

## **ANNUAL SURVEY OF HOURS & EARNINGS (ASHE) 2010**

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. Unless otherwise stated, earnings are gross weekly earnings by workplace i.e. the earnings of employees who work in Herefordshire, but who do not necessarily live in the county.

### **Key points**

---

- In 2010 workplace-based weekly earnings were £380.70 ( $\pm$  £39.55), significantly lower than the West Midlands region £467.50 ( $\pm$  £8.25) and England £504.50 ( $\pm$  £1.98).
  - Although not statistically significant, this was 0.7% lower than in 2009 (£383.30).
  - Compared to regionally and nationally Herefordshire's weekly work-based earnings appear to be getting worse. In 2006, Herefordshire's earnings were 6% lower than the West Midlands, whereas in 2010 this gap had widened to 19% lower. The gap between Herefordshire's and England's earnings is even wider, 14% lower in 2006 increasing to 25% lower in 2010.
  - There was no significant difference between workplace earnings (£380.70  $\pm$  £39.55) and residence-based earnings (£417.70  $\pm$  £48.30).
  - Herefordshire had the lowest median earnings of all 14 West Midlands authorities, and was also lower than Monmouthshire, Powys and Gloucestershire.
  - In 2010 Herefordshire had one of the largest gender pay gaps (women's earnings were 26% lower than men's) out of all the West Midlands and neighbouring authorities, only Coventry and Warwickshire had a greater gap. This change from previous years is due to a large decrease in women's earnings alongside a large increase in men's earnings.
-

## 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 latest data was released in December 2010 and relates to employees who were employed on the 22<sup>nd</sup> April 2010. This excludes employees not paid during the pay period including 22<sup>nd</sup> April 2010 and those who are self-employed. The survey is based on a random 1% sample of employees registered for PAYE (using their national insurance number). Once an employee is selected, they will remain on the panel indefinitely to maximise the consistency of the sample - this is true while they stay in the same job, but also if they move employer. Information on earnings and hours is obtained in confidence from employers, via a postal questionnaire.

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. includes 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 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.

Because Herefordshire has a relatively low population and hence a relatively small sample size compared with other areas, caution is required when looking at changes in earnings over time periods of less than 5 years. Due to the changes in the questionnaire in 2005 we do not have data earlier than 2006 to compare with.

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 median is used because the mean can be skewed by a small proportion of high earners. For example the *mean* gross weekly earnings for Herefordshire in 2010 were £464.30 whilst *median* earnings were £380.70. 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.

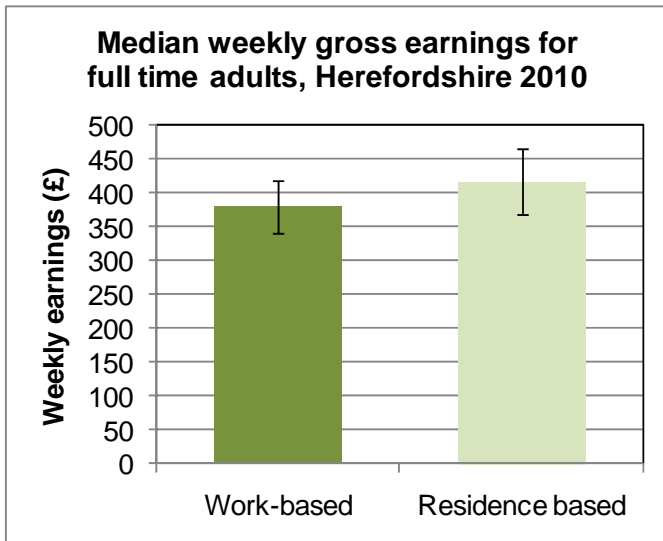
## Confidence intervals

Periodically, this article will refer to confidence intervals associated with earnings values; below is an explanation of what a 'confidence interval' is and what it means for the use of these figures.

Surveying a large enough sample of employee jobs enables an estimate of the level of earnings for all employees in the county to be made; earnings 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, in 2010 ASHE results give the average earnings<sup>1</sup> in Herefordshire as £380.70 per week and the 95% confidence interval suggests that the average earnings for all those working in Herefordshire could lie within £39.55 of this figure i.e. plus or minus ( $\pm$ ) £39.55.

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. 2010 work-based and residence-based median gross weekly earnings with Confidence Intervals.



In 2010, the published figure for residence-based earnings was £417.70 and the figure for work-based earnings was £380.70, which suggests that work-based earnings were slightly higher than residence-based.

However the confidence intervals for these figures overlap (see error bars Chart 1), meaning that statistically there is no measurable difference between earnings of those who work in Herefordshire and 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

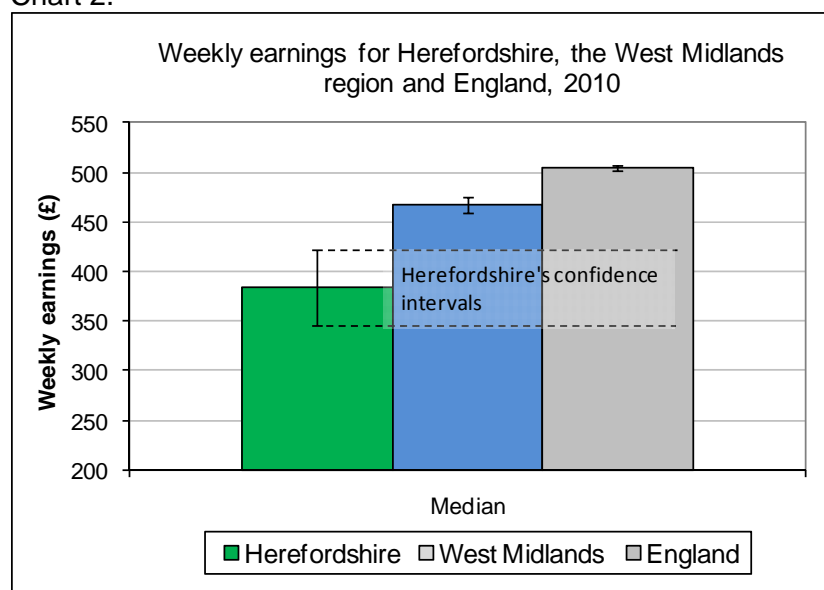
## Latest results

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

In 2010, the **median weekly earnings** for people who work in Herefordshire were **£380.70** ( $\pm$  £39.55). Although not statistically significant, this was 0.7% lower than in 2009 (£383.30  $\pm$ 37.56).

In 2010 Herefordshire's median weekly gross earnings were significantly lower than those in the West Midlands region and across England. In 2010, median weekly gross earnings for the West Midlands region were £467.50 ( $\pm$  £8.25) and £504.50 ( $\pm$  £1.98) in England (chart 2).

Chart 2.



In 2010, Herefordshire's work-based gross **median annualised<sup>2</sup> earnings** were **£19,851** ( $\pm$  £2,062) which is lower than both the West Midlands, £24,377 ( $\pm$  £430) and England £26,306 ( $\pm$  £103).

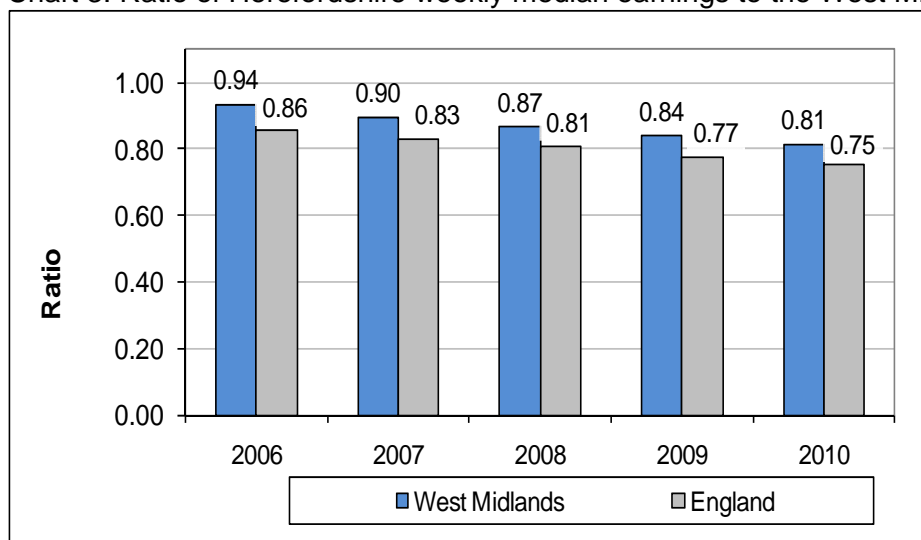
The **median hourly earnings** (including overtime) for people working in Herefordshire were **£9.22** ( $\pm$  £0.80), lower than those in the West Midlands region £11.65 ( $\pm$  £0.23) and in England £12.74 ( $\pm$  £0.05).

<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.

Chart 3 presents the ratio of Herefordshire's weekly earnings compared to regionally and nationally over the past few years, which 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 (£380.70) divided by England's earnings (£504.50) which gives a ratio of 0.75. Therefore Herefordshire's weekly earnings are 75% of those nationally i.e. 25% 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. Ratio of Herefordshire weekly median earnings to the West Midlands and England



Herefordshire's weekly work-based earnings compared to regionally and nationally appear to be getting worse. The gap between Herefordshire's earnings and those of the West Midlands region and England as a whole is getting wider.

In 2006, Herefordshire's earnings were 6% lower than the West Midlands, whereas in 2010 this gap had widened to 19% lower. The gap between Herefordshire's and England's earnings is wider, 14% lower in 2006 increasing to 25% lower in 2010.

Taking into account the confidence intervals around the data, in 2006, 2007, 2009 and 2010 weekly earnings in Herefordshire were statistically lower than England. Bearing this in mind, it suggests that the trends shown by the ratios reflect a real change, particularly for the ratio of Herefordshire to England's earnings.

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

In 2010, the **median weekly earnings** for people who live in Herefordshire were **£417.70** ( $\pm$  £48.30), compared with £469.20 ( $\pm$  £8.28) in the West Midlands and £506.00 ( $\pm$  £1.98) in England.

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 2010, Herefordshire's median annualised earnings were **£21,780** ( $\pm$  £2,519) which is similar to the West Midlands £24,465 ( $\pm$  £432) but lower than England £26,384 ( $\pm$  £103).

Median hourly earnings of residents (including overtime) in Herefordshire were **£10.00** ( $\pm$  £1.06), which is slightly lower than the West Midlands region £11.71 ( $\pm$  £0.23) and England £12.77 ( $\pm$  £0.05).

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, Monmouthshire and Powys are also included to give us an idea of what is happening in our neighbouring authorities. See Table 1.

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

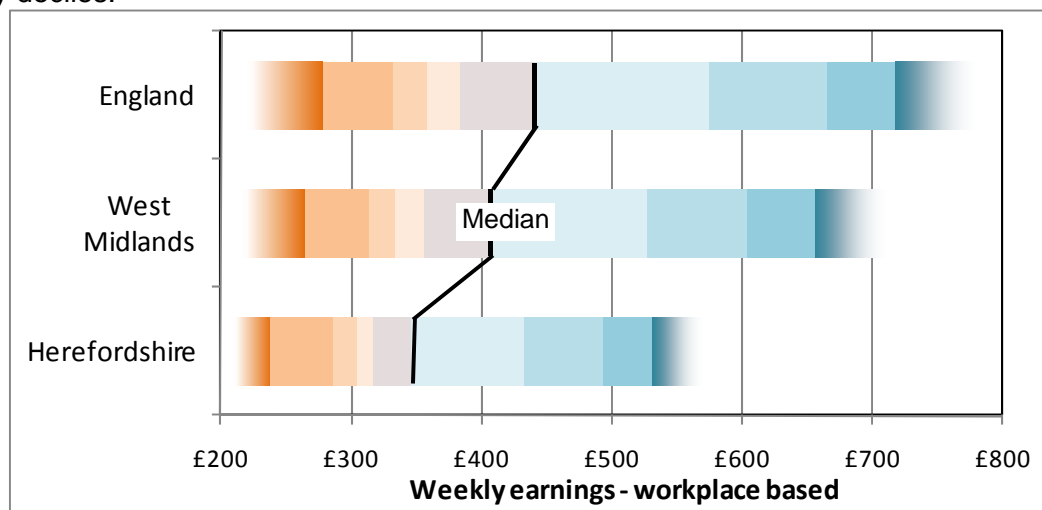
	2010		2009	2008	2007	2006
	Median earnings (£)	Rank	Rank	Rank	Rank	Rank
Solihull	521.9	1	1	1	1	1
Coventry	503.5	2	4	3	3	1
Birmingham	500.2	3	3	4	4	4
Warwickshire	488.6	4	2	2	2	3
Wolverhampton	474.1	5	5	7	6	5
Staffordshire	463.6	6	6	8	8	8
Worcestershire	448.8	7	9	9	10	9
Stoke-on-Trent	448.6	8	7	10	11	14
Shropshire	437.5	9	12	11	9	11
Telford and Wrekin	436.1	10	10	6	5	6
Sandwell	435.0	11	8	5	7	7
Walsall	431.0	12	13	14	14	12
Dudley	408.9	13	11	12	12	13
<b>Herefordshire</b>	<b>380.7</b>	<b>14</b>	<b>14</b>	<b>13</b>	<b>13</b>	<b>10</b>
<i>West Midlands region</i>	467.5					
Gloucestershire	473.1					
Powys	382.3					
Monmouthshire	414.7					

In 2010 Herefordshire was ranked 14<sup>th</sup> (lowest) out of all West Midlands Authorities, as it was in 2009. This is slightly worse than for 2007 and 2008 when Herefordshire was ranked 13th out of 14 in the West Midlands region. In 2010 weekly earnings in Herefordshire are 73% lower (£141 less) than in Solihull, which has the highest earnings in the West Midlands region.

**Distribution of earnings (work-based)**

The following section describes the distribution of earnings in Herefordshire compared to elsewhere using deciles. A decile is any of the nine values that divide the sorted data into ten equal parts, so that each part represents 1/10 of the sample or population. The highest (9<sup>th</sup>) decile is omitted here because the data for Herefordshire is unreliable.

Chart 4. Range of weekly earnings for Herefordshire, the West Midlands and England, broken down by deciles.



Looking at the range of earnings between the 2<sup>nd</sup> and 8<sup>th</sup> deciles<sup>3</sup> Herefordshire had the lowest range of earnings out of any of the West Midlands authorities. The chart above clearly demonstrates this difference compared to the West Midlands, but also highlights the difference compared to England as a whole. As well as having a reduced range of earnings compared to the West Midlands and England, Herefordshire's lower earnings e.g. the 1<sup>st</sup> decile are significantly lower. In 2010, people earning the lowest 10% of earnings in Herefordshire were earning less than £238.20 (± £15.87) per week, compared to £277.90 (± £1.08) across England and £263.70 (± £3.10) in the West Midlands.

**Differences between men's and women's earnings (work-based)**

Across the whole of the West Midlands region and England, median earnings for women working full-time are lower than those of men. The ratio of women's to men's earnings was 0.81 across England and 0.80 in the West Midlands. If women's and men's earnings were the same then the ratio would be 1.0; if women earn less the ratio is less than 1 and if women are paid more the ratio is higher than 1. The further the ratio is from 1 the larger the gender pay gap.

Table 2. Median earning of men and women working full time and the female to male ratio (2010)

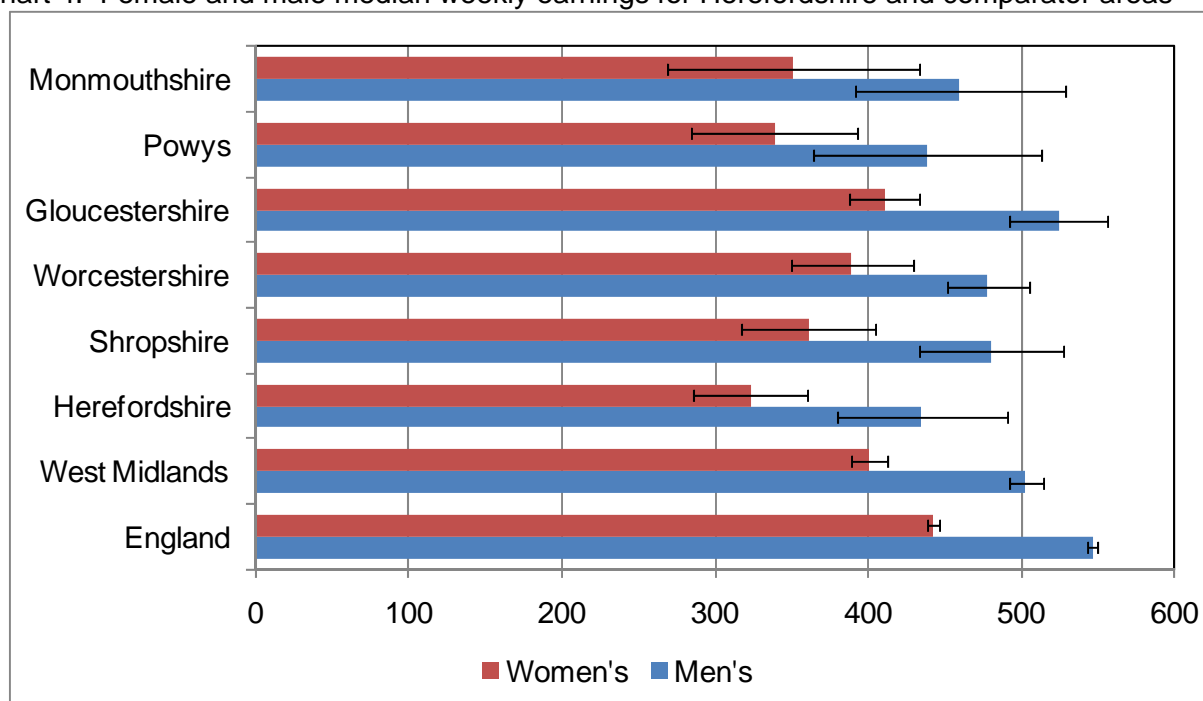
Area	Men's	Women's	Ratio
Dudley	422.9	379.2	0.90
Stoke-on-Trent	478.1	413.9	0.87
Birmingham	534.7	436.4	0.82
Worcestershire	478.1	389.2	0.81
England	546.2	442.2	0.81
Staffordshire	494.7	396.7	0.80
West Midlands	502.8	400.0	0.80

<sup>3</sup> Note: The highest decile is omitted because the data for Herefordshire is unreliable

Area	Men's	Women's	Ratio
Telford and Wrekin	472.8	373.7	0.79
Sandwell	466.5	366.6	0.79
Gloucestershire	524.0	410.4	0.78
Powys	438.2	338.5	0.77
Monmouthshire	459.9	350.9	0.76
Solihull	571.8	435.3	0.76
Shropshire	480.4	361.1	0.75
Wolverhampton	525.3	394.3	0.75
Walsall	481.4	361.0	0.75
<b>Herefordshire</b>	<b>434.8</b>	<b>323.2</b>	<b>0.74</b>
Coventry	571.9	418.2	0.73
Warwickshire	546.9	394.4	0.72

In 2010 Herefordshire had one of the largest gender pay gaps out of all the West Midlands and neighbouring authorities third highest after Coventry and Warwickshire. Women's earnings were 0.74 of men's earnings, 26% lower. This was a very different picture compared with 2009 (and previous years) when the pay gap in Herefordshire was the smallest pay gap out of any West Midlands or neighbouring authorities (with the exception of Powys). This dramatic change was as a result of a considerable decrease in women's earnings and an increase in men's earnings. Herefordshire had the lowest median earnings for women in the West Midlands in 2010. The decrease in women's earnings between 2009 and 2010 was not statistically significant.

Chart 4. Female and male median weekly earnings for Herefordshire and comparator areas



It is worth noting that gender pay gaps may well in part be due to the types work that men and women tend to do and the different level of pay associated with particular occupations and industries.

**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 employees working in each industry. Table 4 shows UK earnings by industry from ASHE 2010 along with the proportion employed in each type of industry in Herefordshire as obtained from the Business Register and Employment Survey 2009.

Table 4. Median weekly earnings for the UK by industry and proportion of Herefordshire residents working in those sectors. Both use SIC 2007 codes<sup>4</sup>.

	Median (£)	Percentage change 09-10	% employees in industry (BRES, 2009)	
			Herefordshire	Great Britain
Mining and quarrying	708.8	3.8% ↑	0%*	0%*
Information and communication	651.6	1.3% ↑	2%	4%
Electricity, gas, steam and air conditioning supply	642.8	7.8% ↑	0%*	0%*
Financial and insurance activities	630.3	1.3% ↑	2%	4%
Professional, scientific and technical activities	607.6	2.0% ↑	4%	7%
Public administration and defence; compulsory social security	581.6	6.3% ↑	3%	5%
Education	552.5	2.0% ↑	9%	9%
Construction	536.6	1.1% ↑	5%	5%
Water supply; sewerage, waste management and remediation activities	504.0	-2.7% ↓	1%	1%
Manufacturing	499.9	3.3% ↑	15%	9%
Transportation and storage	495.6	3.4% ↑	3%	5%
Human health and social work activities	486.2	2.7% ↑	15%	13%
Real estate activities	465.2	0.5% ↑	2%	2%
Administrative and support service activities	395.8	1.2% ↑	6%	8%
Arts, entertainment and recreation	395.8	1.9% ↑	2%	2%
Agriculture, forestry and fishing	395.0	2.2% ↑	1%	2%
Wholesale and retail trade; repair of motor vehicles and motorcycles	393.5	1.4% ↑	20%	16%
Accommodation and food service activities	304.0	1.7% ↑	8%	7%

Source: ASHE 2010 and the Business Register and Employment Survey 2009

\*indicates where values less than 0.5% have been rounded to 0%

The 3 industries with highest median earnings are:

- Mining and quarrying
- Information and communication
- Electricity, gas, steam and air conditioning supply

The 3 industries with lowest median earnings are:

- Agriculture, forestry and fishing

<sup>4</sup> UK Standard Industrial Classification of Economic Activities 2007

- Wholesale and retail trade; repair of motor vehicles and motorcycles
- Accommodation and food service activities

If we assume that the same industries locally have the same relative position as they do nationally in terms of their average pay then looking at each industry's relative employment share locally will give an indication of what effect the structure of the local economy has on wage levels in Herefordshire.

In 2010, the UK industry with the highest median weekly earnings was 'mining & quarrying' at £708.80 per week; less than 1% of Herefordshire's residents were employed in this sector (similar to nationally). In fact looking at the six industries that attract the highest median earnings nationally, Herefordshire has relatively fewer people employed than nationally in every case. All together these six industries (see table above) employ 21% of the workforce nationally compared to 11% in Herefordshire.

The largest proportion of Herefordshire residents were employed in 'wholesale & retail trade; repair of motor vehicles'. At only £393.50 per week nationwide, this sector has the second lowest median earnings nationally. Assuming wages locally match those nationally this will have a negative impact on earnings locally.

The next largest sectors in Herefordshire are 'manufacturing' and 'human health and social work', both accounting for 15% of Herefordshire's employees (9% and 13% respectively for Great Britain). Neither sector attracts particularly high earnings nationally. Median earning in 'manufacturing' were £499.90 (10<sup>th</sup> highest out of 18), whilst median earning in human health and social work were lower still £486.20 (12<sup>th</sup> highest out of 18).

'Agriculture', an important sector for the county employing 8% of the workforce according to the 2008 Annual Business Inquiry<sup>5</sup> had the third lowest median earnings in 2010 (£395.50). This was despite seeing the largest increase nationally (+8.5%) between 2008 and 2009.

The industries that saw the greatest increases between 2009 and 2010 were 'electricity, gas, steam and air conditioning supply' and 'public administration and defence; compulsory social security', increasing by 7.8% and 6.3% respectively. Both account for a relatively small proportion of employment locally and less than nationally. Only 'water supply; sewerage, waste management and remediation activities' saw a reduction in the median weekly wage, reducing by 2.7%. Perhaps unsurprisingly real estate activities saw the smallest growth in the year increasing by just 0.5%.

If we assume that earnings by industry in Herefordshire follow national patterns in terms of their relative position, then in general the local economy is made up of small proportions of residents working in industries where earnings are high and large proportions of the workforce in sectors with lower earnings. Unfortunately there is no way of unpicking the effect of the industrial makeup on low wages in the county i.e. if you removed the effect of industry on wages would wages in Herefordshire still be much lower. In order to do this you would need comparable data for Herefordshire for individual industries in order to be able to compare to the same industry at a national level.

---

<sup>5</sup> The Business Register and Employment Survey under estimates the number in employed in agriculture due to its methodology so the ABI is quoted here instead.

**Hours Worked** (work-based)

ASHE also includes information about the number of hours worked<sup>6</sup>, including the 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, the median number of hours worked by people in Herefordshire in 2010 was 37.5 hours per week. This is the same as the number of basic hours worked by those in the West Midlands and England as a whole (both 37.5 hours).

The median of **total** hours worked (including overtime) by those working in Herefordshire was 38.9 hours per week, higher than the number of basic hours. England's median total hours worked are equal to the basic hours worked (37.5 hours). Herefordshire's median total hours worked are higher than those in the West Midlands and England as a whole, but only the difference with England is statistically significant.

---

<sup>6</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 South Herefordshire' and 'North Herefordshire'. These are new constituencies that came into effect at the 2010 general elections. Hereford and South Herefordshire as before covers Hereford City and further south down to Herefordshire's southern border, including Ross-on-Wye. 'North Herefordshire' includes Leominster, Kington and Ledbury, but no longer includes parts of Worcestershire. Old Gore and Backbury Wards that were previously split between the two constituencies are now entirely in North Hereford.

This data shows earnings for full-time adults employed in these constituencies, i.e. what people earn working in the respective areas.

Table 4. Summary of 2010 median weekly gross earnings and median total hours worked for Herefordshire's parliamentary constituencies

	Median weekly earnings (£)	Total median hours worked
Hereford and South Herefordshire	402.10	37.0
North Herefordshire	350.40	37.5

The difference between the median earnings or total hours worked for those working in Hereford or Leominster Parliamentary Constituencies is not statistically significant.

## 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 260 893 or e-mail [researchteam@herefordshire.gov.uk](mailto:researchteam@herefordshire.gov.uk)**