

HOUSE PRICE STATISTICS FOR SMALL AREAS – USING ADMIN DATA TO GIVE NEW INSIGHTS

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Abstract

The Office for National Statistics (ONS) produce quarterly rolling year House Price Statistics for Small Areas (HPSSAs) for England and Wales. The statistics are produced using administrative data that is obtained without charge from the Land Registry, the government agency responsible for maintaining a record of land ownership in England and Wales. This paper will explain the source data and how it is processed to create the HPSSAs. It will then describe the resulting statistical outputs, as well as demonstrating how the product has been used by ONS to support policy needs and provide new insights.

Land Registry 'price paid' data provides a reliable administrative source for HPSSAs because whenever a person transfers ownership of a property or takes a mortgage out against it there is a legal requirement to supply Land Registry all the relevant details. Land Registry hold data going back to 1995, which allows a long time series to be produced. Using geo-referencing, the postcode of each transaction is matched to a postcode lookup file which determines the small area where the transaction took place.

The smallest areas covered by the HPSSAs are middle layer super output areas (areas with a population of approximately 7,800 people) but data are also created for a range of higher level geographies. The statistics are broken down by different house type (detached, semi-detached, terraced houses and flats/maisonettes), as well as by whether the property is newly built or existing stock.

The method used to create HPSSAs means that it is flexible and can be adapted to give new cuts of data and applied to new geographies. This has allowed ONS to use HPSSAs to support policy and provide new insights. Examples include linking the data to Small Area Income Estimates to provide a measure of housing affordability for local areas; how sales of £1 million and above houses have changed over time; understanding rural-urban differences in the housing market; and a focus on the differences in the major towns and cities in England and Wales.

Section 1 - Introduction

The Office for National Statistics (ONS), like many other National Statistical Institutes, has an increased interest in the use of administrative data to improve statistical outputs. This paper focuses on the House Price Statistics for Small Areas (HPSSAs) for England and Wales, which are produced using administrative data. It will describe the source data, including its strengths and weaknesses, and explain how the data are processed to create the HPSSAs. It will then show the resulting statistical outputs, as well as the policy relevant analyses that have been undertaken in line with the UK statistics strategy, *Better Statistics, Better Decisions*¹.

Section 2 – Source data

HPSSAs are produced using publicly available, open data from the Land Registry (LR), the government agency responsible for maintaining a record of land ownership in England and Wales. The information, which is obtained free of charge, covers residential dwelling transactions, together with information on the prices paid and type of dwelling (newly built and existing stock, detached, semi-detached, terraced or flat/maisonette). This is known as Price Paid data.

The LR Price Paid data are comprehensive in that they capture changes of ownership for individual residential properties which have sold for full market value and covers both cash sales and those involving a mortgage. LR hold Price Paid data back to the year 1995, which means that a long time series can be produced. Every change of ownership that is listed by

¹ https://www.statisticsauthority.gov.uk/wp-content/uploads/2015/12/images-betterstatisticsbetterdecisionsstrategyfor2015to202_tcm97-44175-5.pdf

LR is considered for use in the calculation of HPSSAs, and therefore the data are a reliable indicator of actual prices paid.

However, as with all administrative datasets used for the production of statistics, there are some limitations and risks that need to be considered. The primary purpose of LR data is for the registration of property transactions, not for the creation of statistics. Operational arrangements and processing adjustments can affect the raw data, with quality implications for the statistical outputs. For example, a small registration lag means that additional transaction data can be processed by LR for a period after the publication of the statistics. The result is that the whole time series has to be revised with every release.

Although the arrangements for the supply of LR data and the definitions used have been stable since the HPSSAs have been produced, ONS does not own the data. As such, there is always a risk that LR could introduce changes to the arrangements or definitions, and this could impact our ability to produce the HPSSAs.

Section 3 – Creating the HPSSAs

The smallest areas for which statistics are presented are middle layer super output areas (MSOAs). These are a statistical building block geography in England and Wales, with a population size of approximately 7,800 people (2011 Census). Data at this level provide a more detailed geographic understanding of housing trends. It can be useful to view MSOAs in the context of the larger areas in which they sit, such as local authorities, regions and country, and so, although not the primary output, data are also provided at these geographic levels.

In order to link LR Price Paid data to geographic information, the postcode of each transaction is matched to a postcode lookup file which can in turn be used to determine which MSOA and other geographies each transaction took place in. For this purpose the ONS's National Statistics Postcode Lookup (UK) (NSPL) product is used. The NSPL is a complete list of current and historic postcodes in the UK along with a selection of the statistical geographies they are situated within.

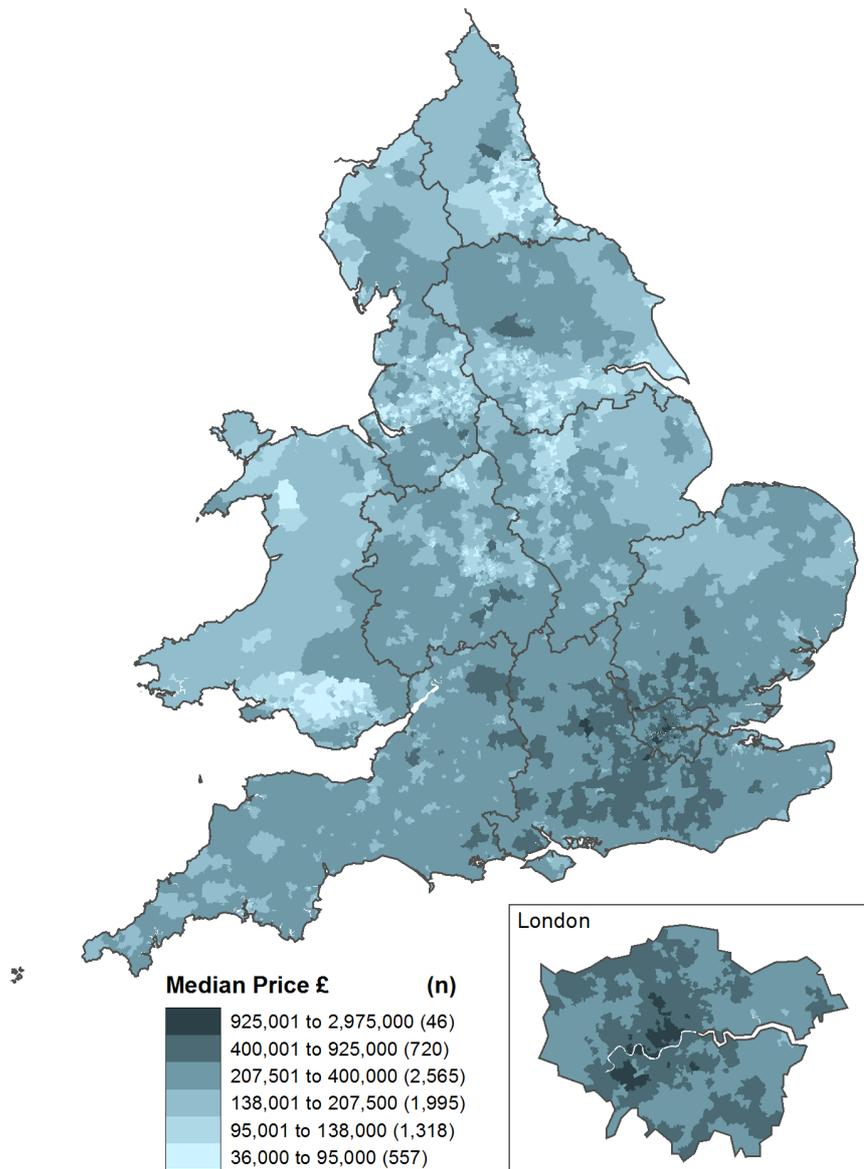
Once the matching has been completed, groups of sales with the same geographies can be formed and averages and sale counts can be calculated. The statistics are also broken down by different house type (detached, semi-detached, terraced houses and flats/maisonettes), as well as by whether the property is newly built or existing stock. It is necessary to use a full year's data to ensure the statistics are based on a sufficient number of property sales for each small area. HPSSA data are therefore released quarterly for a rolling year period.

Section 4 – Analysis

4.1 Spatial differences

Map 1 shows the spatial differences in the price paid data across England and Wales, with the more expensive areas located in London and surrounding regions. Of the 46 MSOAs in the highest category - those with a median more than £925,000 - 43 are in London. The areas with the lowest median prices paid (below £95,000) are mainly concentrated in MSOAs within northern cities and within parts of south Wales.

Map 1: Median house price for all dwellings by MSOA, England & Wales, year ending December 2015



Source: Office for National Statistics and Land Registry under the Open Government Licence v3.0.
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4.2 Change over time

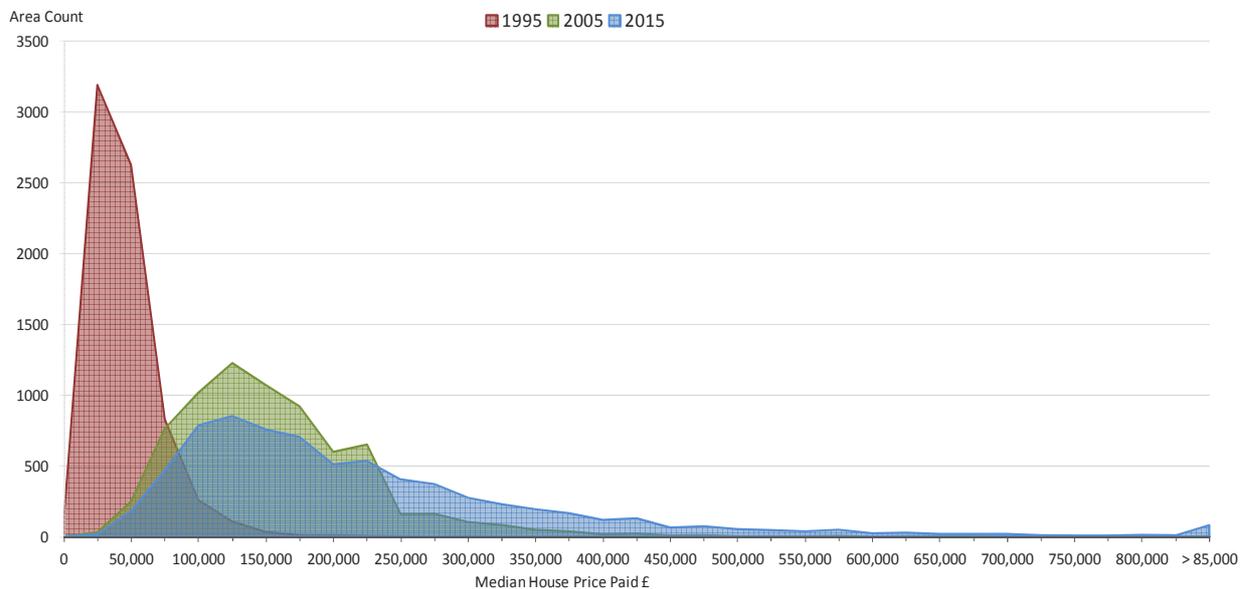
The price paid for residential property in England and Wales has changed markedly over the last two decades. Figure 1 shows the number of areas in each £25,000 median house price range between 1995 and 2015.

In 1995 the range of median prices was relatively narrow. The cheapest MSOA was in Manchester, with a median price paid of £9,000, while the most expensive area was in Westminster at £315,000. At this time over 8 out of every 10 MSOAs had a median price paid between £25,001 and £75,000.

In the decade between 1995 and 2005 the median price paid for properties rose rapidly in most areas and the overall range of median prices widened. In 2005 the most expensive area in the country (the same part of Westminster as in 1995) had a median price paid of over £1 million (£1,057,500) for the first time. The MSOA with the lowest median price paid in 2005 (£29,000) was in Redcar and Cleveland.

In the last decade the range of median house prices continued to widen. There was a large increase in the number of MSOAs which had a median price paid of more than £250,000, giving the chart a long 'tail'. These MSOAs are predominantly in London and the South East of England. The increases in median price paid slowed temporarily during the most recent recession in 2008 and 2009.

Figure 1: Number of MSOAs in each median price band, year ending December 1995 to 2015



Source: Office for National Statistics and Land Registry under the Open Government Licence v3.0

Section 5 – Adapting HPSSAs to give new policy insights

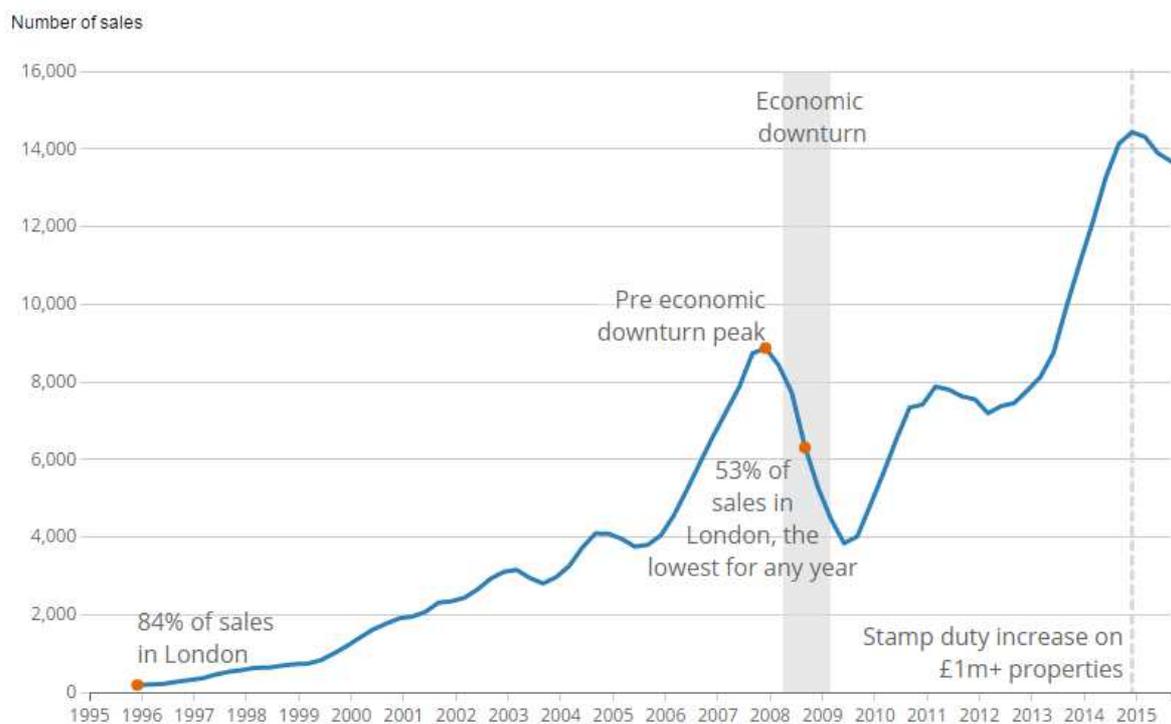
The method used to create HPSSAs means that it is flexible and can be adapted to give new cuts of data and applied to new geographies. This has allowed ONS to use HPSSAs to support policy and provide new insights.

5.1 Sales of £1M+ properties

There is policy interest in data on sales of the most expensive properties due to concerns about the over-heating of the housing market and because of the revenues raised through taxes. Figure 2 shows that sales in this price bracket have increased steadily over the last 20 years, although the trend was reversed temporarily in 2008–2009 during the period of the economic downturn.

Data for sales of £1 million properties for the year ending September 2015 showed a drop from the peak at the end of 2014. This coincided with the introduction of new stamp duty rules where tax on properties is now at least 10% of the amount paid over £925,000, up from 5% previously.

Figure 2: Residential property sales of £1 million or more, England and Wales, 1995 to 2015



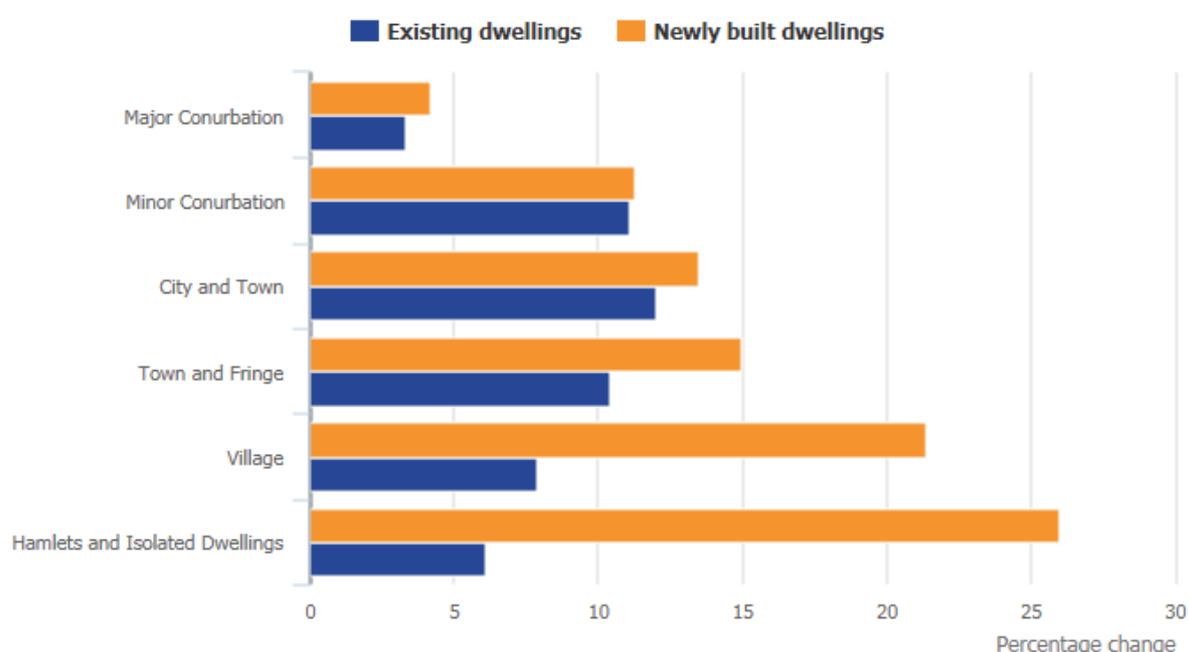
Source: HPSSA - Million pound property sales, ONS

5.2 A focus on housing in rural areas

Increasing the availability of housing in rural areas is part of a plan for boosting productivity in rural areas published by the Government last year. HPSSA data can be applied to the rural-urban classification (RUC) of Output Areas (OAs)² to give a detailed view of the rural housing market.

Figure 3 compares the changing median sale price of new and existing detached properties over time – see Figure 3. Increases in median sale price of new detached properties got larger as the categories became more rural. The increases in median sale price were smaller for existing detached properties across all categories, and reduced as the categories became more rural. The increase in median price of both new and existing detached properties over the last 5 years was smallest for Major Conurbations. The increase in the median price paid for new detached properties was largest in Hamlets and Isolated Dwellings.

Figure 3: Percentage change in median price paid for detached houses, England and Wales (year ending September 2011 to year ending September 2015)



Source: Office for National Statistics and Land Registry

² Created after the 2011 Census, RUC enables a detailed rural-urban view of OA level data. OAs are the lowest level statistical building blocks in England and Wales, with a population size of approximately 300 people.

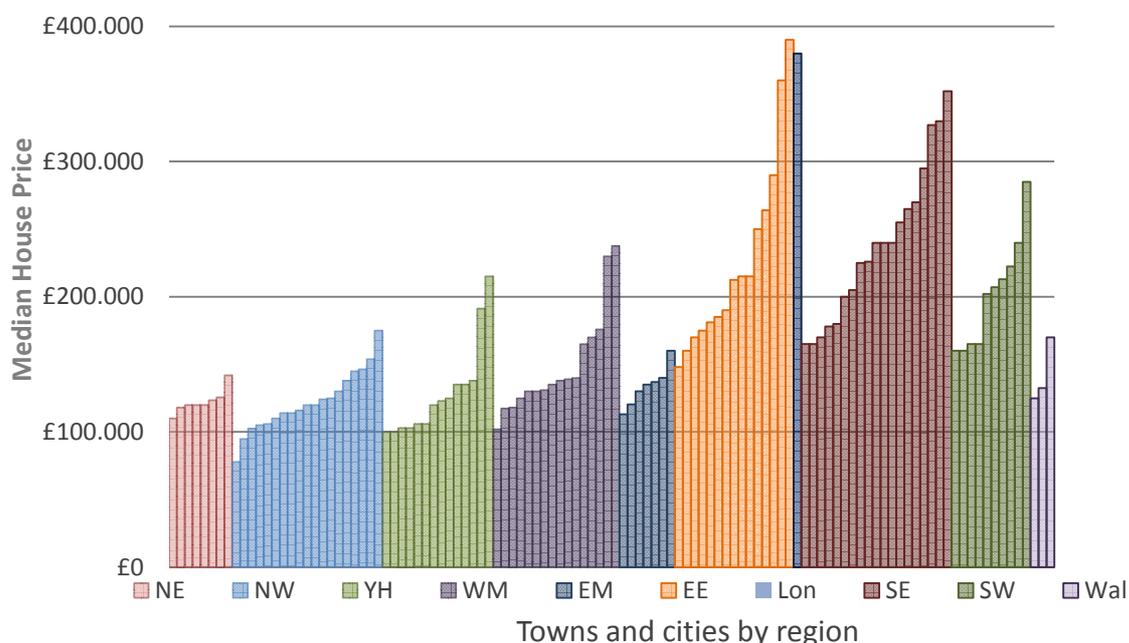
5.3 A focus on towns and cities

In March 2016 ONS released a new statistical geography to provide a detailed definition of the major towns and cities in England and Wales³. The focus was on the actual built up area of a town or city rather than its surrounding or administrative area.

Figure 4 shows median house prices in towns and cities in England and Wales. Each bar represents one town or city and the English towns and cities have been sorted by region. It is clear that median house prices in towns and cities in the south of England are generally higher than in towns and cities in Wales or the north or midlands of England. In the south of England, 29 out of 45 towns and cities had a median house price greater than £200,000 in 2015, compared with only 3 out of 64 towns and cities in the north.

There was greater variation in median house prices between towns and cities in the south of England, with a range of £242,000 between the highest and lowest, compared with a range of £159,500 between northern towns and cities' highest and lowest.

Figure 4: Median house price (all property types) by towns and cities in England and Wales, year ending June 2015

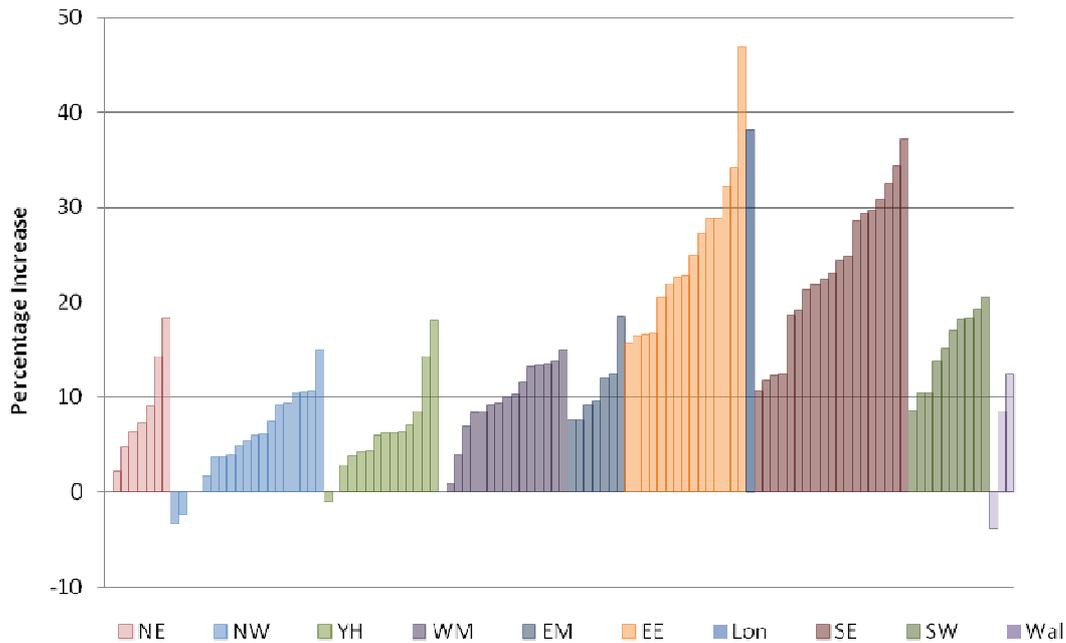


Source: Office for National Statistics and Land Registry

³ 112 towns and cities were identified, each having a resident or workday population size above 75,000 (2011 Census).

Figure 5 focuses on change in median house price, where towns and cities in the south of England have generally risen by more than in towns and cities in Wales and English regions in the north and Midlands.

Figure 5: Percentage increase in median house price (all property types) for towns and cities in England and Wales by region, year ending June 2010 to year ending June 2015



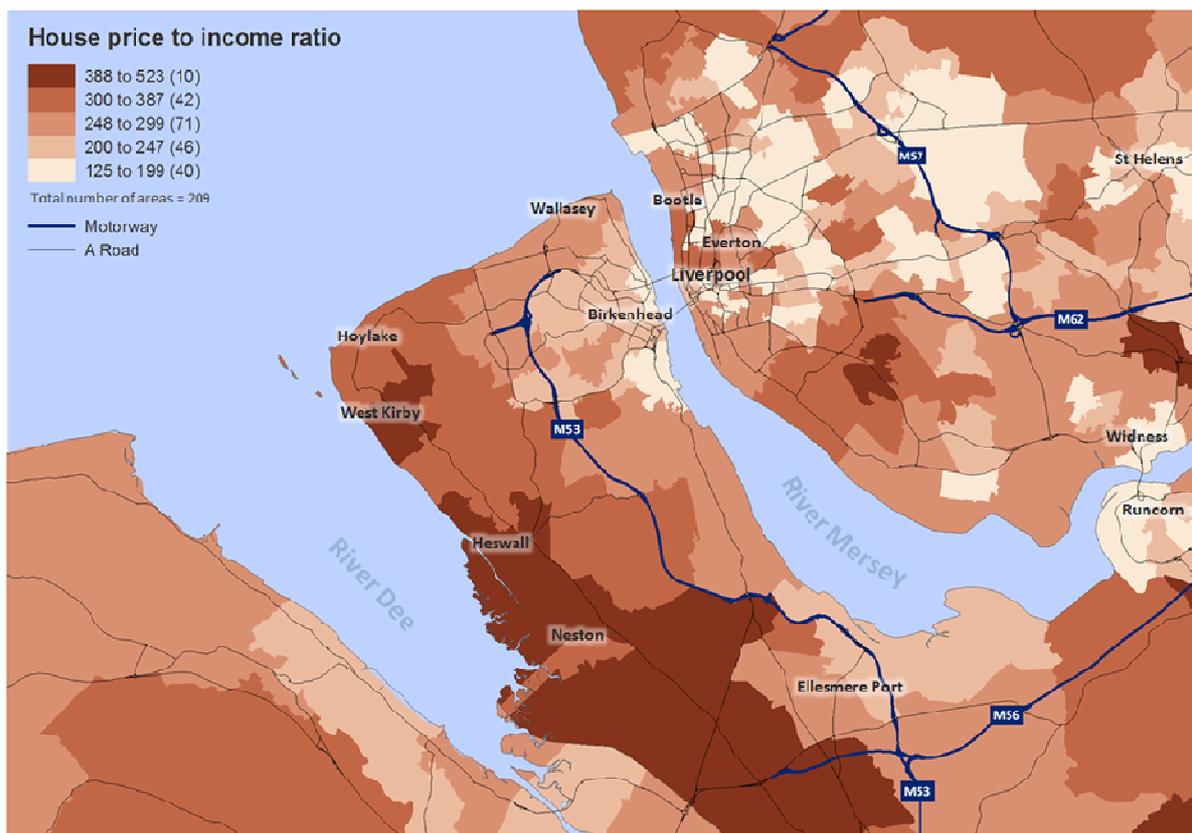
Source: Office for National Statistics and Land Registry

From 2010 to 2015, there were no towns and cities in Wales or the north or Midlands regions of England for which the median house price increased by more than 20%. For the majority of the towns and cities, median house prices increased by 10% or less, and prices decreased in four towns and cities. This contrasts with the trend in the south where 26 out of 45 towns and cities had median house price growth of more than 20% over the period. The smallest increase in median house price in the south of England was 8.6%, while the largest increase was 46.9% (Cambridge).

5.4 Housing affordability

The affordability of housing is an increasing area of policy focus. The HPSSAs can be linked with the ONS's Small Area Income Estimates to provide a measure of housing affordability at a local level. Areas with low house price to income ratios are relatively more affordable than areas with high ratios. At the MSOA level it is possible to identify significant local differences in levels of housing affordability – see Map 2 for the city of Liverpool and its surrounding area in 2014.

Map 2: Ratio of median house price (2014) to mean net weekly household income (2011/12) by MSOA - Liverpool, The Wirral and surrounding areas



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Section 6 - Summary

This paper has provided an overview of how ONS has used administrative data to create the HPSSAs. LR data are well suited for the production of statistics – publicly and freely available, with comprehensive coverage and a long time series – but, as with all administrative data sources, there are some limitations and risks. However, it is clear that the benefits of using these data outweigh the limitations. The HPSSAs data provide a unique insight into the changing housing market at a local level in England and Wales, while additional analyses clearly demonstrate how the product can be used to focus on specific areas of interest.