to show the lower end of the scale of earnings, the amount that a quarter (25%) of the population earn less than and 75% earn more than.

For the purpose of this article, general analysis and comparative statistics focus on earnings of full-time employees. Data for part-time employees is available but the difference within this category can be very large, as it includes those who work for anything up to 35 hours. The proportions of part-time workers also vary across different authorities, making it difficult to compare earnings in a meaningful way.

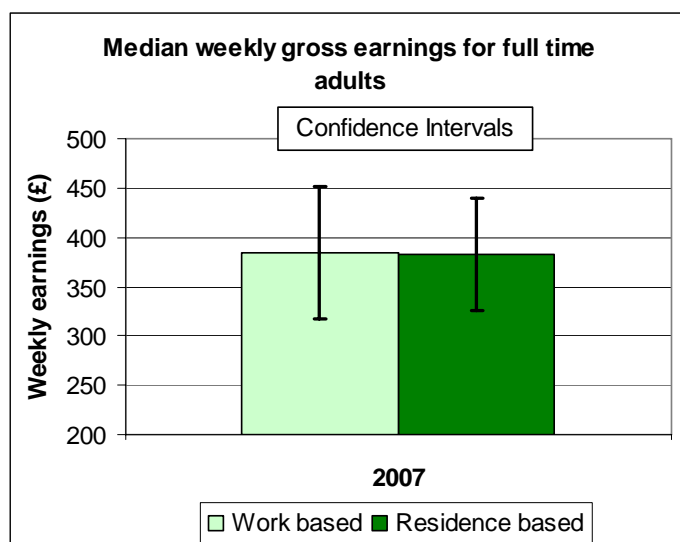
## Confidence intervals

Periodically, this article will refer to confidence intervals around earnings values, below is an explanation of what a 'confidence interval' is and what it means for using these figures.

Surveying a large enough sample of employee jobs enables an estimate of the level of earnings in the county to be made; these figures are published along with coefficients of variation which enables the calculation of a confidence interval for each figure. Confidence intervals (C.I.) give an indication of the possible margin of error around these estimates. The smaller the sample size and the greater the degree of variation, the wider the C.I. will be. For example, the 2007 ASHE results states the average earnings<sup>1</sup> in Herefordshire were £384.40 per week and the 95% confidence interval suggests that the average earnings for all those working in Herefordshire could lie within + or - £66 of this figure.

It is important to use confidence intervals when making comparisons using results drawn from sample surveys, as differences seen between the published figures may not be statistically significant. For example, if the ranges of the confidence interval for each of the estimates overlap with each other then it is possible that the 'true values' are actually the same.

Chart 1. Confidence Intervals of 2007 work based and residence based median gross weekly earnings.



In 2007, the published figure for residence based earnings was £383.30 and the figure for work based earnings was £384.40, which suggests that work based earnings were slightly higher than residence based.

However the confidence levels around both of these figures overlap (see Chart 1) which show that statistically there is no measurable difference between earnings of those who work in Herefordshire and earnings of those who live in Herefordshire but do not necessarily work in the county.

When confidence intervals are referred to they will be shown as  $\pm$  £0.00, i.e. plus or minus however many pounds from the published figure.

<sup>1</sup> Work based median weekly gross earnings for full time adult workers

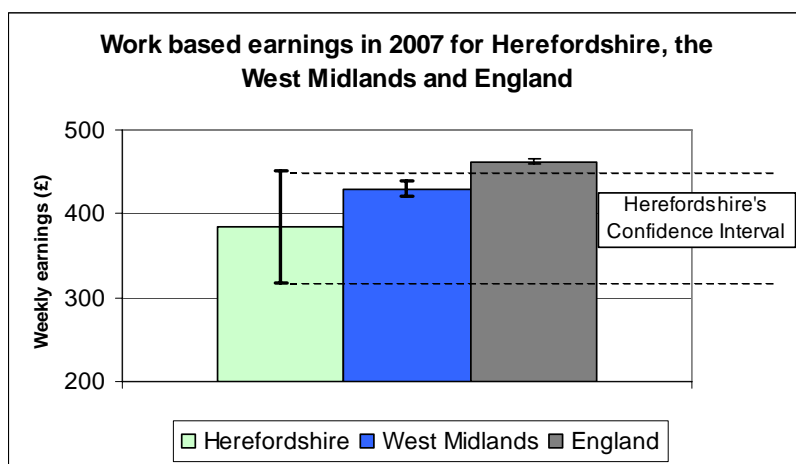
## Latest results

### Average WORK BASED gross earnings for full-time employees (adults only)

In 2007, the **median weekly earnings** for people who work in Herefordshire were **£384.40** ( $\pm$  £66.30).

The published figures for Herefordshire's earnings appear lower than both the equivalent earnings in the West Midlands region and England. However, taking into account the large confidence interval around Herefordshire's median weekly earnings, the observed difference between Herefordshire and the West Midlands is not statistically significant, so we can only say Herefordshire's earnings are lower than those for England as a whole with any confidence. See Chart 2.

Chart 2.



In 2007, median weekly gross earnings were £430.00 ( $\pm$  £8.40) in the West Midlands region and £462.00 ( $\pm$  £2.70) in England.

In 2007, Herefordshire's work based gross **median annualised<sup>2</sup> earnings** were **£20,043.71** ( $\pm$  £3,457.14) compared with £22,421.43 ( $\pm$  £439.46) for the West Midlands and £24,090.00 ( $\pm$  £141.60) for England.

The **median hourly earnings** (excluding overtime) for people working in Herefordshire were **£8.99** ( $\pm$  £0.88) compared with £10.53 ( $\pm$  £0.19) in the West Midlands region and £11.50 ( $\pm$  £0.05) in England.

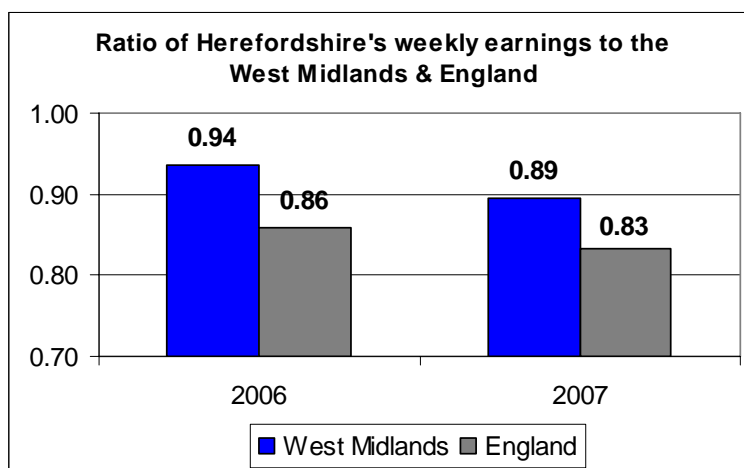
<sup>2</sup> Annual salaries are provided by ASHE but they only include earnings of those who are employed in the same job for a year whereas weekly earnings include all workers. Therefore annualised salaries were calculated using median weekly earnings, which includes more employees.

Unless otherwise stated the copyright in this material is owned by the Herefordshire Council and no responsibility is accepted for any use made of or reliance placed upon the material.

Chart 3 presents the ratio of Herefordshire's earnings compared to regionally and nationally over the past few years and allows us to monitor whether the gap between earnings in Herefordshire and elsewhere has got larger or smaller. We calculate the ratios by dividing Herefordshire's earnings by those for the comparator area to give one figure that shows the gap e.g. Herefordshire's earnings (£384.40) divided by England's earnings (£462.00) which gives a ratio of 0.83. Therefore Herefordshire's earnings are 83% of those nationally i.e. 17% lower.

The limitation of these ratios is that they do not take into account confidence intervals around the published figures. Also there may be year-on-year fluctuations of local data. However this is still the best method of tracking longer term changes in Herefordshire's earnings relative to those regionally and nationally.

Chart 3.



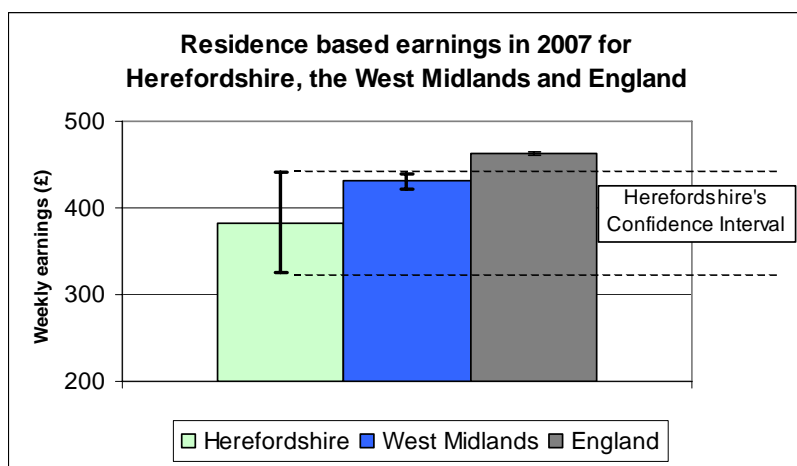
In 2007, the only statistically significant difference was that Herefordshire's weekly earnings were lower than England's weekly earnings as represented in Chart 3 by a ratio of 0.83. A similar pattern was seen in 2006, when statistically Herefordshire's earnings were only lower than those in England.

This suggests that the ratios for Herefordshire's earnings compared to the West Midlands region in 2006 and 2007 should be used as a guide with some caution.

**Average RESIDENCE BASED gross earnings for full-time employees (adults only)**

In 2007, the **median weekly earnings** for people who live in Herefordshire were **£383.30** ( $\pm$  £57.10), compared with £430.40 ( $\pm$  £8.40) in the West Midlands and £462.60 ( $\pm$  £2.70) in England.

Chart 4.



Similarly to work based earnings, Herefordshire's earnings are lower than those for England as a whole but the difference with those regionally is not statistically significant.

In 2007, Herefordshire's annualised earnings were **£19,986.36** ( $\pm$  £2,977.20) compared with £22,442.29 ( $\pm$  £439.90) for the West Midlands and £24,121.29 ( $\pm$  £141.80) for England.

Median hourly earnings (excluding overtime) in Herefordshire were **£8.91** ( $\pm$  £0.87), compared with £10.53 ( $\pm$  £0.19) in the West Midlands Region and £11.50 ( $\pm$  £0.05) in England.

The main focus of this article is to look at what people working in Herefordshire earn compared with other areas, so for the rest of this article work based earnings are used unless otherwise stated.

### Comparisons within the region and with Herefordshire's neighbours (Work based)

This section compares earnings of those working in Herefordshire with earnings of those working in each of the other counties/unitary authorities in the West Midlands region. Figures for Gloucestershire and Powys are also included to give us an idea of what is happening in our neighbouring authorities. See Table 1.

Herefordshire ranks among the lowest in terms of earnings out of all the county/unitary authorities within the West Midlands region.

Table 1. Median gross weekly earnings for full-time employees by County/Unitary Authority in the West Midlands

	2007		2006
	Median earnings (£)	Rank	Rank
Solihull	490.9	1	1
Warwickshire	464.2	2	3
Coventry	459.7	3	2
Birmingham	455.3	4	4
Telford and Wrekin	433.0	5	6
Wolverhampton	424.7	6	5
Sandwell	417.1	7	7
Staffordshire	416.6	8	8
Shropshire	400.2	9	11
Worcestershire	395.8	10	9
Stoke-on-Trent	394.3	11	14
Dudley	393.7	12	13
<b>Herefordshire</b>	<b>384.4</b>	<b>13</b>	<b>10</b>
Walsall	379.7	14	12
<i>West Midlands region</i>	<i>430.0</i>		
Gloucestershire	451.0		
Powys	370.4		

Herefordshire experienced the largest drop in the rankings of earnings during 2007, moving from being ranked 10th in 2006 to 13th out of the 14 authorities in the region, falling below Shropshire, Stoke-on-Trent and Dudley. Walsall also experienced a decrease in its ranking, moving from 12<sup>th</sup> in 2006 to 14<sup>th</sup> in 2007. Conversely, Shropshire and Stoke-on-Trent have moved up, by 2 and 3 positions respectively, over the previous year.

**Distribution of earnings (Work based)**

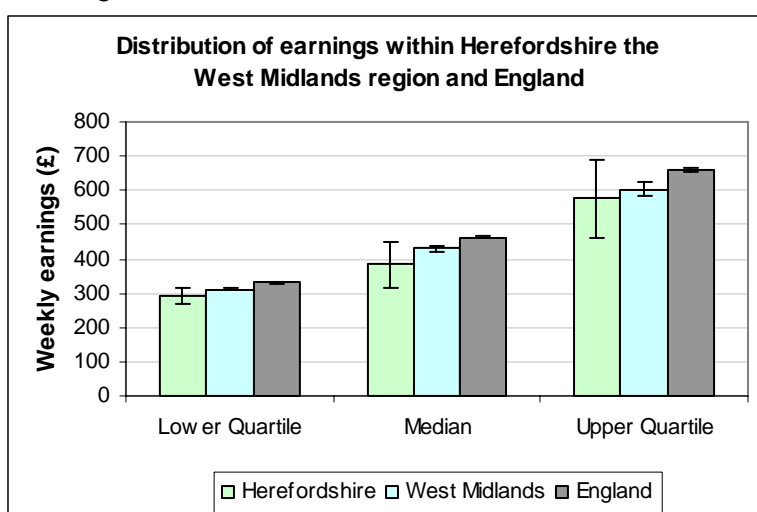
The particular points in the distribution of earnings highlighted in this section include:

- lower level earnings as measured by the lower quartile (i.e. 25% earn less than...),
- the median to show what at least half the population are earning and
- higher earnings shown by the upper quartile (i.e. the top 25% of earners earn more than...)

Table 2. Range of gross weekly earnings for full time employees (£), 2007

Area	Lower Quartile earnings 25% earned less than	Median earnings (50%)	Upper Quartile earnings 25% earned more than
Birmingham	332.80	455.30	640.20
Coventry	318.10	459.70	653.70
Dudley	284.90	393.70	548.10
<b>Herefordshire</b>	<b>292.20</b>	<b>384.40</b>	<b>575.20</b>
Sandwell	305.40	417.10	578.20
Shropshire	290.50	400.20	567.00
Solihull	368.90	490.90	676.40
Staffordshire	311.20	416.60	589.00
Stoke-on-Trent	287.50	394.30	536.90
Telford and Wrekin	316.70	433.00	627.10
Walsall	287.40	379.70	514.80
Warwickshire	338.50	464.20	655.60
Wolverhampton	291.70	424.70	614.00
Worcestershire	306.70	395.80	552.30
<i>West Midlands region</i>	<i>312.20</i>	<i>430.00</i>	<i>603.50</i>
England	330.30	462.00	660.60
Gloucestershire	326.00	451.00	625.70
Powys	269.20	370.40	516.20

Chart 6 depicts the differences across the quartiles between Herefordshire, the West Midlands and England



The only differences that are statistically significant are:

- Herefordshire's lower quartile earnings are lower than England's lower quartile earnings.
- Herefordshire's median earnings are lower than England's median earnings.
- Herefordshire's Lower quartile earnings are lower than those in three County/Unitary Authorities in the region: Birmingham, Solihull and Warwickshire.

With the exception of those stated above, there are no statistically significant differences between Herefordshire's earnings and other authorities in the West Midlands region or with its neighbours at any point in the earnings distribution shown.

Unless otherwise stated the copyright in this material is owned by the Herefordshire Council and no responsibility is accepted for any use made of or reliance placed upon the material.

**Differences between male and female earnings (Work based)**

Across the whole of the West Midlands region and England, median earnings for full-time female workers are lower than those of their male counterparts. In both of these cases, the ratio of female to male earnings was 0.79. If female and male earnings were the same the ratio would be 1.0, if females earned less the ratio is less than 1 and if females were paid more the ratio would be higher than 1. The further the ratio is from 1, the larger the gender pay gap.

Table 3. Male and female median gross weekly earnings and the female to male ratios

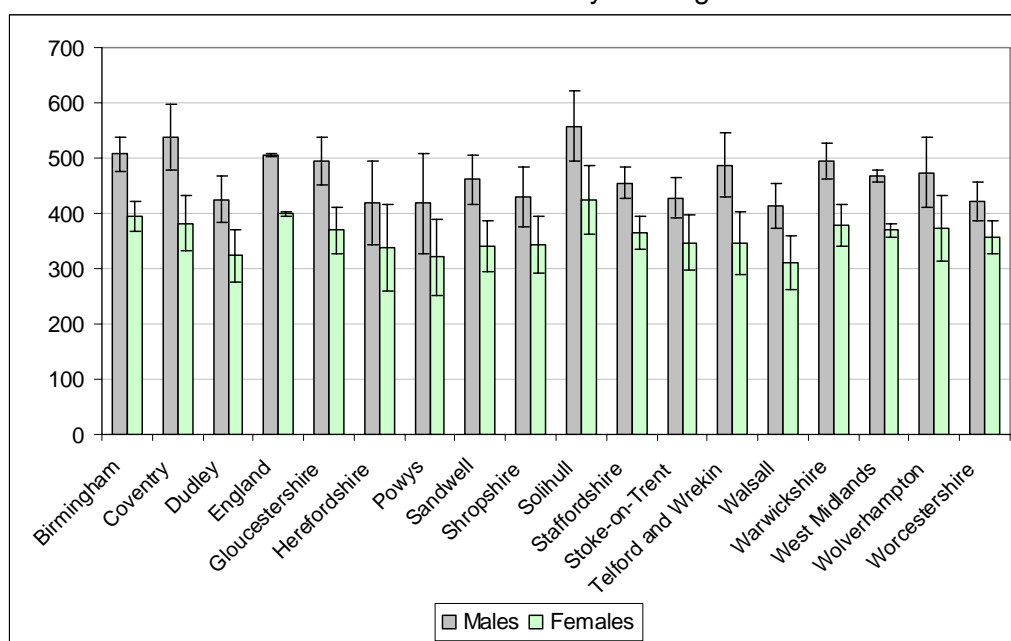
Area	Males	Females	Ratio
Telford and Wrekin	487.3	345.5	0.71
Coventry	537.3	382.3	0.71
Sandwell	461.4	340.5	0.74
Gloucestershire	493.9	369.8	0.75
Walsall	413.9	311.7	0.75
Dudley	425.5	323.5	0.76
Solihull	557.8	424.8	0.76
Warwickshire	494.6	378.7	0.77
Powys	418.2	320.3	0.77
Birmingham	506.9	394.1	0.78
Wolverhampton	474.1	373.2	0.79
<i>England</i>	<i>505.4</i>	<i>399.2</i>	<i>0.79</i>
<i>West Midlands</i>	<i>467.4</i>	<i>369.7</i>	<i>0.79</i>
Shropshire	429.1	343.3	0.80
Staffordshire	454.4	365.0	0.80
<b>Herefordshire</b>	<b>418.6</b>	<b>337.9</b>	<b>0.81</b>
Stoke-on-Trent	427.6	346.4	0.81
Worcestershire	421.1	356.6	0.85

Out of all of Herefordshire's neighbouring authorities and the other authorities in the West Midlands region, Herefordshire has one of the smallest gender pay gaps

The areas where female earnings are statistically lower than males are:

- Birmingham
- Dudley
- Coventry
- England
- Gloucestershire
- Sandwell
- Solihull
- Staffordshire
- Telford and Wrekin
- Walsall
- Warwickshire
- West Midlands region

Chart 7. Female to male median weekly earnings for Herefordshire and comparator areas



Gender pay gaps may well in part be due to the types work that males and females tend to do and the different level of pay associated with that industry. From 2006 data was available nationally for earnings according to their industry, which is discussed further in the next section.

**Earnings by industry (Work based)**

Although this information is only available at a national level, it gives some insight into the level of earnings in Herefordshire when shown alongside the proportion of Herefordshire residents working in each industry. Table 4 shows national earnings by industry from ASHE 2007 along with the proportion employed in each type of industry in Herefordshire as obtained from the 2001 Census.

Table 4. Median weekly earnings for the UK by industry and proportion of Herefordshire residents working in those sectors.

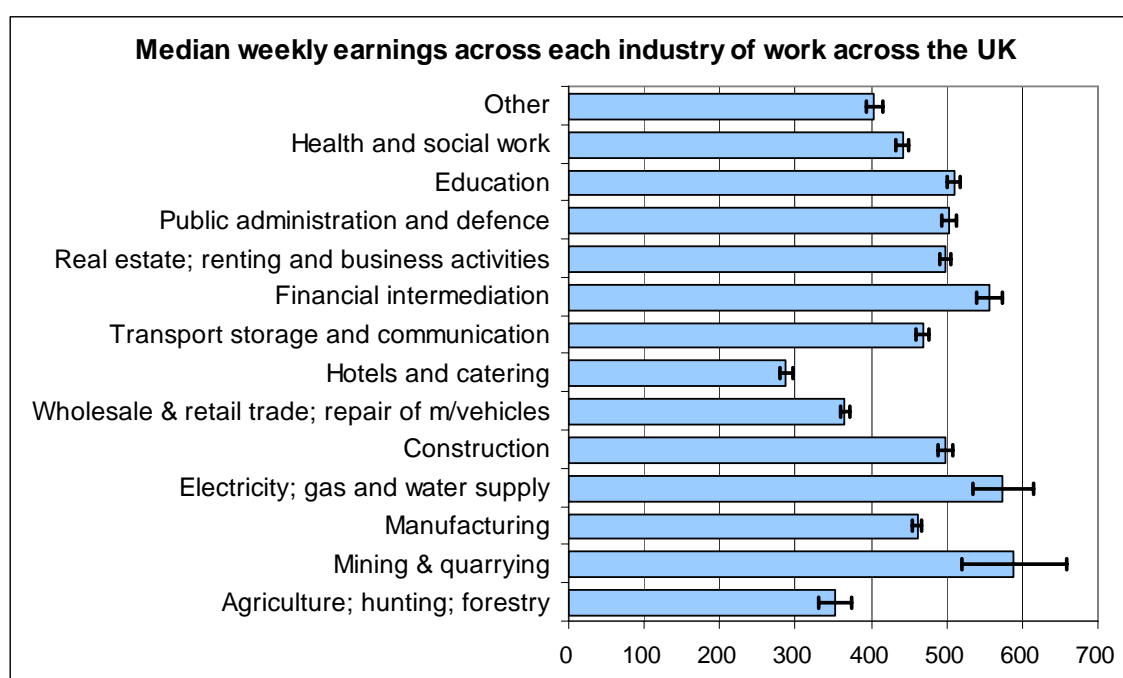
	<b>2007 earnings UK</b>	<b>% of Herefordshire residents working in each industry</b>
Agriculture; hunting; forestry	£351.70	6.7%
Mining & quarrying	£589.40	0.2%
Manufacturing	£460.70	17.4%
Electricity; gas and water supply	£574.60	0.5%
Construction	£498.10	7.7%
Wholesale & retail trade; repair of motor vehicles	£365.40	18.4%
Hotels and catering	£287.50	4.8%
Transport storage and communication	£468.00	4.7%
Financial intermediation	£556.80	1.9%
Real estate; renting and business activities	£498.30	9.5%
Public administration and defence	£503.10	5.0%
Education	£509.90	7.4%
Health and social work	£441.20	11.6%
Other	£404.30	4.3%

Taking into account confidence intervals, the 3 industries with noticeably lower earnings are 'hotels & catering', 'agriculture, hunting & forestry' and 'wholesale & retail trade; repair of motor vehicles'.

The 3 industries with the highest earnings are 'mining & quarrying', 'electricity; gas & water supply' and 'financial intermediation', which are also the 3 sectors with the lowest proportion of workers in Herefordshire

Assuming there is a similar pattern for earnings by industry in Herefordshire to that of the UK will give us an indication of what effect local industry has on Herefordshire's economy through local wages.

Chart 8.



Unless otherwise stated the copyright in this material is owned by the Herefordshire Council and no responsibility is accepted for any use made of or reliance placed upon the material.

**Hours Worked** (Work based)

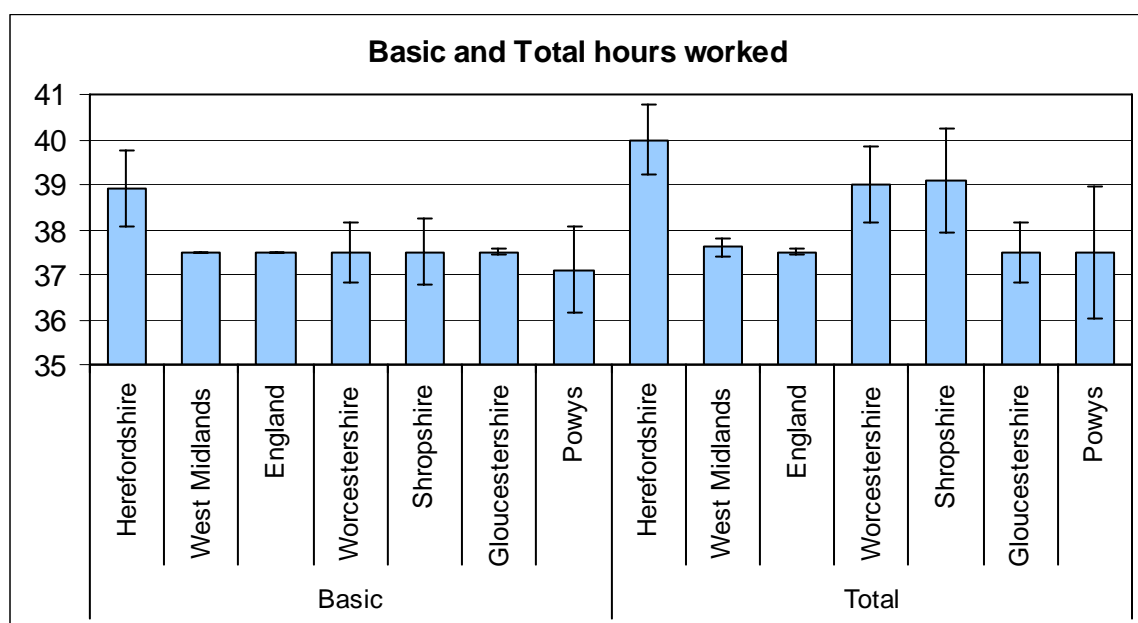
ASHE also publishes information about the number of hours worked by people working in the county<sup>3</sup> including median figures for the basic hours worked and total hours worked (i.e. including overtime) for full-time adult workers.

When looking at basic hours only, the median number of hours worked by people in Herefordshire in 2007 was 38.9 hours per week. This is somewhat higher than the number of basic hours worked by those in the West Midlands, England as a whole and neighbouring counties (with exception of Shropshire and Worcestershire, where the perceived difference is not statistically significant).

Similarly, when looking at total hours (including overtime), Herefordshire's median number of hours worked per week is higher than all comparator areas, except for Shropshire and Worcestershire.

There is no statistically significant difference between Herefordshire's median total hours worked (40 hours per week) and the basic hours worked (38.9 hours).

Chart 9.



<sup>3</sup> This information is also available by residence based i.e. median number of hours worked by people living in the county.

## Parliamentary Constituencies

There are two parliamentary constituencies in Herefordshire: 'Hereford' and 'Leominster'. 'Hereford' covers Hereford City and south down to Herefordshire's southern border, including Ross-on-Wye. 'Leominster' includes Leominster, Kington and Ledbury but also some of Worcestershire's parishes outside Herefordshire's administrative boundaries.

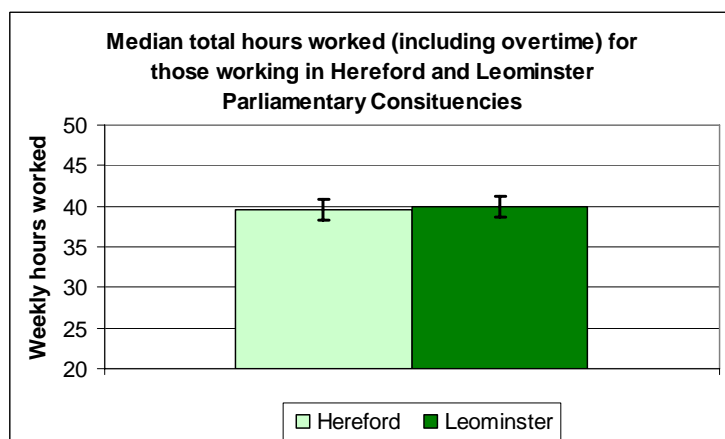
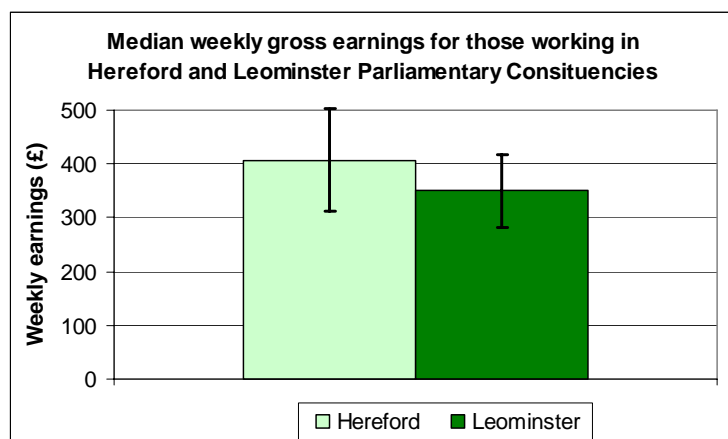
This data shows earnings for full-time adult people employed in these constituencies, i.e. what people earn working in either Hereford or Leominster constituency.

Table 5. Summary of 2007 median weekly gross earnings and total hours worked for Herefordshire's parliamentary constituencies

	Median weekly earnings	Total hours worked
Hereford	£406.50	39.6
Leominster	£350.00	40.0

Statistically there is no difference between the median earnings or total hours worked for those working in either Hereford or Leominster Parliamentary Constituency, see Charts 9 and 10.

Charts 9 & 10



## FURTHER DETAILS

The data presented in this article form only part of the statistics produced on earnings.

For further information on the data in this article, please contact the Research Team on 01432 383634 or e-mail [researchteam@herefordshire.gov.uk](mailto:researchteam@herefordshire.gov.uk)