

Statistical bulletin

Income estimates for small areas, England and Wales: financial year ending 2012

Small area model-based income estimates covering local areas called Middle layer Super Output Areas (MSOAs) in England and Wales.

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1 . Main points

- Average weekly household income in 2011/12 (the financial year ending 2012) was highest in London and its surrounding areas
- Areas of lowest average household incomes were more widely spread across England and Wales than were the areas of highest incomes
- The difference between average total income and average net income was larger in highest income areas
- The percentage difference between average income before and after taking into account housing costs was largely similar for both areas of high income and areas of low income
- A case study illustrating the uses of the income estimates looked at the link between income and house prices. It showed that areas within cities in the north of England had more affordable housing than most middle layer super output areas (MSOAs) in England and Wales

2 . Introduction

The small area model-based income estimates are the official estimates of weekly household income at the [middle layer super output area \(MSOA\)](#) level in England and Wales for 2011/12. They are calculated using a model-based method to produce the following 4 estimates of income using a combination of survey data from the [Family Resources Survey](#) and previously published data from the 2011 Census and a number of administrative data sources. The 4 different measures of income are:

1. total weekly household income
2. net weekly household income
3. net weekly household income (equivalised¹) before housing costs
4. net weekly household income (equivalised¹) after housing costs

These 4 different estimates provide an indication of the average (mean) overall household income along with the average household income after taking into account tax payments and housing costs. In addition, the equivalised estimates of household income take into account household composition so that more meaningful comparisons can be made between households with different numbers of occupants. The full definitions of the 4 types of income are described at the beginning of each of the next 4 sections in the statistical bulletin.

If you are new to the small area income estimates, you might like to read our [User Guide \(1.72 Mb Pdf\)](#) for an introduction to the methods and possible uses for the data. For more detailed information about the modelling process used to produce the estimates, see the [Technical Report \(3.02 Mb Pdf\)](#) accompanying this release.

The small area income estimates are particularly useful for local authority planning. They are used to support effective service provision, targeting of resources and the allocation of grants and funding. They are also used by a range of government policymakers, businesses and academic organisations for various purposes including:

- assessing the relationship between local economies, industry sectors and income
- combining income data with indicators from related topics such as skills, employment, migration and housing
- strategic planning of site locations and forecasting by businesses

This statistical bulletin presents the results of the 2011/12 small area income estimates for each of the 4 types of income in turn. In these sections the geographic distribution of average household income at the MSOA level is described along with analysis of the overall distribution by income category. Analysis of change over time between the previous (2007/08) estimates and the latest version is not described in this bulletin because of the modelling process used to produce the statistics, which results in estimates which provide an indication of household income for the time period in question. However, it is possible to compare the income estimates of a small area over time, taking the confidence intervals into account to gain an understanding of whether an area's average household income is likely to have changes or not. For more information about identifying changes in estimated income over time, see the [technical report \(3.02 Mb Pdf\)](#) which accompanies the 2011/12 small area income estimates.

In addition, this bulletin includes a section that describes analysis of weekly household income from a housing perspective. This provides a practical case study of how the MSOA level income estimates can be used in combination with other small area data on an important topic related to income. In this section, we use previously published data from the ONS House Price Statistics for Small Areas to describe the relative affordability of housing in relation to average weekly household income. We then examine the geographic variation in affordability and provide local examples of relatively large variations in housing affordability.

Note: 1. See section 4 for more information about equivalisation

Throughout this release, 2011/12 refers to the financial year ending 2012; April 2011 to March 2012 and likewise for earlier years.

3 . Total weekly household income

Total weekly household 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. This measure is particularly useful for understanding the average level of income from earnings and investments, as it is not affected by payments of tax or other deductions. It is calculated as the sum of income from:

- earnings (gross)
- self-employment
- investments
- tax credits
- retirement pensions and income support
- other benefits
- other pensions
- other/remaining sources

London and the areas surrounding it contained most of the areas in which average (mean) total weekly household income was highest. In 2011/12, 38 of the top 50 middle layer super output areas (MSOAs) for average total weekly household income were in London with the others close by in the neighbouring East and South East regions. Looking at the top 50 areas for average weekly income is useful in giving an indication of the highest level of average income rather than only looking at the absolute highest income value because of the uncertainty around the estimates shown in the confidence intervals, but the top 50 does not represent a particular income threshold. Map 1 demonstrates how concentrations of MSOAs which had relatively high average household income outside of London and its surrounding areas were less common. These were usually isolated geographically from other areas of high average income. Such areas include parts of Sheffield, Harrogate and Cardiff.

The areas which had the lowest average total weekly household income were generally more spread out geographically than areas in which household income was higher. For example, cities and larger towns across England and Wales tended to have some areas of relatively low income within them, but not all had areas of particularly high income. This is partly explained by the fact that income in many of London's MSOAs was notably higher than income in other cities' MSOAs. However, parts of England and Wales had groupings of areas which had relatively low income in 2011/12. These groupings include cities in the North East of England, South Wales, Birmingham and the cities forming the belt between Liverpool and Hull, often referred to as the "Northern Powerhouse" region of England.

Map 1: Mean total weekly household income by MSOA

England and Wales, 2011/12

Source: Office for National Statistics

Notes:

1. Class breaks for income based on rounded 10% increments of the range
2. MSOA = Middle layer super output area
3. Source: Office for National Statistics licensed under the Open Government Licence v.3.0. Contains OS data © Crown copyright 2015 " as done in Map 2

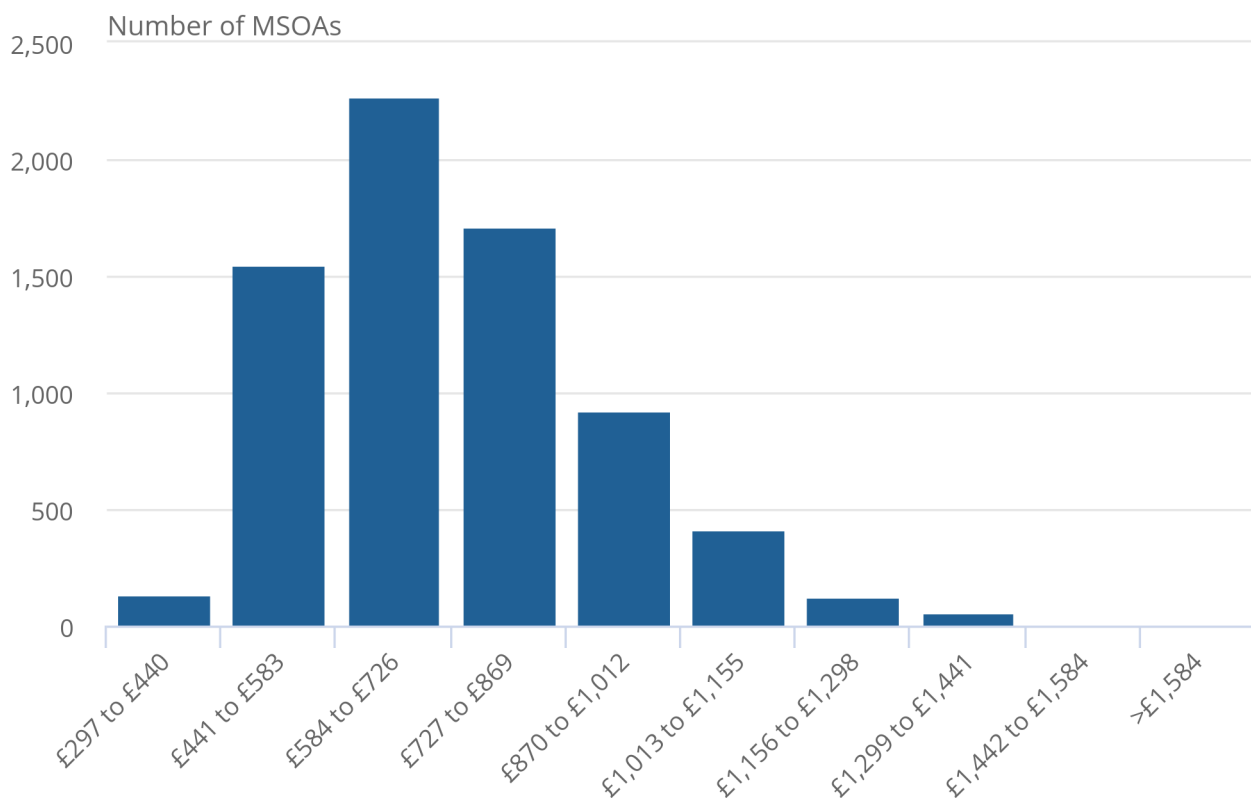
The distribution of MSOAs for mean total weekly household income was negatively skewed, which means that areas with the highest income were further away from the mean than were areas which had the lowest income. Some areas in the higher brackets of income compared had particularly high levels of average household income, whereas a larger number of areas fall within the lower income brackets. Figure 1 illustrates this, showing that £584 to £726 was the modal category for MSOAs in terms of mean total weekly household income.

Figure 1: Distribution of MSOAs for mean total weekly household income

England and Wales, 2011/12

Figure 1: Distribution of MSOAs for mean total weekly household income

England and Wales, 2011/12



Source: Office for National Statistics

Notes:

1. Class breaks for income based on rounded 10% increments of the range
2. MSOA = Middle layer super output area

Note: Throughout this release, 2011/12 refers to the financial year ending 2012; April 2011 to March 2012 and likewise for earlier years.

4 . Net weekly household income

Net household weekly income (unequalised) is the sum of the net income of every member of the household. It is useful when assessing the average levels of income having taken account of common deductions from salary. For example, the average net weekly income might be significantly higher in one area than in another, despite these areas having similar level of average total weekly income. This would indicate that factors such as council tax payments account for some of the difference in income, rather than the average amount earned alone.

The net weekly measure of average income does not take account of different areas having different household compositions and so is also useful in assessing the extent to which the number of people and their characteristics influences average household income. See section 4 for more information about accounting for household composition.

Net weekly household income is calculated using the same components as total income but income is net of:

- 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
- parental contribution to students living away from home

Geographically, average (mean) net weekly household income followed the same trends as mean total weekly household income. Middle layer super output areas (MSOAs) where net weekly income was highest in 2011/12 are in and around London, while a few areas in the more northern parts of England and Wales also had relatively high average income. Map 2 shows that the MSOAs which had the lowest average net weekly income are also in the same areas as for average total weekly income. We would expect this to be the case because we would expect the difference between total income and net income to be broadly consistent geographically.

Map 2: Mean net weekly household income (unequalised) by MSOA

England and Wales, 2011/12

Source: Office for National Statistics

Notes:

1. MSOA = Middle layer super output area Source: Office for National Statistics licensed under the Open Government Licence v.3.0 Contains OS data © Crown copyright 2015

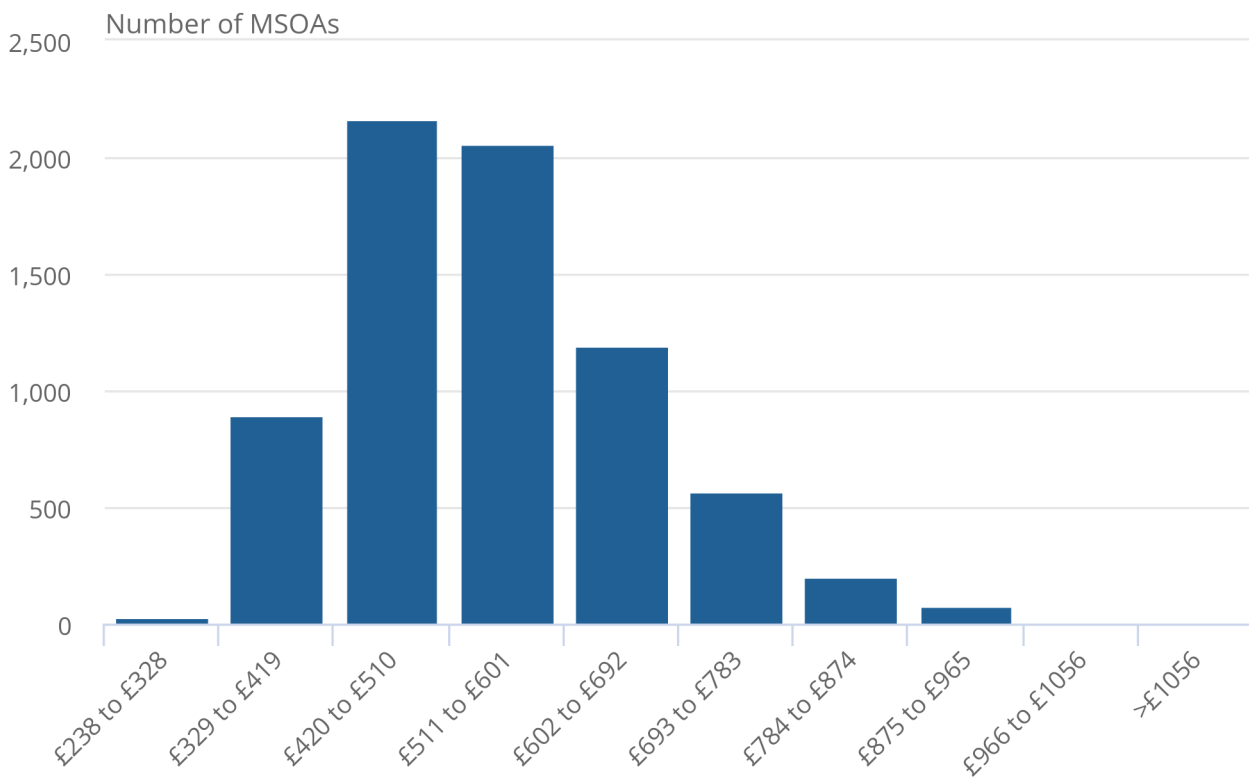
Figure 2 shows the distribution of MSOAs for mean net weekly household income. When compared with mean total weekly household income, the distribution is not so negatively skewed, although there are some areas which fall within relatively high income groups. This could be due to the highest earning households paying proportionately more in mandatory charges such as income tax.

Figure 2: Distribution of MSOAs by mean net weekly household income (unequivilised)

England and Wales, 2011/12

Figure 2: Distribution of MSOAs by mean net weekly household income (unequivilised)

England and Wales, 2011/12



Source: Office for National Statistics

Notes:

1. Class breaks for income based on rounded 10% increments of the range
2. MSOA = Middle layer super output area

Figure 3 illustrates further the fact that areas with the highest average total income contain the highest earning households, which consequently pay proportionately more tax. When comparing the 5 MSOAs estimated to be the areas with the highest income with the 5 areas estimated to have the lowest income, the difference between total and net income is larger in percentage terms for the top income areas.

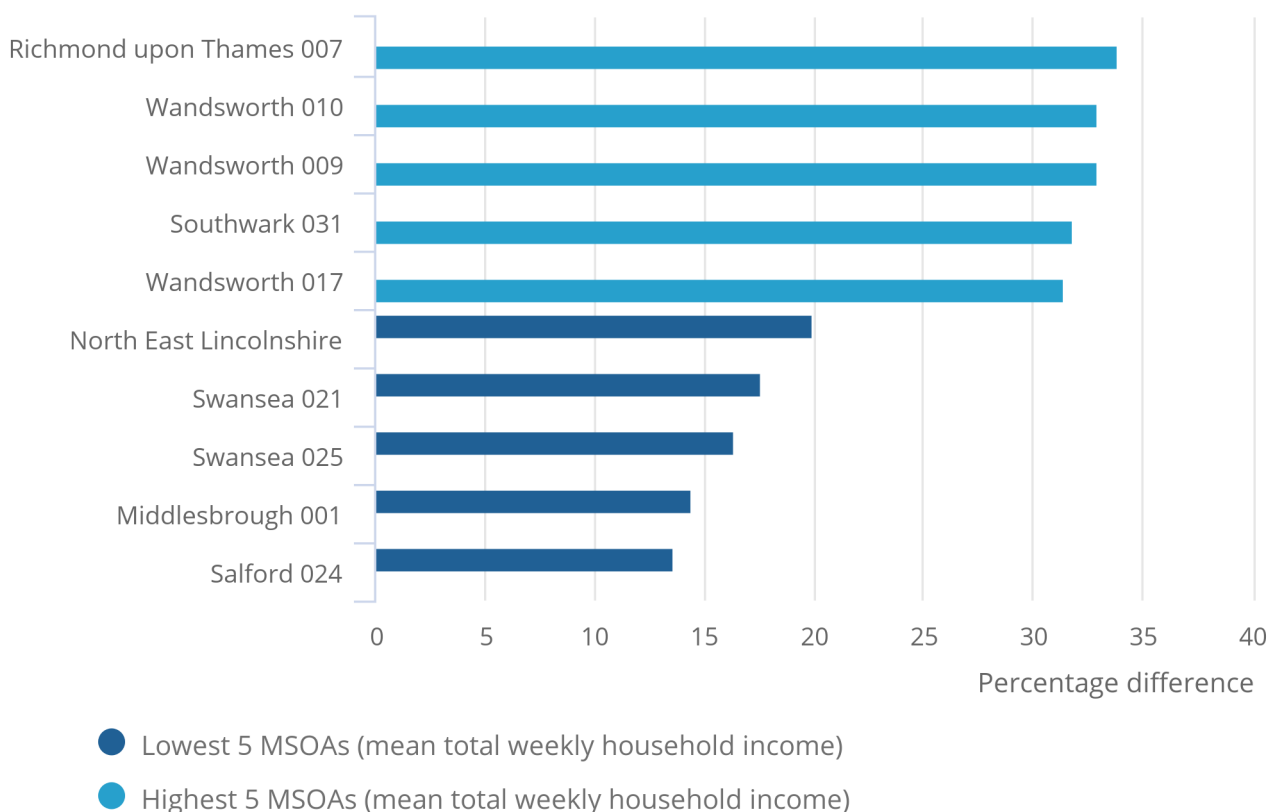
Households in areas with the highest weekly income are more likely to pay higher levels of income tax on their earnings and are also perhaps more likely to have investment returns on which they pay tax (more so than households in areas with the lowest average weekly income). This could further explain the proportionately larger difference in total and net income for higher average income areas.

Figure 3: Percentage difference between mean total weekly household income and mean net weekly household income for the 5 highest and lowest MSOAs[2] in England and Wales

2011/12

Figure 3: Percentage difference between mean total weekly household income and mean net weekly household income for the 5 highest and lowest MSOAs[2] in England and Wales

2011/12



Source: Office for National Statistics

Notes:

1. MSOA = Middle layer super output area
2. Note that it is not possible to identify, with certainty, the MSOAs with the highest and lowest weekly household income, because the 95% confidence intervals which surround the point estimates span multiple MSOAs. However, the MSOAs selected do provide an indication of the highest and lowest areas for weekly household income

Notes for Net weekly household income

1. note that it is not possible to identify, with certainty, the MSOAs with the highest and lowest weekly household income, because the 95% confidence intervals which surround the point estimates span multiple MSOAs. However, the MSOAs selected do provide an indication of the highest and lowest areas for weekly household income
2. throughout this release, 2011/12 refers to the financial year ending 2012; April 2011 to March 2012 and likewise for earlier years

5 . Net weekly household income before housing costs (equivalised)

Net household weekly income before housing costs (equivalised) is composed of the same elements as net household weekly income but is subject to an equivalisation scale. Applying an equivalisation scale adjusts the household income values to take into consideration the number and composition of people in the household; it represents the income level of every individual in the household.

Equivalisation is needed in order to make sensible income comparisons between households. For example, one household may have 2 adults and 2 children and have a total weekly household income of £300. If this is compared with a household containing just 1 adult who has a total weekly household income of £270, then although the first household has the higher total weekly income it is the second that has the higher standard of living (assuming equal living and housing expenses).

Geographically, mean net weekly household income (equivalised) before housing costs follows the same trends as mean net weekly household income in that middle layer super output areas (MSOAs) with the highest weekly income were predominantly in and around London , with a few in northern parts of England and Wales. Map 3 shows that the estimates of equivalised net weekly income themselves are also similar to the estimates of net weekly income, with more than 95% of areas for the equivalised estimates falling within plus or minus 15% of the unequivalised estimates.

Map 3: Mean net weekly household income (equivalised) before housing costs by MSOA

England and Wales, 2011/12

Source: Office for National Statistics

Notes:

1. MSOA = Middle layer super output area Contains OS data © Crown copyright 2015

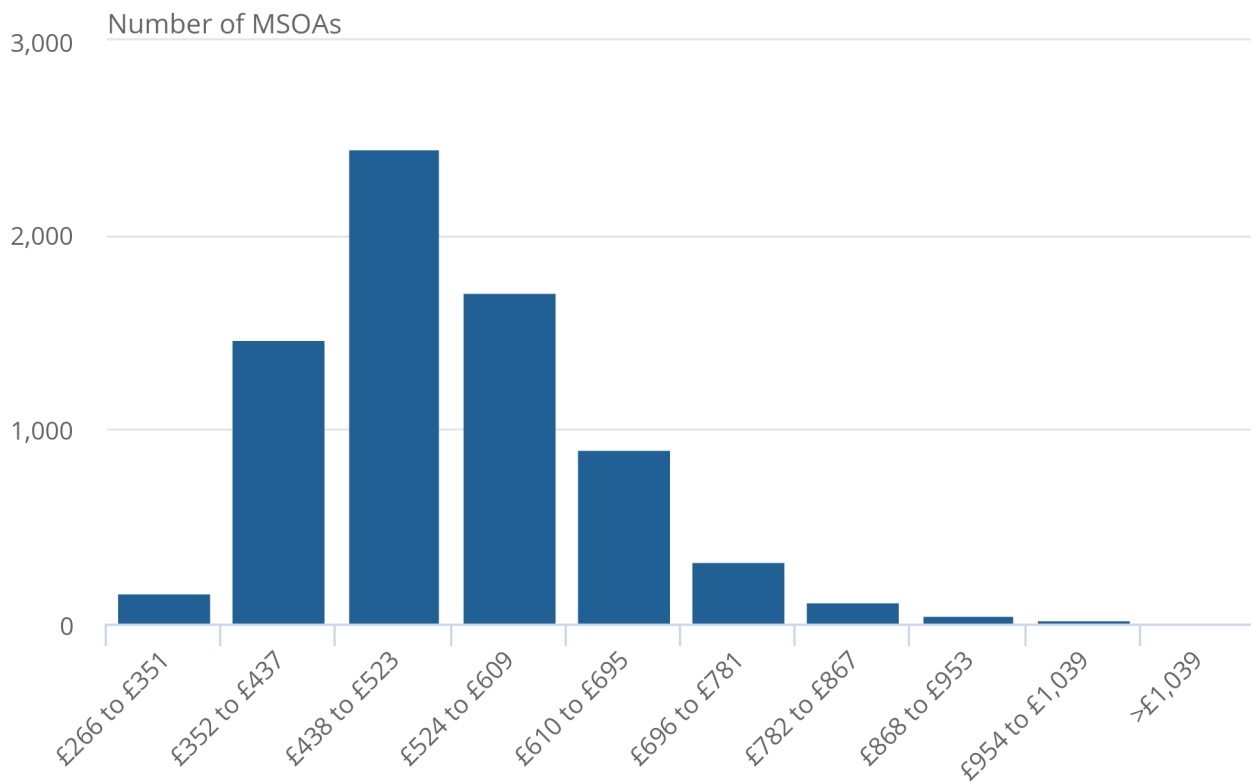
Figure 4 shows that the distribution of MSOAs for average net weekly household income (equivalised) before housing costs closely follows the distribution for the unequivalised net measure of income (as shown in Figure 2). One main difference is that the lowest earning areas have been estimated slightly higher as a result of equivalisation. This is likely to be because the adjustment to the survey data during the equivalisation process is larger for households whose earnings are further away from the mean, as the effect of household composition is greater for these households.

Figure 4: Distribution of MSOAs by mean net weekly household income (equivalised) before housing costs

England and Wales, 2011/12

Figure 4: Distribution of MSOAs by mean net weekly household income (equivalised) before housing costs

England and Wales, 2011/12



Source: Office for National Statistics

Notes:

1. Class breaks for income based on rounded 10% increments of the range
2. MSOA = Middle layer super output area

Notes for Net weekly household income before housing costs (equivalised)

1. throughout this release, 2011/12 refers to the financial year ending 2012; April 2011 to March 2012 and likewise for earlier years

6 . Net weekly household income (equivalised) after housing costs

Net household weekly income after housing costs (equivalised) is composed of the same elements of net household weekly income but is subject to the following deductions prior to an equivalisation scale being applied:

- rent (gross of housing benefit)
- water rates, community water charges and council water charges
- mortgage interest payments (net of any tax relief)
- structural insurance premiums (for owner occupiers)
- ground rent and service charges

Net weekly household income (equivalised) after housing costs is particularly useful for assessing the impact of the costs of housing for a given area and for providing an indicator of disposable income before the cost of living. For example, if one area has significantly higher average household income before housing costs but similar average income after housing costs, we can deduce that the costs of housing are greater in that that area.

Map 4 shows that average income on this measure is broadly consistent geographically with the other 3 measures of income (as shown in Map 1, Map 2 and Map 3). The locations of the middle layer super output areas (MSOAs) which had the highest and lowest average (mean) weekly income are similar to the other 3 measures.

Map 4: Net weekly household income (equivalised) after housing costs by MSOA

England and Wales, 2011/12

Source: Office for National Statistics

Notes:

1. MSOA = Middle layer super output area Contains OS data © Crown copyright 2015

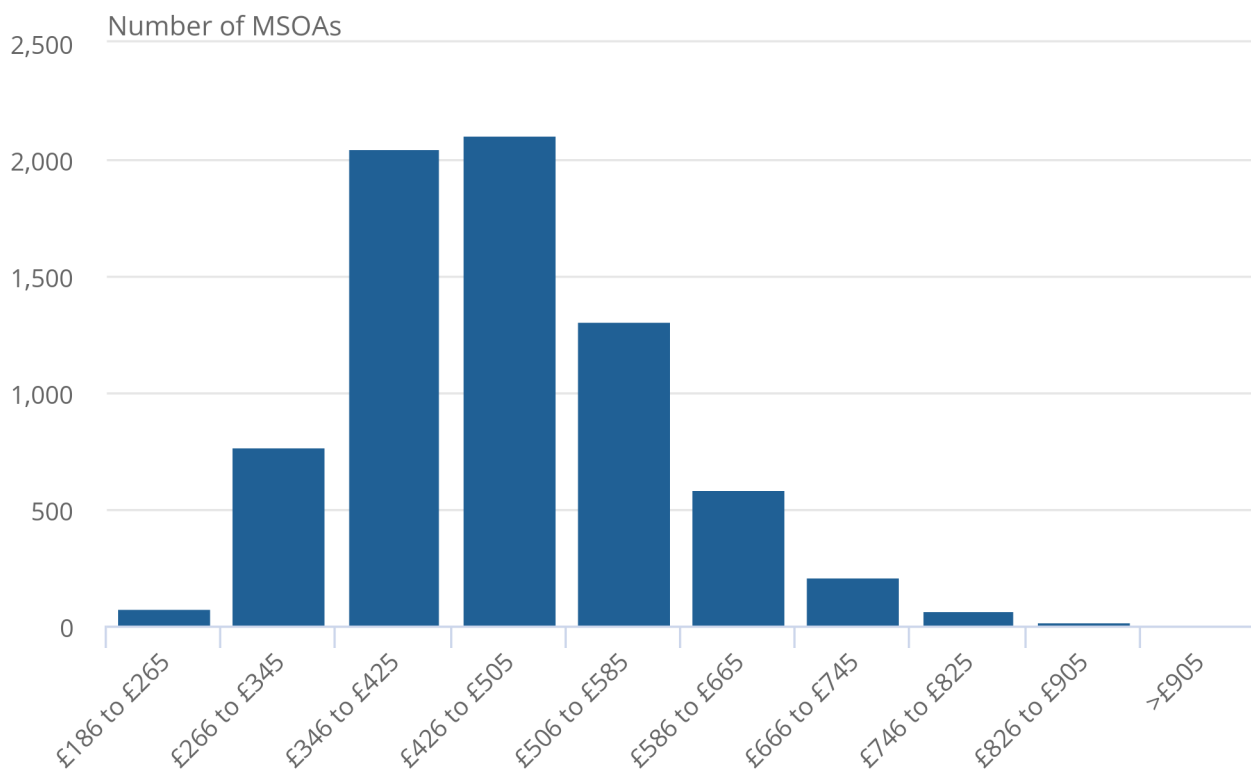
Figure 5 shows that the distribution of MSOAs for mean net weekly household income (equivalised) after housing costs is largely similar to the distribution for the other measures (as shown in Figure 1, Figure 2 and Figure 4). Generally, the distribution of income is negatively skewed, with a larger number of areas in the lower income brackets and a smaller number of areas falling within higher income brackets further away from the mean.

Figure 5: Distribution of MSOAs for mean net weekly household income (equivalised) after housing costs

England and Wales, 2011/12

Figure 5: Distribution of MSOAs for mean net weekly household income (equivalised) after housing costs

England and Wales, 2011/12



Source: Office for National Statistics

Notes:

1. Class breaks for income based on rounded 10% increments of the range
2. MSOA = Middle layer super output area

Areas in which average net weekly income after housing costs is relatively high, households could expect to spend proportionately more of their income on mandatory charges such as income tax than do the lowest earning areas (as shown in Figure 3). However, Figure 6 shows that both areas which had relatively low average income and areas of high average income tended to spend proportionately similar amounts on housing costs.

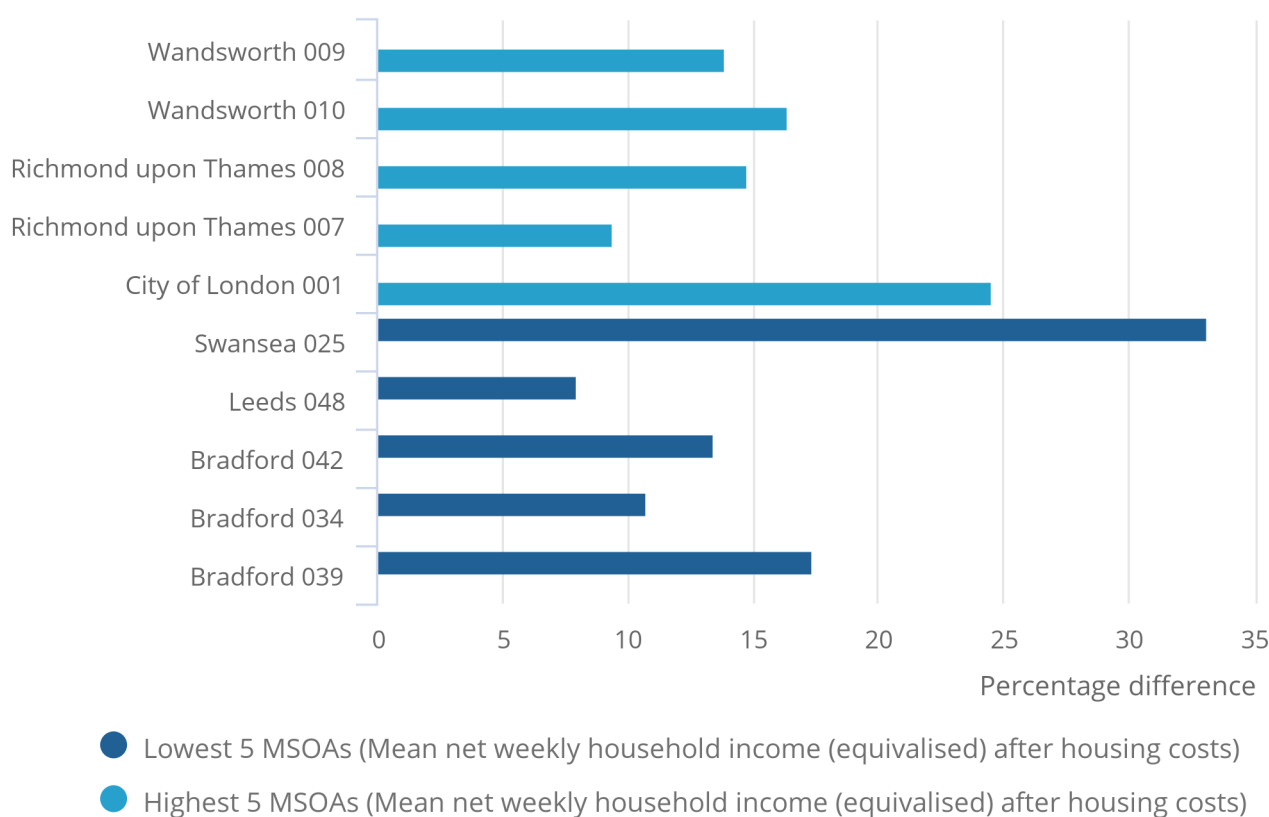
Figure 6 represents averages for given areas and it is important to recognise that there will be individual households with higher or lower than their MSOA's average income. While it could be said that on average, high and low income households spend proportionately similar amounts on housing costs, there will be individual households spending relatively large or small proportions of their income on housing costs.

Figure 6: Percentage difference between mean net weekly household income (equivalised) before housing costs total and mean net weekly household income (equivalised) after housing costs for the 5 highest and lowest MSOAs[2] in England and Wales

2011/12

Figure 6: Percentage difference between mean net weekly household income (equivalised) before housing costs total and mean net weekly household income (equivalised) after housing costs for the 5 highest and lowest MSOAs[2] in England and Wales

2011/12



Source: Office for National Statistics

Notes:

1. MSOA = Middle layer super output area
2. Note that it is not possible to identify, with certainty, the MSOAs with the highest and lowest weekly household income, because the 95% confidence intervals which surround the point estimates span multiple MSOAs. However, the MSOAs selected do provide an indication of the highest and lowest areas for weekly household income

Note: Throughout this release, 2011/12 refers to the financial year ending 2012; April 2011 to March 2012 and likewise for earlier years.

7 . Small Area Income Estimates: A Housing Perspective

The publication of middle layer super output area (MSOA) level income estimates for 2011/12 presents an opportunity for detailed housing affordability analysis. This provides a simple, practical example of how the income estimates can be used in conjunction with other small area data. Insight into housing affordability at the local level is increasingly important in understanding the changing pressures on the housing market and home ownership.

By comparing the income data with previously published MSOA level median house prices (part of our [House Price Statistics for Small Areas](#)) we can gain insight into the relative affordability of different areas in England and Wales. In doing this, we can identify areas of particularly high or low affordability and help inform local housing policy. For example, a household with an annual income of £25,000 living in a house worth £200,000 has a house price to weekly income ratio of 416. Another household, with an annual income of £85,000, living in a house worth £720,000 has a house price to weekly income ratio of 440. This means that despite the second household receiving more income, the relative affordability of their house is lower than the household which receives £25,000. In this example, and in the analysis that follows, a high ratio of house price to income represents low housing affordability.

This method provides a useful summary measure of variations in housing affordability at the area level, as opposed to the household level, because it uses average values of income and house price for each area. Household level variation in housing affordability is not discussed here because the small area income estimates only provide information about the mean household income for whole areas, rather than percentiles of income or for individual households.

In England and Wales in 2014, the average MSOA had an average house price equal to 380 times net weekly household income. The lowest house price to income ratio was in the Bradford 044 MSOA. In this area, the average house price for all dwelling types was equal to 108 times the average net weekly income. This MSOA covers part of the Shearbridge area of Bradford and also contains the University of Bradford Campus.

The highest house price to income ratio in 2014 was in the Westminster 019 MSOA which covers part of the Knightsbridge area and London's Hyde Park. In this area, the average house price for all dwelling types was equivalent to 4,097 times the average net weekly income.

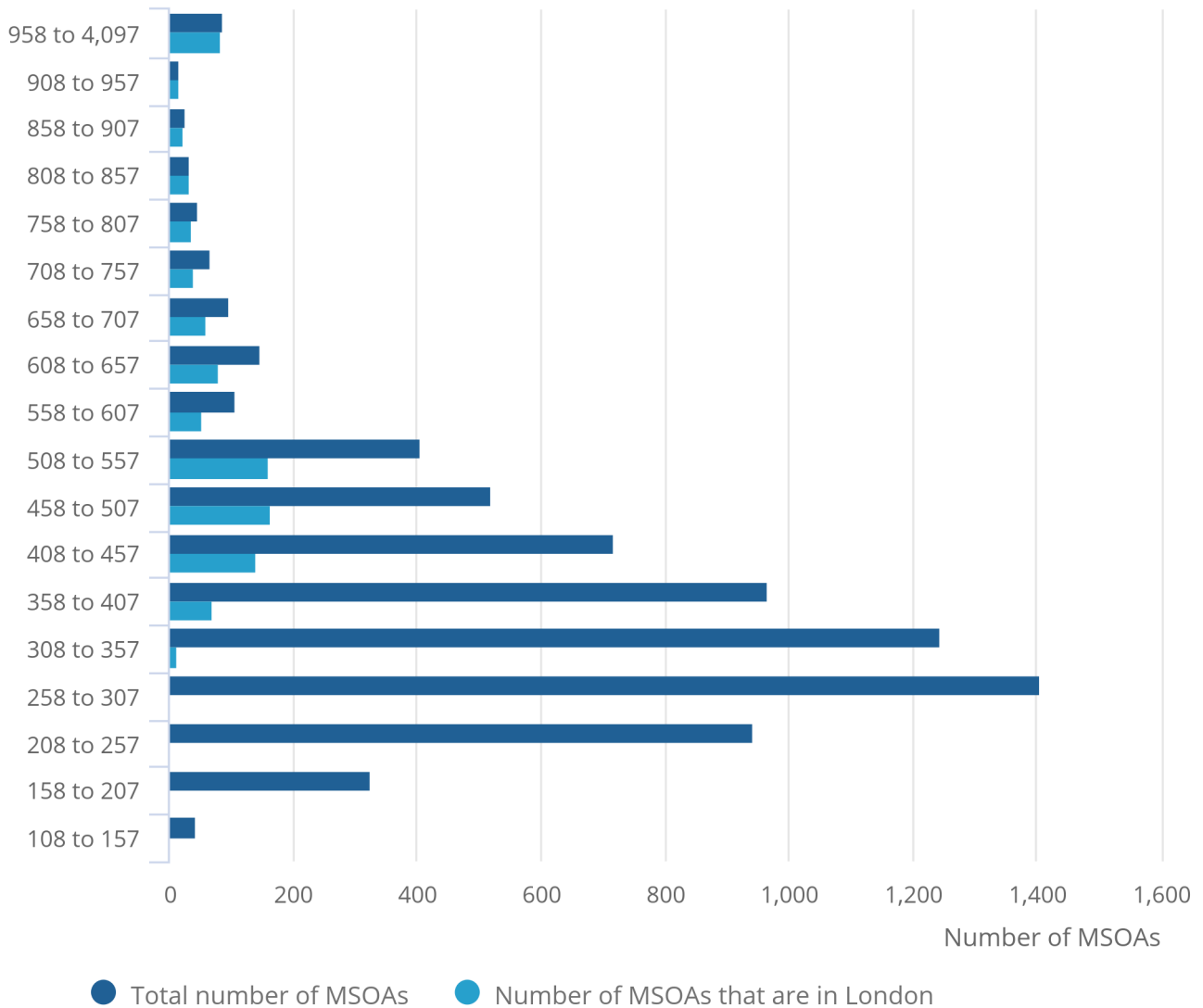
Figure 7 illustrates the distribution of MSOAs according to house price to income ratio. It shows that a number of areas, especially those in London, had lower than normal housing affordability. These are shown in the bars towards the top of the chart. Note that the affordability of housing was calculated from median house price and mean net weekly salary for all areas. Using other measures such as deciles for house prices would also reveal similar patterns, with London areas consistently appearing at the upper end of the distribution, although the scale and range of the distribution would depend on which deciles are used.

Figure 7: Distribution of MSOAs by housing affordability[2]

England and Wales, 2014

Figure 7: Distribution of MSOAs by housing affordability[2]

England and Wales, 2014



Source: Office for National Statistics

Notes:

1. MSOA = Middle layer super output area
2. Ratio of median house price (2014) to mean net weekly income (2011/12)

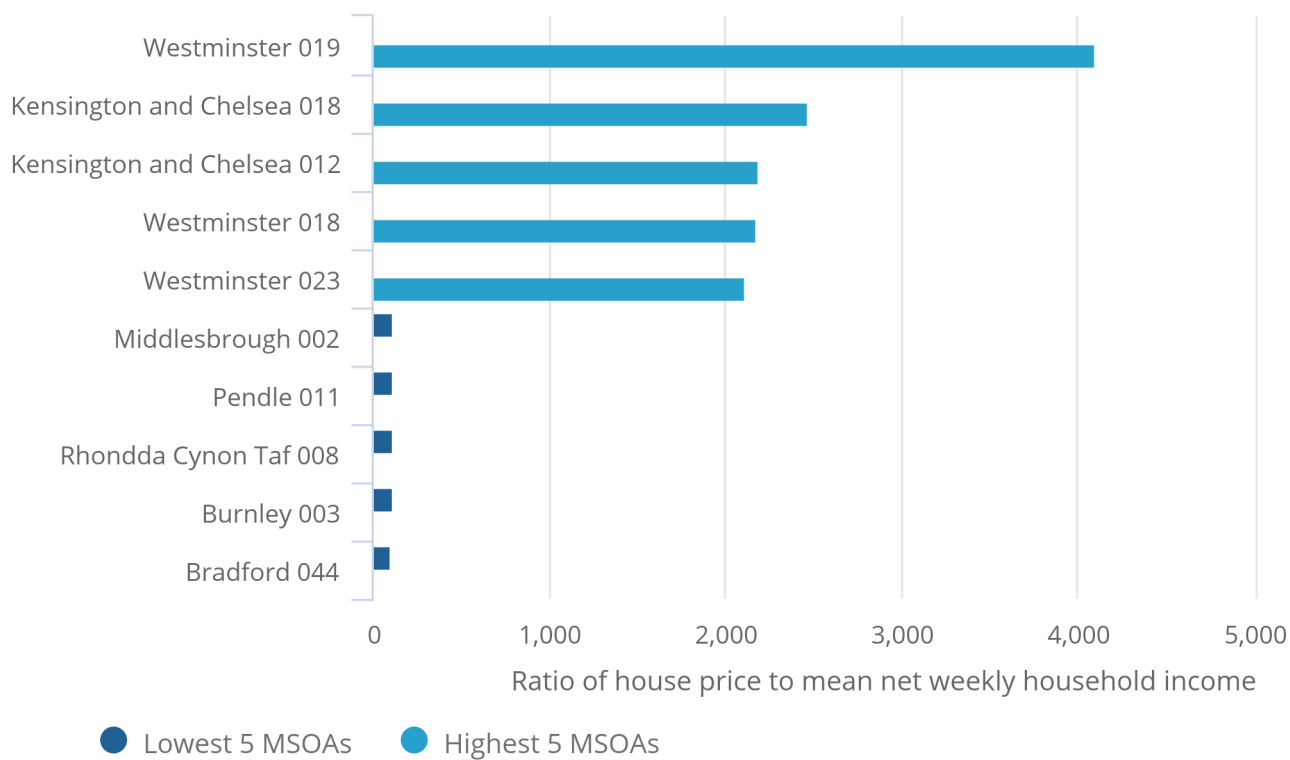
The relatively low affordability of selected areas in London is also illustrated in Figure 8. The highest house price to income ratios were in parts of Westminster and Kensington and Chelsea. These contrasted greatly with the most affordable areas such as those in the north of England and parts of Wales. Figure 8 highlights the differences in income between the areas with the highest average weekly income, and it also demonstrates how areas with low average income tended to have similar levels of income and differed far less than areas of high income. The 5 areas in which average weekly income was highest and lowest are shown in Figure 8 to give an idea of the range of incomes estimates, but in reality there are many areas which had an estimated average income close to that of the lowest areas shown here.

Figure 8: Ratio of median house price (2014) to mean net weekly income (2011/12)[2] by MSOA

5 highest and lowest areas in England and Wales

Figure 8: Ratio of median house price (2014) to mean net weekly income (2011/12)[2] by MSOA

5 highest and lowest areas in England and Wales



Source: Office for National Statistics

Notes:

1. MSOA = Middle layer super output area
2. Ratio of median house price (2014) to mean net weekly income (2011/12)

The least affordable areas of England and Wales were not limited to London. Map 5 shows that MSOAs in the South East and the East of England were relatively less affordable than the rest of England and Wales. The most affordable housing was in parts of the north, particularly those cities along and around the M62 between Liverpool and Hull, sometimes referred to as the “Northern Powerhouse”. Areas of Wales, particularly in the south had relatively low house price to income ratios.

Map 5: Ratio of median house price (2014) to mean net weekly income (2011/12) by MSOA

England and Wales

Source: Office for National Statistics

Notes:

1. MSOA = Middle layer super output area Contains OS data © Crown copyright 2015

Throughout England and Wales, affordability tended to be lower in areas with higher average income. This could be partly due to those on higher income having more access to credit, helping drive the housing market and therefore leading to house price inflation. However, many other factors can influence local housing markets such as proximity to certain industries, employment opportunities and the general desirability of an area.

Apart from in and immediately around London, urbanised areas throughout England and Wales tended to have relatively high affordability, partly due to the prevalence of less expensive types of housing such as terraced houses and flats in densely populated areas. This pattern is particularly visible in the “Northern Powerhouse” region of England. This refers to the grouping of cities and urbanised areas between Liverpool in the west and Hull in the east, which had relatively low house price to income ratios.

Map 6 shows that areas such as Stoke-on-Trent, Nottingham and Birmingham, south of the bulk of the “Northern Powerhouse” also had lower house price to income ratios relative to most MSOAs in England and Wales. These cities are well served by road transport links such as the M6 and M1 and are connected laterally by the M62. To the north and south of this area are the Yorkshire Dales and Peak District national parks respectively. The desirable rural, and to some extent remote, setting of these parks and their surroundings might be a factor influencing higher house price to income ratios than in the “Northern Powerhouse” areas.

Map 6: Ratio of median house price (2014) to mean net weekly household income (2011/12) by MSOA

Northern Powerhouse area

Source: Office for National Statistics

Notes:

1. MSOA = Middle layer super output area Contains OS data © Crown copyright 2015

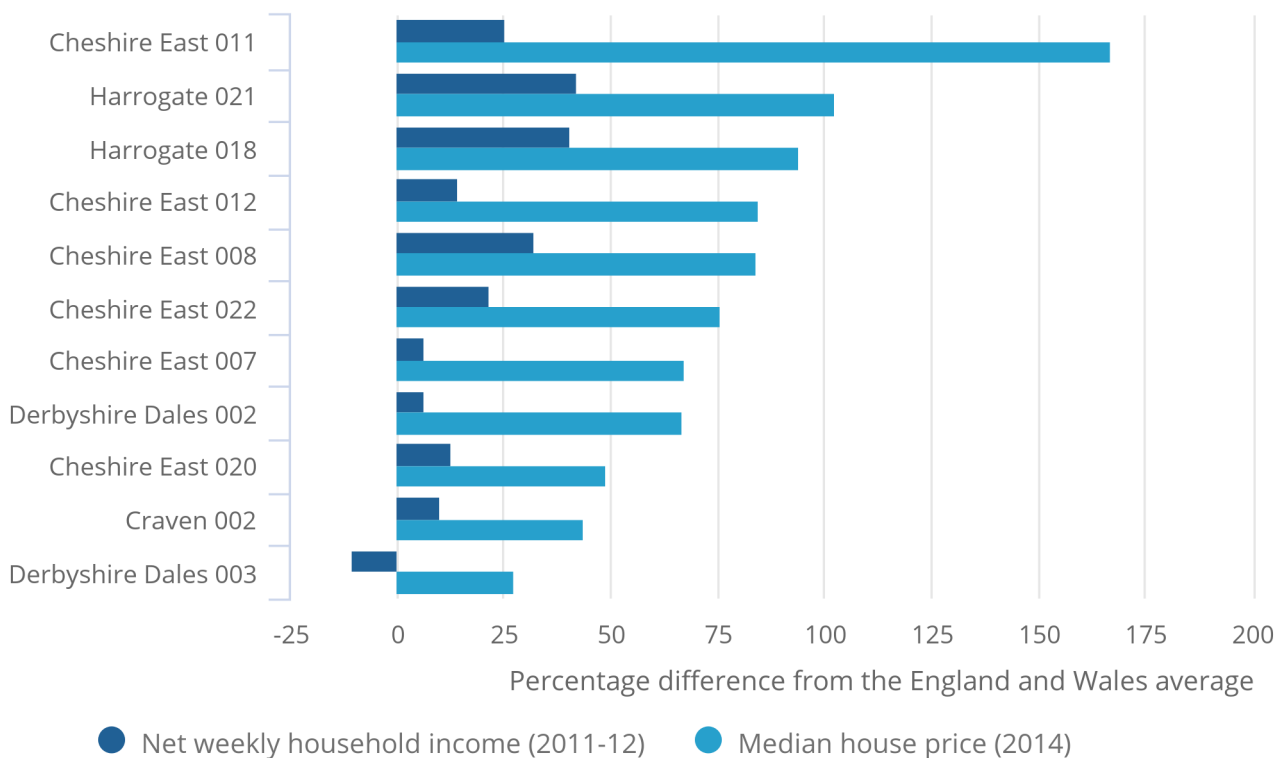
Despite average income often being higher in less affordable rural areas than in towns and cities, house prices can be higher in some rural areas by a larger margin. Figure 9 shows a selection of the least affordable MSOAs that lie to the north and south of the “Northern Powerhouse” region. Net weekly income and average house prices for these areas are compared in terms of percentage difference to the average (median value) of each measure for England and Wales. It shows that median house prices accounts for more of the variation in housing affordability than does average income.

Figure 9: Percentage difference between median house price (2014), mean net weekly household income (2011/12) and the [2],[3] England and Wales average for each measure

Selection of least affordable MSOAs[4] immediately north and south of the Northern Powerhouse region

Figure 9: Percentage difference between median house price (2014), mean net weekly household income (2011/12) and the [2],[3] England and Wales average for each measure

Selection of least affordable MSOAs[4] immediately north and south of the Northern Powerhouse region



Source: Office for National Statistics

Notes:

1. MSOA = Middle layer super output area
2. The median house price for MSOAs in England and Wales in 2014 was £195,000
3. The median net weekly household income estimate for MSOAs in England and Wales was £532.26
4. Data are also available for all MSOAs in England and Wales as part of the chart download data file

Many areas of England and Wales have neighbouring areas of contrasting house price to income ratios. Liverpool and the Wirral in North West England is one such area where areas further away from the city itself had noticeably less affordable housing than the more urban areas closer to the centre.

Map 7 shows that in 2014, Liverpool and its surrounding urban extent had relatively low house price to income ratios. This extended across the river Mersey and into Birkenhead and Wallasey, which contain areas of urban sprawl with good connections to the city of Liverpool via the Mersey tunnel and ferry services. These areas, generally on the banks of the river Mersey contrast with areas slightly further south within the Wirral such as Heswall, West Kirby and Neston, along the River Dee and west of the M53. These areas are less densely populated than the centre of Liverpool and generally had higher house price to income ratios.

Map 7: Ratio of median house price (2014) to mean net weekly household income (2011/12) by MSOA

Liverpool, The Wirral and surrounding areas

Source: Office for National Statistics

Notes:

1. MSOA = Middle layer super output area Contains OS data © Crown copyright 2015

. Background notes

1. Other geographical areas: MSOA estimates can be aggregated to provide average income for higher geographical levels, for example, local authorities. No accuracy estimates are available for such aggregations.
2. Ranking: Care needs to be taken when using ranks based on MSOA estimates due to their uncertainty.
3. Extreme areas: The modelling process tends to shrink estimates towards the average level, so the true distribution of MSOA average incomes will have more extreme high and low values than the estimated values.
4. Consistency between the 4 estimates: Due to the modelling approach, some inconsistencies may arise when comparing the different estimates.
5. Comparison over time: Consistent estimates have been produced using 2004/05 data, the 2007/08 data and the 2011/12 data. If the confidence intervals of estimates at the 2 time points for a particular MSOA do not overlap, then there is evidence of change over time. However, the difference between the estimates should not be interpreted as an accurate measure of change.
6. For more information about the uses and limitations of the income estimates, see the [user guide \(1.72 Mb Pdf\)](#).
7. Throughout this release, 2011/12 refers to the financial year ending 2012; April 2011 to March 2012 and likewise for earlier years.
8. Details of the policy governing the release of new data are available by visiting www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html or from the Media Relations Office email: media.relations@ons.gov.uk