

## ONS Estimates of Household Income for 2004 / 2005

### Introduction

This article looks at the estimates of household income released by the Office for National Statistics (ONS) in November 2007. These are estimates for the year 2004 / 2005

The estimates are at MSOA (Mid Layer Super Output Area) level, so it is necessary to define MSOA at the start.

*Output Areas are the smallest area for which Census data is available, and Super Output Areas are obtained by grouping together several Output Areas. MSOAs have a minimum population of 5000, and Herefordshire has been divided into 23 MSOAs. ONS has called these "Herefordshire 1", Herefordshire 2" etc which is not very meaningful, so local names have been devised as a way of describing the MSOAs.*

The 23 MSOAs within Herefordshire are shown on the map on page 6.

### How do these estimates differ from other sources of data?

More recent data comes from the Annual Survey of Hours and Earnings (ASHE) but this data is at **Local Authority** level. It is also **less comprehensive** for the following reasons.

- Only employed people are surveyed so it does not cover the self-employed. Nor does it cover those on pensions or benefits. It doesn't take into account people who may have other sources of income such as rental income and investments, either in addition to, or instead of, earnings.
- It looks at individuals, not households.

The English Indices of Deprivation 2007 (ID 2007) provide an estimate of **relative incomes** down to Lower Level Super Output Area (LSOA) in the form of % of the population living in low income households, and Ranks (1 to 116 for Herefordshire and 1 to 32,482 nationally). It can be used to see which areas have the lowest incomes, but it cannot provide any figures as to actual household incomes.

A report from the Joseph Rowntree Foundation, "Can't buy, can rent", November 2007, does give an estimate of household incomes in 2006 by Local Authority, but these are specifically **younger working households** (aged 20 to 39). *See article elsewhere in this issue of the Quarterly Economic Report.*

### The ONS Estimates of Household Income 2004 / 2005

This data gives a modelled estimate of average (mean) weekly household income for the year April 2004 to March 2005 for each of the 23 MSOAs in Herefordshire.

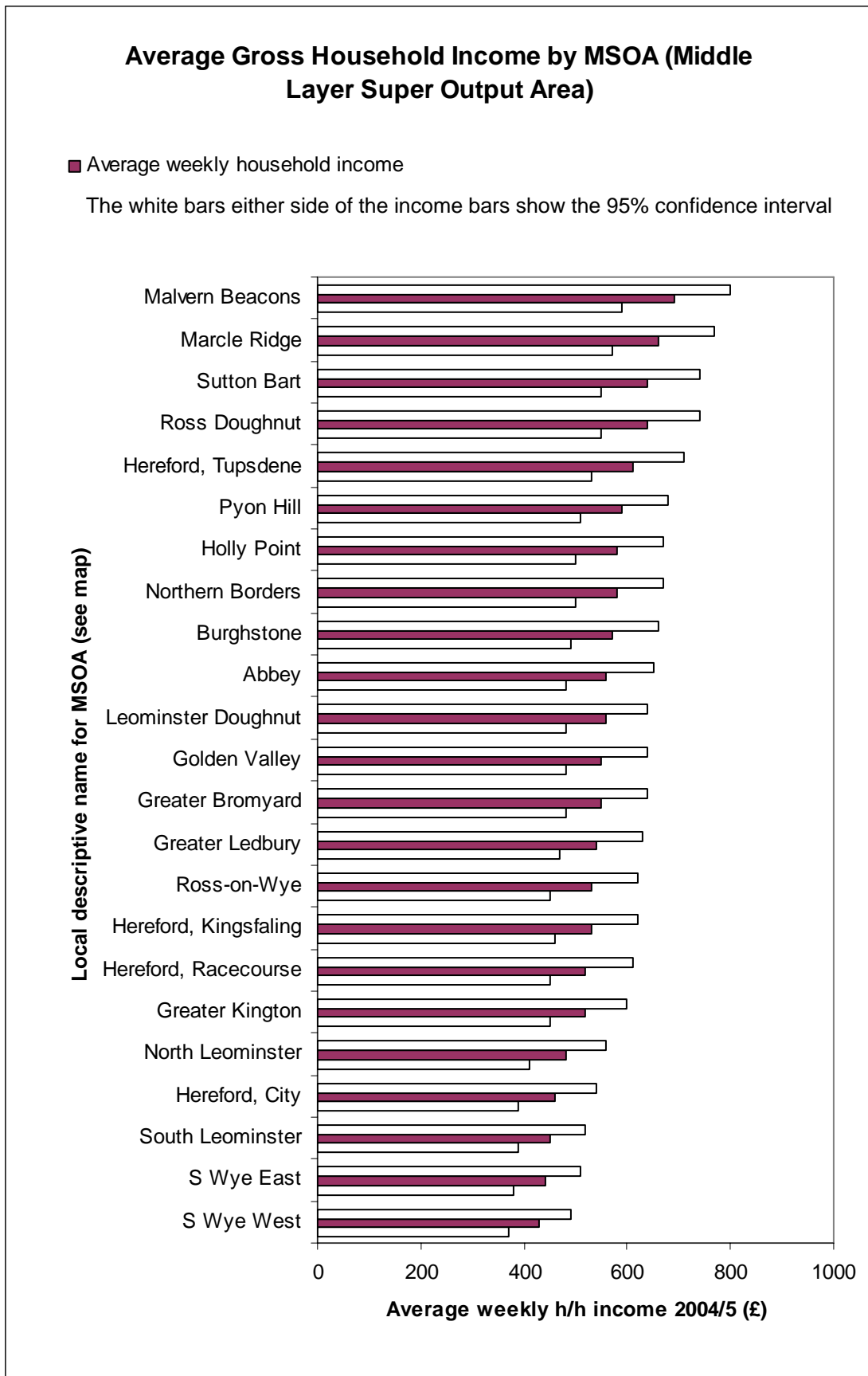
The total household weekly income is the sum of the gross income of every member of the household plus any income from benefits such as Working Families Tax Credit. It is calculated as the sum of income from:

- earnings (gross);
- self-employment;
- investments;
- disability benefits;
- retirement pensions and income support;
- other benefits;
- other pensions; and
- other/remaining sources.

ONS calculated the household income estimates by using the national Family Resources Survey (FRS) as the starting point. The FRS surveys a sample of households nationally. In order to make estimates of household income down to MSOA level, a modelling process was used which involved finding a relationship between the survey data and other data drawn from administrative and census data sources.

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.

The estimates, together with the confidence interval around these, are shown in the chart below.



### Use of the confidence intervals

To define Confidence Interval, the following definition is taken from the ONS document describing the methodology for these household estimates.

*In the context of model-based estimates, the confidence interval represents the uncertainty in the modelling process. The interval reflects the range between which the true value of average weekly household income is believed to lie, at a given level of confidence. At the 95% confidence level, assuming the model holds, on average the confidence interval is expected to contain the true value for 95% of the MSOAs.*

The confidence intervals should be taken into account when comparing one MSOA with another. For example, whereas the bar chart may seem to indicate that there are 22 MSOAs where the household income is higher than that for “S Wye West”, when the whole of the confidence interval is compared, it can be seen that there are only 9 MSOAs with higher household income, those from “Burghstone” to “Malvern Beacons”.

### Comparison with neighbouring counties

Table 1 below shows the range of Average Gross Household Income found in the Herefordshire MSOAs, together with the ranges found for Gloucestershire and Worcestershire.

**Table 1: Herefordshire compared with Gloucestershire and Worcestershire**

County	Average Gross Household Income £ per week (ONS estimates 2004 / 5)
Herefordshire	£430 to £690
Gloucestershire	£440 to £930
Worcestershire	£390 to £920

Both Gloucestershire and Worcestershire contain some MSOAs where household incomes are substantially higher than in any of the MSOAs within Herefordshire.

### Net household income

The bar chart above shows **gross** household income. The ONS data also includes estimates for **net income**, that is, after the following have been subtracted:

- income tax payments;
- national insurance contributions;
- domestic rates/council tax;
- contributions to occupational pension schemes;
- all maintenance and child support payments, which are deducted from the income of the person making the payments; and
- parental contribution to students living away from home.

The estimates of net household income are shown in Table 2, on the next page.

### Equivalent household income

Having estimated net household incomes, ONS carried out further processing in order to give **equivalised net household income**. The equivalisation process adjusts household income values to take account of household size and composition, enabling more appropriate comparisons to be made between households.

*For instance, consider the income of two households, A and B, who have the same weekly income, but A contains a couple with no children and B contains a couple with two children. On the basis of income alone, households A and B would appear to be of similar wealth. However, household B is less wealthy as there are two children to support. Statisticians have developed a standard formula that can be applied to a given household income according to the household members it contains, and the result is called **equivalised household income**.*

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.

The estimates of net equivalised household income are also shown in Table 2.

**Table 2: Estimates for net household income and net equivalised household income**

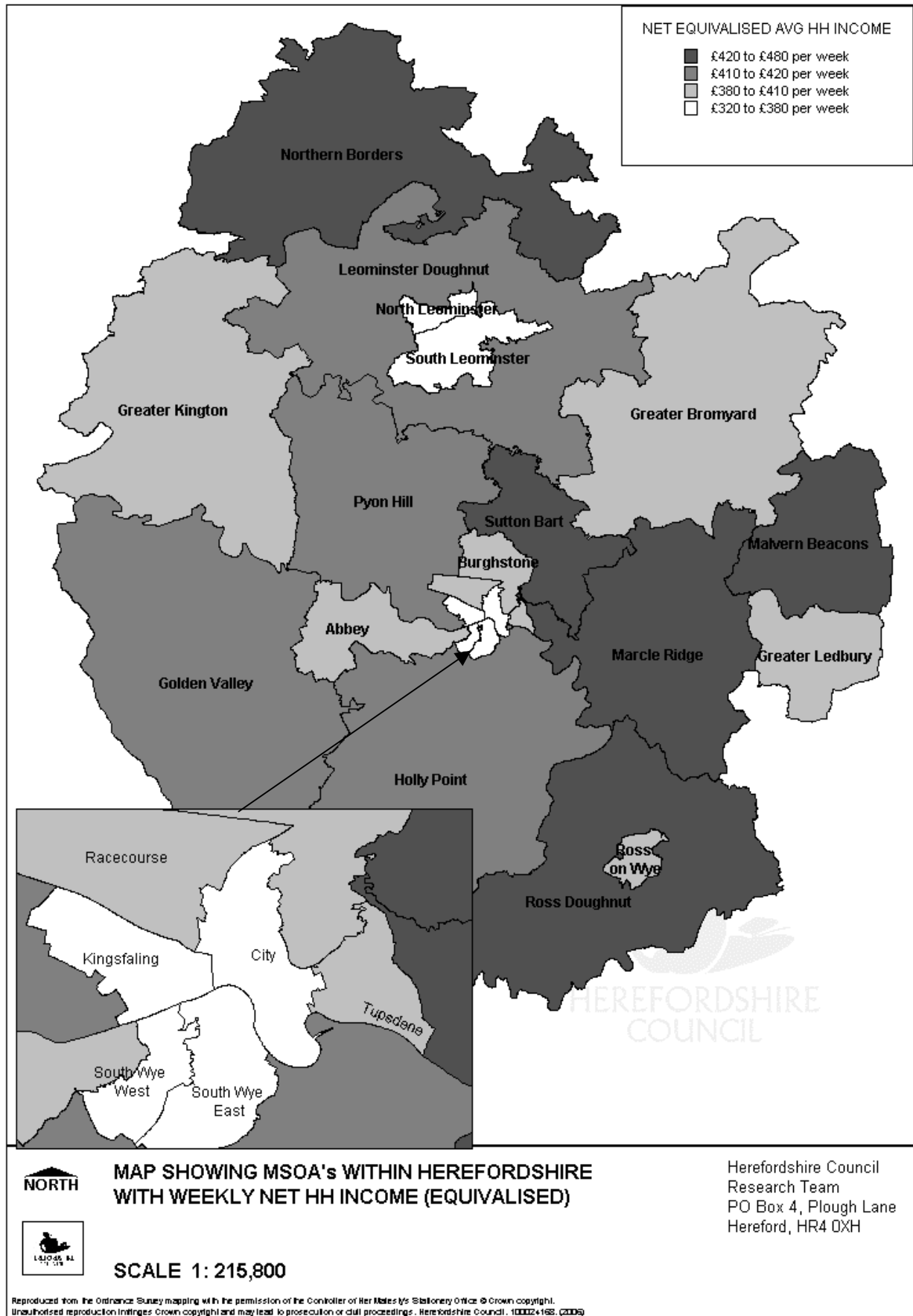
ONS Identifier for the MSOA	Local descriptive name for the MSOA	Average Weekly Household Net Income Estimate	Rank of average Net hh income	Average Weekly Household Net Income Estimate (equivalised)	Rank of average hh Net Income when equivalised
E02002921	S Wye West	350	1 & 2	320	1
E02002919	S Wye East	350		330	2
E02002907	Hereford, City	370	3	370	5 & 6
E02002916	South Leominster	390	4 & 5	350	3 & 4
E02002906	North Leominster	390		350	
E02002910	Greater Kington	410	6 & 7	380	7, 8 & 9
E02002914	Hereford, Racecourse	410		380	7, 8 & 9
E02002917	Greater Ledbury	430	8	400	11 to 14
E02002926	Hereford, Kingsfaling	440	9	370	5 & 6
E02002923	Ross-on-Wye	440	10	380	7, 8 & 9
E02002909	Greater Bromyard	450	11 & 12	400	11 to 14
E02002924	Abbey	450		400	11 to 14
E02002908	Golden Valley	460	13 to 15	410	15 to 18
E02002920	Leominster Doughnut	460		410	15 to 18
E02002915	Northern Borders	460		420	19
E02002905	Pyon Hill	470	16	410	15 to 18
E02002925	Holly Pont	480	17 & 18	410	15 to 18
E02002911	Marcle Ridge	480		450	22
E02002918	Burghstone	490	19 to 21	390	10
E02002927	Hereford, Tupdene	490		400	11 to 14
E02002912	Sutton Bart	490		440	20 & 21
E02002922	Ross Doughnut	520	22	440	20 & 21
E02002913	Malvern Beacons	530	23	480	23

*Note: confidence intervals were presented with the data and can be found at <http://neighbourhood.statistics.gov.uk/dissemination/datasetList.do?JSAllowed=true&Function=%24ph=60&CurrentPageId=60&step=1&CurrentTreeIndex=1&searchString=&datasetFamilyId=266&Next.x=12&Next.y=10> but, for simplicity, are not included in this table.*

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.

Where an area is ranked differently for equivalised and un-equivalised income, this is due to family size. For example, “Northern Borders” is ranked 14<sup>th</sup> out of 23 for un-equivalised household income, but higher, at 19<sup>th</sup>, for equivalised income – this implies a slightly smaller than average family size in the “Northern Borders” MSOA. By contrast, the Burgstone MSOA is ranked 20<sup>th</sup> on non equivalised income, but only 10<sup>th</sup> on equivalised income, implying a larger than average family size in this MSOA.

The map on the next page shows the areas with highest and lowest net equivalised household income, showing higher incomes to the north and east of the county, and lower average incomes in Hereford and Leominster.



**Comparison with the English Indices of Deprivation 2007 (ID 2007)**

The estimates of household income appear to be giving a somewhat similar picture to ID 2007 in terms of the most deprived areas. (The data used for the Income Domain of the ID 2007 dates from 2005 as compared to the estimates of household income which use data from the year 2004/5).

The table below lists all the Lower Level Super Output Areas (LSOAs) in Herefordshire which are among the 25% most deprived nationally in the Income domain of the ID 2007, together with the MSOAs in which they fall. It can be seen that LSOAs which show up as income deprived (ID 2007) tend to be within MSOAs which are ranked fairly low according to the estimates of household income

**Table 3: Comparison between the household income estimates and ID 2007**

LSOA (Lower level Super Output Area) Local name	% of population who are income deprived (ID 2007)	MSOA in which this LSOA falls	Ranking of MSOA net equivalised h/h income estimates (1=lowest income)
Leominster - Ridgemoor	41%	North Leominster	3 & 4
Golden Post - Newton Farm	37%	S Wye West	1
Hunderton - Bishop's Meadow	28%	S Wye East	2
Bromyard Central	27%	Greater Bromyard	11 to 14
Hunderton	26%	S Wye West	1
Redhill-Belmont Road	26%	S Wye West	1
Ross - John Kyrle	25%	Ross-on-Wye	7 to 9
Newton Farm-Brampton Road	24%	S Wye West	1
Courtyard	24%	Hereford, City	5 & 6
Leominster Grange	23%	South Leominster	3 & 4

**Ratio of Household Income Estimates to Individual Earnings figure obtained from ASHE**

Ratios of household earnings to individual earnings are of interest as they can be used as a method of extrapolating from individual to household earnings.

For example, affordability estimates given in Herefordshire's Supplementary Planning Guidance (SPG) on Affordable Housing, make the assumption that the household income will be 1.5 times median individual earnings (from ASHE) for a dual earner household. The rationale for this is that Census figures for Herefordshire show that in families with dependent children where there were 2 earners, in nearly three quarters of cases, the second earner worked part-time. The further assumption was made that the second earner would bring in an amount equivalent to half of full-time earnings.

Looking at the estimates of household income, the mean figure for the 23 MSOAs in Herefordshire is £551 per week, equating to household income of £28,700 per year. The household estimates data covers the year 2004/5 whereas ASHE data relates to a survey carried out every April, so the mean of the ASHE figures for 2004 and 2005 is used to compare with the household estimates data. The mean of the ASHE figures for 2004 and 2005 is £412 per week (mean weekly earnings), equating to individual income of £21,478 per year.

Thus the estimate for mean household income is 1.34 times the ASHE individual earnings figure. The table below shows that the estimate of household income varies from 1.04 times the individual average earnings figure to 1.68 times the individual figure across the MSOAs.

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.

**Table 4: Ratios of estimates of household income to individual earnings**

	Estimate of gross weekly household income 2004/5	Equivalent annual income	Estimate of <b>household income</b> as a multiple of ASHE figure for Herefordshire <b>mean gross individual earnings</b>
Mean figure for the 23 Herefordshire MSOA's	£551	£28,700	1.34
MSOA with lowest weekly income (Hereford City "S Wye West")	£430	£22,400	1.04
MSOA with the highest weekly income ("Malvern Beacons" area)	£690	£36,000	1.68

It is interesting to note that the ratio of mean gross household income to mean individual earnings worked out at between 1.04 and 1.68 (Table 4) which is in the same "ball park" as the SPG assumption of 1.5.

It must be remembered that the 2 estimates are not directly comparable because the SPG calculation is looking at the **earnings of working households**, rather than **the overall income of all households**. The 2001 Census gave a figure of 74,282 households in Herefordshire, and only 47,708 (64%) of these had at least one person working. Of the non-working households, in many cases this would be due to the household members having retired - 20,017 households (27%) consisted solely of people of pensionable age (though it must be remembered that some people of pensionable age do still continue to work).

For further information on the data in this article, please contact the Research Team on 01432 260464 or e-mail [researchteam@herefordshire.gov.uk](mailto:researchteam@herefordshire.gov.uk)