

# National Statistician's Review of House Price Statistics

December 2010

### **The National Statistician**

The National Statistician – a statutory office holder – is also the Chief Executive of the UK Statistics Authority Board and the Board's principal adviser on:

- the quality of official statistics
- good practice in relation to official statistics, and
- the comprehensiveness of official statistics

She is also the Head of the Government Statistical Service (GSS) which is a network of professional statisticians and their staff operating both within the Office for National Statistics and across more than 30 other government departments and agencies.

### **Enquiries**

For enquiries about the content of this report please contact Emily Carless on:

Tel: 01633 455717

Email: [nsoffice.enquiries@statistics.gov.uk](mailto:nsoffice.enquiries@statistics.gov.uk)

### **Media contact:**

Tel Media Relations Office: 0845 6041858

Emergency on-call 07867 906553

E-mail [press.office@ons.gsi.gov.uk](mailto:press.office@ons.gsi.gov.uk)

© Crown Copyright 2010

The text in this document may be reproduced free of charge in any format or medium providing it is reproduced accurately and not used in a misleading context. The material must be acknowledged as Crown copyright and the title of the document specified.

Where we have identified any third party copyright material you will need to obtain permission from the copyright holders concerned.

For any other use of this material please write to Office of Public Sector Information, Information Policy Team, Kew, Richmond, Surrey TW9 4DU or email: [licensing@opsi.gov.uk](mailto:licensing@opsi.gov.uk)

# Contents

<b>Foreword</b>	<b>4</b>
<b>1. Summary</b>	<b>5</b>
<b>2. Introduction</b>	<b>7</b>
<b>3. Users and uses of house price statistics</b>	<b>7</b>
<b>4. Challenges in measuring house prices</b>	<b>9</b>
<b>5. Current house price statistics</b>	<b>11</b>
<b>6. What should a definitive official house price index seek to measure?</b>	<b>16</b>
<b>7. Framework for a definitive official house price measure</b>	<b>17</b>
<b>8. How well do current statistics meet user need?</b>	<b>23</b>
<b>9. Recommendations</b>	<b>25</b>
<b>10. References</b>	<b>26</b>
<b>Annexes</b>	<b>27</b>

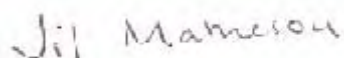
## Foreword

Jil Matheson,  
National Statistician

In conducting this review, I am mindful of the general level of interest in and importance placed on changes in the value of our houses by all sections of society. I am also aware of the confusion that can arise from having a number of measures which, whilst different, can appear contradictory. It is for both of these reasons that the time is right to review official house price statistics and wider housing market statistics generally.

I am grateful to all those who have contributed to this review, both current official and non-official producers, and particularly to those users who have taken the time to share their views. I would also like to thank members of the Steering Group for their contribution in ensuring the smooth running of this review. A list of steering group members can be found in Annex A.

I would welcome comments on the forward strategy for house price statistics as set out in this report and will look to reflect those comments in my report on wider housing market statistics that I will publish by Easter 2011.



December 2010

## 1. Summary

- 1.1. Statistics on house prices are of key importance in the UK and have many different uses. Users range from private individuals choosing whether to buy or sell a house and surveyors valuing a property for a mortgage company, to analysts interested in the wider economy and government policy makers assessing the success of housing policies. Furthermore, different users have different needs; whilst an economist may be more interested in the national picture, a private individual may be more interested in house prices in their local area.
- 1.2. Differing needs for house price information over time has led to a suite of different measures. These different measures can lead to different and sometimes contradictory messages being drawn depending on which source is used. In turn, this can make it more difficult for users to make clear decisions based on the available information. Concerns around this have been expressed to the UK Statistics Authority.
- 1.3. The National Statistician in her role as the principal advisor on statistics to government and the independent UK Statistics Authority wishes to ensure that the housing market statistics produced from official sources are as good as they can be to support decision making in the UK. As stated in the Eurostat Draft Handbook on Residential Property Price Indices (Eurostat, 2010) it will “not be possible to construct a “perfect” RPPI [Residential Property Price Index]; it will only be possible to construct an approximation to the theoretically ideal index for each purpose.” Therefore, this review is not aiming to identify which source provides the perfect house price index but to ensure official house price statistics meet user needs as well as they can and that the relevant information is available for users to inform their use.
- 1.4. The review is taking place in two stages. The first stage examines the current house price statistics produced by the Department for Communities and Local Government (DCLG) and Land Registry and identifies improvements that can be made to the official house price statistics to better meet user needs. The second stage of the review will widen the scope to explore user needs for indicators of the housing market more generally. Examples of wider housing market indicators include transaction volumes, repossessions and private rents.
- 1.5. This report makes recommendations on the first stage of the review. These recommendations are based on an analysis of current practice, findings from a user consultation questionnaire, which explored the uses made of house price statistics and users’ experiences of them, conversations with key users of house price statistics<sup>1</sup> and previous recommendations made in relation to official house price statistics.
- 1.6. User feedback demonstrates a clear need for official statistics on the value of and changes in house prices. The review concludes that neither of the current official house price measures meets all key user needs for a definitive official house price index. Each have a strong user base and key strengths but further work is needed to establish whether and how a single official index better meeting all the required characteristics could be produced. In the short term, greater efforts are necessary to increase the explanation of current methods and comparisons between official measures and other non-official sources.

---

<sup>1</sup> This included an event with representatives of the key user groups to discuss the emerging findings. A list of organisations invited to the event can be found in **Annex B**.

1.7. In summary, the recommendations of the National Statistician's review of official house price statistics are:

Recommendation 1:

1.8. A **single definitive house price index and accompanying statistics should be produced by the official statistics producer community**. This index should:

- i) Represent the prevailing market price of residential property at completion of sale.
- ii) Measure both house prices and house price inflation based on the price paid for transacted properties.
- iii) Have a UK coverage.
- iv) Generate estimates (at least) monthly.
- v) Be timely with minimal revisions.
- vi) Be available as a seasonally adjusted and an unadjusted series.
- vii) Provide a consistent index series to enable trend analysis.
- viii) Provide robust sub-regional estimates and estimates for user defined areas.
- ix) Provide comparable estimates for sub-sets of transactions or properties.

1.9. In addition to these technical specifications the index and accompanying statistics should also:

- Be accompanied by a clear explanation of the methods used to construct the statistics and indicators of the quality of those measures
- Provide a commentary of key findings and relationship to other house price statistics and housing market indicators, including those produced from non-official sources
- Be easy to find, view and download
- Seek National Statistic status

1.10. The rationale behind each of these criteria is explained more fully in section 7 of this report. An analysis of the extent to which existing indices meet this user driven framework is contained in section 8.

Recommendation 2:

1.11. In order to provide greater clarity and understanding of the broad range of house price information, and the resultant key messages, **a regular official statistics report should be developed presenting and analysing official house price measures and their relationship to other non-official sources and wider housing market indicators**. Both the values of the indices themselves and the underlying methods should be compared.

Next Steps

1.12. The Department of Communities and Local Government and Land Registry have been asked to report back to the National Statistician on steps they could take to better meet the user requirements specified and on the feasibility of producing a joint statistical report containing the single definitive house price index and other house price indicators.

1.13. The National Statistician will then seek to publish a statement before Easter 2011 on the extent to which the user requirements for house price statistics can be met by official statistics producers. This will accompany a report of progress with the development of a single official statistics report on the housing market and a report on the second stage of the review on wider housing market statistics.

## 2. Introduction

- 2.1. Official statistics on house prices are published by both the Department for Communities and Local Government (DCLG) and Land Registry (and an equivalent in Scotland from Registers of Scotland) on a monthly basis. Each uses different underlying data and methods for compiling these statistics and has a different geographic coverage. As a result, estimates vary between them<sup>2</sup>.
- 2.2. In addition, other statistics on house prices are produced by a range of private sector bodies using other sources and methods. These add to the range of information on trends in the housing market and to the issue of there being no single, definitive estimate of average house prices or changes in them.
- 2.3. In response the National Statistician is conducting this review of official housing market statistics with both producer and user involvement.
- 2.4. The review is taking place in two stages. The first stage examines the current house price statistics produced by DCLG and Land Registry and identifies improvements that can be made to the official house price statistics to better meet user needs. The second stage of the review will widen the scope to explore user needs for indicators of the housing market more generally. Examples of wider housing market indicators include transaction volumes, repossession and private rents.
- 2.5. This report focuses on stage 1 of the review, i.e. statistics on house prices and their movements. It describes:
  - users and uses of house price statistics
  - the challenges with measuring house prices
  - current house price statistics, from both official and non-official sources
  - a framework for the required characteristics of a definitive, official house price measure, with evidence for why each of these characteristics is necessary
  - recommendations for improving how official house price statistics meet user needs

## 3. Users and uses of house price statistics

- 3.1. House price statistics are used by a broad range of users for many different purposes. Users vary from government policy makers and analysts in financial corporations to estate agents, surveyors and members of the general public.

### Evidence from the National Statistician's online consultation

- 3.2. During August 2010 the National Statistician ran an online consultation of users of house price statistics. The consultation was sent out to known users of official house price statistics directly and placed on the Housing Statistics Network<sup>3</sup> website. Questions asked respondents to indicate what user group they feel they represent, what they use house price statistics for, what measures they use and satisfaction with the current official statistics. The consultation was qualitative in nature and respondents were self-selecting. The findings provide an indication of users' views but no conclusions should be drawn about the relative preference of users for any particular index. A list of questions asked in the user consultation can be found in **Annex D**.

---

<sup>2</sup> A table of the key characteristics of each of the official and non-official sources of house price statistics can be found in **Annex C**.

<sup>3</sup> <http://www.housingstatisticsnetwork.co.uk/>

- 3.3. The key results from the survey were:
- The main user groups represented in responses were Businesses, Central Government, Financial Institutions and Local Government.
  - The main stated uses of house price statistics included analysing market trends, housing market impact assessments, further research on the housing market and valuing property.
  - Amongst respondents there was a high usage of DCLG and Land Registry house price statistics but also a high usage of the indices produced by the mortgage lenders, Halifax<sup>4</sup> and Nationwide.
  - In addition to the need for national level estimates, respondents were commonly most interested in house price statistics broken down by region, sub-region and property type.
  - The survey demonstrated a strong need from users for both average house prices and changes in house prices, via an index.
  - There is also a need for distributions of house prices (for example lowest 10% of prices), individual house prices and seasonally adjusted house prices. That is house prices with the seasonal pattern that occurs over a year removed.
- 3.4. More detailed analysis of the user consultation feedback can be found in **Annex E**.

#### Local area housing market assessments

- 3.5. In order to meet the requirements set out for them Local Authorities are expected to have a good understanding of the local housing market. This is achieved by carrying out a Strategic Housing Market Assessment. The costs of buying or renting and local affordability are two aspects of the assessment which require house price information to be available. More details of Housing Impact Assessments can be found in DCLG guidance (DCLG, 2007).

#### Measure of inflation and the European perspective

- 3.6. Housing costs have been included in the Retail Price Index, RPI, in the UK since 1975. The costs are included indirectly through estimates of mortgage interest payments and depreciation costs, with house prices feeding through into each of these components.
- 3.7. The Consumer Prices Index, CPI, plays a key role in determining the UK's monetary policy and in setting interest rates. The Government recently announced that the CPI will replace the RPI as the measure used to up-rate such things as pensions. In response to user demand, the Consumer Prices Advisory Committee has placed high priority on the inclusion of owner occupiers' housing costs (OOH) in the CPI. The Office for National Statistics, ONS, is developing measures of OOH costs for potential inclusion into an expanded CPI using two approaches. One of these, the net acquisitions approach, requires a house price index as an input.
- 3.8. While house price information is important for policy monitoring and economic analysis within the UK, including at Local Area level, it also feeds into analysis at a European level. For example, there is currently a European regulation in draft which will require EU members to produce an OOH index using the net acquisitions approach (and hence requiring a house price index as an input) from 2012 using an agreed methodology to a set time scale. In the longer term, it is likely that this index will be incorporated into the European Harmonised Index of Consumer Prices.

---

<sup>4</sup> Halifax is part of Lloyds Banking Group



## Previous reviews of official house price indices

- 3.9. There have been several previous reports looking at the requirements for an official house price index. Most notably a working group was set up in 2002 by ONS to investigate the feasibility of producing an improved official house price index. An economic trends article (Fenwick and Duff, 2002) was published summarising the findings. The working group noted that “past differences in trend between the existing indices have created problems of interpretation”. Feedback from major users to the working group indicated the need for “a monthly index that is reliable, published with little time lag and with the minimum of revision”.
- 3.10. Some of the recommendations of that review have been implemented in the DCLG house price index. For example, the sample size of the survey was increased and seasonal adjustment has been applied. However, some issues raised in that review remain outstanding.
- 3.11. Since that review additional indices have been published which add to the available information on the housing market. However a single index that meets the requirements set out in the 2002 review report still does not exist.

“The study concluded that an index should have as a minimum the following characteristics: monthly; timely with no systematic bias and with minimal revision; UK coverage with sub-indices at least down to region; mix-adjusted to allow for changes in the characteristics of the houses sold each month.”  
~ Economic Trends, 2002

## **4. Challenges in measuring house prices**

- 4.1. A basic definition of an index is a measure of the same characteristic, such as price or quantity, expressed relative to a given base period. This means that a house price index needs to measure the change in prices of residential property with the same characteristics relative to a given base period. This gives rise to several issues.

### Housing stock

- 4.2. It is not practically possible to measure the prices of every house in the UK at a set time nor is it possible to re-measure such prices to a given frequency. This necessitates the use of a sample based approach, measuring prices paid for houses during a time period and taking this as a proxy for all houses.

### Transaction bias

- 4.3. The use of price paid for properties during a time period gives rise to issues of transaction bias. This is where the properties that are frequently transacted differ in their characteristics from those that are not transacted. As a result of not being able to measure the prices of all the housing stock statistics on changes in house prices reflect the transacted properties rather than all properties. Analysis has been done into the impact on estimates of not adjusting for this bias and it is recognised as a complex problem.

### Maintaining a constant mix

- 4.4. Differences between houses that have sold and those that have not in any two time periods can cause a change in the estimated house prices that is not due to an underlying change in house prices. This can be partly adjusted for using mix-adjustment. This looks at the mix of characteristics of the properties that have sold in the two time

periods and models the differences to determine the change in prices if the mix of characteristics had remained constant. A drawback to this method is that it relies on having access to information on the characteristics of the properties that have been sold, and those that have not, and assumes that the variation in house price is captured by those characteristics.

- 4.5. An alternative approach is to look at the price movements in properties that have sold more than once since the data was first collected. The characteristics of the property are then effectively embedded within the price of the property in the period when it first sold and it is assumed that these characteristics do not change. Between short time periods this method removes some of the variation in house prices but requires each transacted property to have sold twice. In addition, an allowance has to be made for property enhancement or deterioration between the times when it has sold.

#### Liquidity/time lags in the process of selling a house

- 4.6. The time taken to sell a house varies between houses. The time taken can depend on a variety of factors and these can have an influence on the price. For example, a seller can speed up the sale of a house by placing it on the market at a lower price than a similar house. The difference in price can therefore be due to the speed of sale required rather than the underlying value of the house. In addition, the time between an offer being accepted and the sale completing can vary. Ideally, therefore, only houses that took the same length of time to sell would be compared. However sale times vary throughout the market cycle.

#### Characteristics of the housing market

- 4.7. The housing market differs from the market for other goods and services in that there is often a speculative element to the purchase of residential property. Owning a house represents one of the biggest investments made by households and the shelter provided by the house is only one element of the service received from it. Indeed in some cases, for example, buy-to-let, the house is not used for shelter by the purchaser at all. People may buy a house expecting it to rise in price in order to make a capital gain or decide not to buy in order to wait for the price to decrease further. Therefore supply and demand are not driven solely by the use of the property and this has an impact on price fluctuations.
- 4.8. Furthermore, the housing market in the UK is not a single market. House prices can rise in one area whilst they fall in another. These variations can occur across geography but also house types. Therefore any aggregate move in house prices, or indeed house price itself, will mask variation at lower levels.

#### No 'average' house

- 4.9. Each house in the UK is different if only due to no two houses being able to occupy exactly the same location. As stated above there is also not a single housing market in the UK. Therefore in constructing a single number for house prices at a particular time, the aim is to give an indication of the 'central tendency' of house prices. Differences in assumptions made in doing this can result in large differences in the 'average' house price.

## 5. Current house price statistics

5.1. Whilst this review focuses on official measures of house prices and changes in them, it is useful to place these measures in context with other measures that are available. The most well known sources which cover the UK in 2010 include:

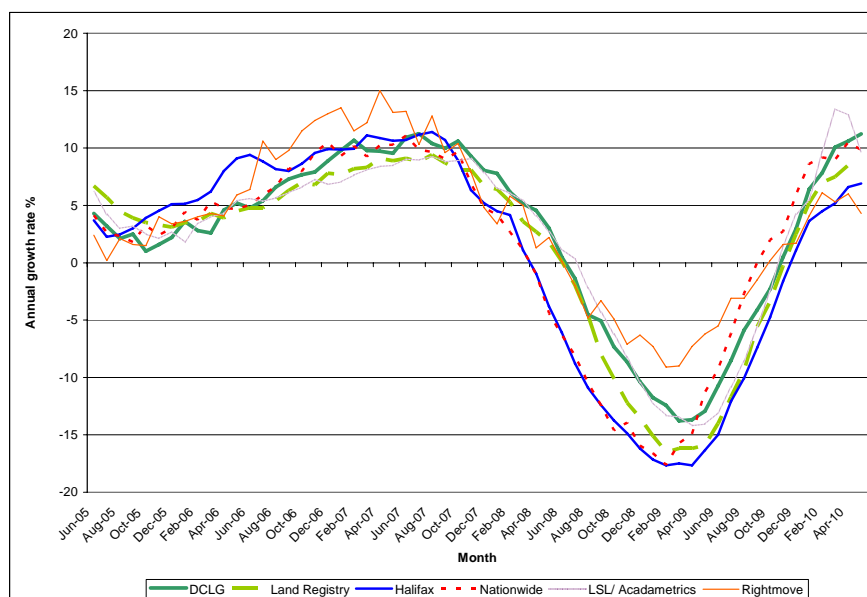
- the two official measures, provided by the Department of Communities and Local Government and by Land Registry (and an equivalent in Scotland from Registers of Scotland), based on completions data.
- measures by each of Halifax and Nationwide, based on their own mortgage approvals.
- a survey looking at trends in the market which is carried out by the Royal Institution of Chartered Surveyors (RICS)<sup>5</sup>.
- an index based on the asking prices of property included on Rightmove.co.uk
- the Hometrack survey<sup>5</sup> which is based on answers to 11 questions by estate agents and surveyors across England and Wales.
- the LSL/Acadametrics index which uses Land Registry data to produce an index using mix-adjustment. An early 'forecasted' estimate is produced by combining information from other indices.

5.2. The University of Ulster also produces a House Price Index in partnership with the Bank of Ireland covering Northern Ireland.

5.3. **Annex C** shows a comparison of various aspects of the current house price statistics.

5.4. **Figure 5.1** shows the growth rates in house price indices between June 2005 and May 2010 for each of these index measures. The RICS and Hometrack surveys are not included in the chart as they do not provide growth rates in actual house prices.

**Figure 5.1: Annual growth rates in house price indices, June 2005 to May 2010, percentages**



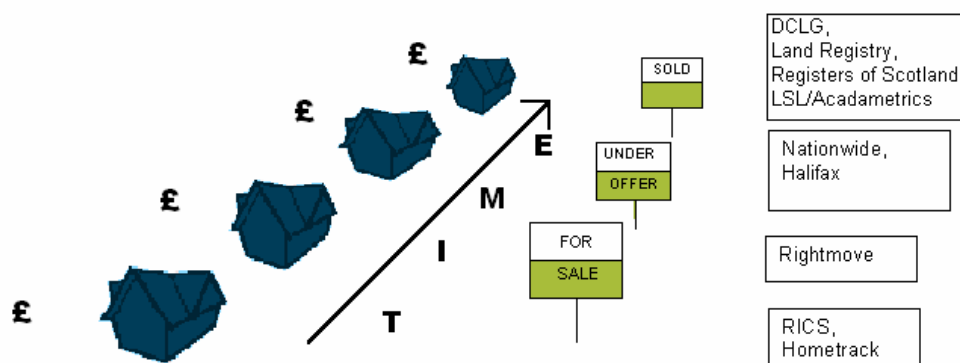
<sup>5</sup> The RICS and Hometrack house price 'indices' are based on opinion surveys rather than actual transactions. They contain questions wider than house prices, such as the proportion of the asking price that is achieved. They are included here as they are widely used by users of house price statistics.

- 5.5. Figure 5.1 shows that the different sources follow broadly similar trends but the month by month movements differ. This can produce an incoherent picture for users, particularly when some indices are reporting growth in prices and others are reporting falls. For example, the month in which the largest fall in prices occurred over the period shown differs between the indices.
- 5.6. Differences in the indices arise from a variety of factors. A key cause of the differences, however, are differences in the conceptual basis of the measures, i.e.:
- When in the process you measure the price
  - What it is you are measuring the price of
  - What properties the measure covers.

When in the process you measure the price

- 5.7. The indices produced by the official producers DCLG, Land Registry and Registers of Scotland, and also the LSL/Acadametrics index use the price paid at completion of the sale.
- 5.8. The Halifax and Nationwide indices are based on valuations for mortgage approvals. That is the offer price for the property once the mortgage company has agreed to finance the mortgage. The dataset for each is the valuations for mortgages with their own companies.
- 5.9. The Rightmove house price index is based on the asking price of houses advertised via their website. These prices are therefore based at the start of the selling process and include houses that do not then sell.
- 5.10. The house price index produced by the Royal Institute of Chartered Surveyors (RICS) asks its surveyors to give an indication of the direction that house prices are moving in. Hometrack collects estimates from estate agents and surveyors of the potential selling price of 4 standard home types in each postcode sector. These two sources do not base their estimates on actual houses on the market at the time.
- 5.11. **Figure 5.2** shows this pictorially

**Figure 5.2: Processes measured by house price sources**



## What it is you are measuring the price of

- 5.12. Most house price measures seek to provide a single 'average' house price as an indicator of houses prices in the country. Whilst in reality there is no such thing as an average house, there is a user need for a single number. An 'average' house price is needed, for example, for calculations of affordability, that is the average house price in relation to earnings, and also to aid the understanding of the 'lay' user by linking the statistics to a house. In practice, this single number is produced either by weighting together house prices for different types of house, by creating a 'standardised house' that can represent the impact of changes in house prices on all other types of house, or by using an average of the house prices contained in the dataset. The different approaches also reflect differences in the approach to adjusting for the mix (types) of properties sold in a period. The relationship between the single price and estimates of changes in house prices also varies.
- 5.13. Nationwide and Halifax both use the information available to them to estimate the value of each characteristic of a house. Characteristics used include number of bedrooms, local authority and type of house. They then each apply this to a 'standardised house' made of the characteristics of a typical house for which they provided a mortgage. Growth rates are then based on growth rates in the standardised house price.
- 5.14. DCLG use the available information to estimate the value of each characteristic of a house. These are then used to produce estimated 'prices' for around 1,000 combinations of characteristics. An example of a combination could be a new build, one bedroom flat in London bought by a first time buyer. Each of these combinations is then weighted together by the number of transactions of properties with those characteristics during the previous three years. Growth rates are then based on growth rates in this weighted average house price.
- 5.15. Land Registry calculated a geometric<sup>6</sup> mean of house prices in April 2000. A growth rate for the latest period is taken directly from the data using the growth rates in prices of houses which have sold at least twice since 1995. These growth rates are applied to the average house price from 2000 to get a house price for the latest period.
- 5.16. Registers of Scotland calculate an arithmetic<sup>7</sup> mean of house prices in the dataset. Growth rates are based on changes in that average.
- 5.17. The Hometrack survey defines 4 standard house types and collects at least two estimates of the potential selling price of each of those houses from every postcode district in the country. These opinion based estimates are then weighted together using census housing stock numbers.
- 5.18. LSL/ Acadametrics produce a weighted average house price using the average house price for each type of house in each county. The weights are based on historical volumes of sales. Growth rates are then based on growth rates in this weighted average house price.

---

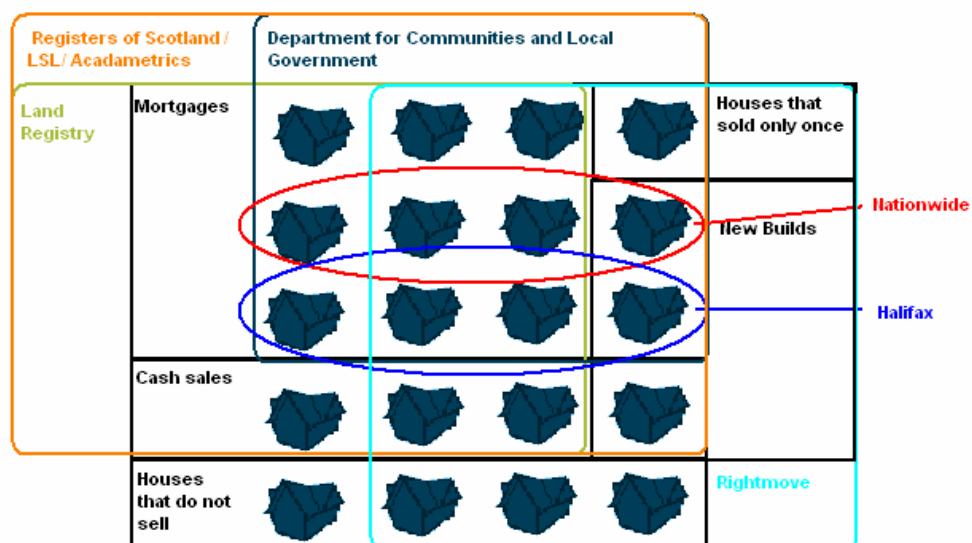
<sup>6</sup> The geometric mean is a type of average that is calculated by multiplying the numbers together and then taking the nth root (where n is a count of the numbers being multiplied). A geometric mean is generally recommended where the values relate to growth.

<sup>7</sup> The arithmetic mean is the mean that is generally thought of as the average. It is the sum of a set of values divided by the number of values.

### What properties the measure covers

- 5.19. The coverage of types of transactions and properties varies between the different data sources. This is due either to the underlying data source or the methodology applied. This coverage error affects the accuracy where the properties covered differ from the general population of houses or where house price movements are different between those houses covered and those that are not. This is sometimes called bias.
- 5.20. The Rightmove index includes all property types that are advertised on its website. However, it includes houses that do not subsequently sell and reports only asking prices. If house price movements are different between the non-selling and selling houses then this will affect the accuracy of estimates of house prices and changes in them.
- 5.21. Nationwide, Halifax and DCLG all cover property transactions that are bought with a mortgage. Therefore cash sales are explicitly not included. All house types are included, including new build houses. In the case of each of Nationwide and Halifax the property transactions relate to mortgage valuations undertaken by their companies.
- 5.22. Land Registry and Registers of Scotland include both mortgage and cash sales. By virtue of its methodology the Land Registry index does not include houses that have been transacted only once since their database was constructed. This means that new build houses are excluded. In addition, other types of house that are seldom transacted are less prevalent in the dataset than properties that are frequently transacted. Houses that are transacted frequently may have different characteristics from those that are seldom transacted. Note that Land Registry covers England and Wales, Registers of Scotland covers Scotland and that there is no equivalent data for Northern Ireland.
- 5.23. The LSL/Acadametrics has the most complete coverage of property and transaction types for England and Wales as it uses all transactions in the Land Registry price paid dataset. The Registers of Scotland index also uses all transactions in their dataset.
- 5.24. **Figure 5.3** illustrates each method's coverage of property types and transactions.

**Figure 5.3: Coverage of house price sources**



Note: Subsets of houses in the above diagram are not to scale

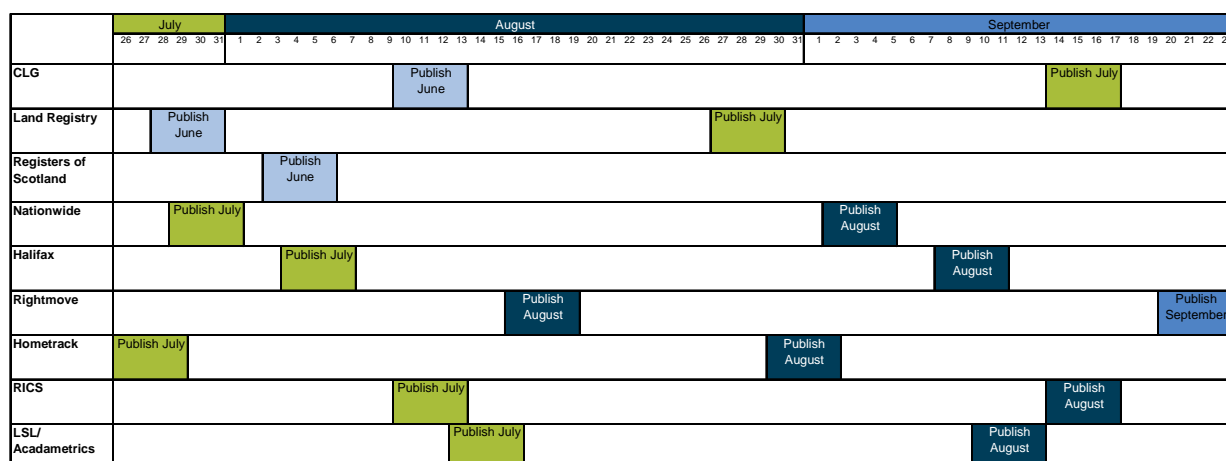
5.25. The geographical coverage of each of the indices also varies with some indices being UK wide and some England and Wales or Scotland only. The coverage depends on the coverage of the underlying dataset. The Halifax, Nationwide, Rightmove, and DCLG indices are UK based. The Land Registry index and LSL/Acadametrics index, as it is based on Land Registry data, and RICS and Hometrack surveys are England and Wales only. The Registers of Scotland index covers Scotland only.

### Time lags to publication

5.26. The above differences, i.e. in the time in the process on which the measures are based, the coverage of property types and other aspects relating to the underlying data, leads to variations in the publication date of estimates relating to each period. By using data for houses earlier in the house selling process, or that held by the organisations themselves, estimates for a particular period can be released closer to the time period to which they refer. In contrast DCLG figures are based on returns to the Regulated Mortgage Survey from the Council of Mortgage Lenders and Land Registry and Registers of Scotland data are based on registrations of sales. Both these sources have longer time lags.

5.27. **Figure 5.4** shows the relative publication dates of each series over a two month period. Release dates for statistics for different periods are shown to demonstrate where a publication for one month occurs after the publication for the next month from a different organisation.

**Figure 5.4: Time lags to publication**



Note: The LSL/Acadametrics index using results from the range of indices to 'forecast' the house price index for the latest month.

5.28. The different house price measures have arisen due to users requiring the statistics to meet differing needs. For example, those analysing housing market and wider economy trends will place a priority on statistics that are available quickly. For the purposes of monitoring policy or valuing individual properties the priority may be in having a greater coverage of properties at the actual price paid.



## 6. What should a definitive official house price index seek to measure?

- 6.1. The previous sections on user needs, the challenges of measuring house price statistics and current house price statistics that are available, support consideration of what a definitive house price index and estimate of house price level should measure. As noted in many of the reports, including the draft European handbook, there are different ways to construct a house price index each with a different conceptual basis. Where different measures exist in order to measure different things, and the differences can be reconciled, then the overall effect is to increase knowledge about the housing market. For example, the Rightmove index is clear that it is an index of asking prices. If these asking prices can be clearly linked to final sale prices then indices of both asking prices and final sale prices and indeed statistics on the relationship between them are of benefit. Both the current official indices are conceptually measuring the same thing, i.e. sale prices and the changes in them, but take a different approach and offer different levels of detail.
- 6.2. For many uses the underlying concept of interest is the value of the housing stock. A previous section discusses the challenges in measuring this. The conceptual difference between measuring the value of the entire housing stock and changes in it, and the measurement of house price inflation as experienced by house buyers means that no one index would meet the needs of all users. A decision therefore needs to be made over what concept an official house price index seeks to measure. This does not prevent technical users from adjusting that index to meet particular needs in combination with data from other sources. The United Nations System of National Accounts guidance (UN, 2007) on valuing fixed assets such as houses states that they “should be valued at prices prevailing in the market for assets in the same condition as regards technical specifications and age”.
- 6.3. This UN guidance, data limitations, and the need for regular timely statistics, led to the concept for a definitive official house price index being transacted properties as a proxy for house price inflation. The prices of the properties transacted should be adjusted for changes in the characteristics of the properties for the purposes of measuring change in house prices.
- 6.4. The next section outlines the characteristics that user feedback suggests a definitive house price index should possess.

According to guidance given on balance sheets in the System of national Accounts, fixed assets such as houses “should be valued at the prices prevailing in the market for assets in the same condition as regards technical specifications and age”.



## 7. Framework for a definitive official house price measure

7.1. The need for official statistics on house prices is supported by the high usage made of the measures by all the user groups in the consultation, including in the formation and monitoring of government policy, and their use in the calculation of national measures of economic inflation.

7.2. From our analysis of user needs and previous reviews a framework of key criteria for a definitive official house price measure is proposed. These measures consist of both a house price index (measuring changes in house prices) and an estimate of the 'average' house price. The framework characteristics are summarised and then explained in more detail below.

"It would be very helpful to have one source of definitive statistics which could be relied on by professionals and the home buying and selling public."

### Summary of key criteria for a definitive official house price measure

7.3. The criteria which should be met by a definitive official house price measure are:

- i) Represent the prevailing market price of residential property at completion of sale.
- ii) Measure both house prices and house price inflation based on the price paid for transacted properties.
- iii) Have a UK coverage.
- iv) Generate estimates (at least) monthly.
- v) Be timely with minimal revisions.
- vi) Be available as a seasonally adjusted and an unadjusted series.
- vii) Provide a consistent index series to enable trend analysis.
- viii) Provide robust sub-regional estimates and estimates for user defined areas.
- ix) Provide comparable estimates for sub-sets of transactions or properties.

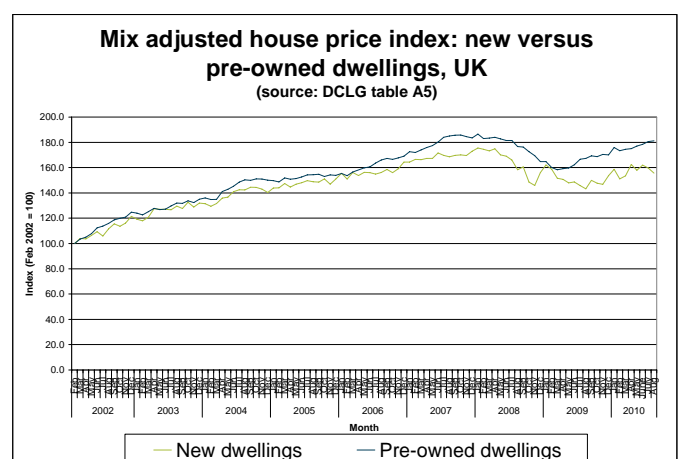
7.4. In addition to these technical specifications the index and accompanying statistics should also:

- Be accompanied by a clear explanation of the methods used to construct the statistics and indicators of the quality of those measures.
- Provide a commentary of key findings and relationships to other house price statistics and housing market indicators, including those produced from non-official sources.
- Be easy to find, view and download.
- Seek National Statistic status.

### i) Represent the prevailing market price of residential property at completion of sale

7.5. Users require an index to represent all relevant property transactions to enable its use as an indicator of the housing market or general economy or in valuing property that will be sold on the open market.

7.6. If some types of property or transaction are not included and house prices of these move differently to other types then the index will not reflect all transactions.



This is known as coverage error. Coverage error can be minimised by ensuring that the index is representative of all sales. Where this is not possible then the impact of the bias should be estimated, adjusted for in the index, and explained. For example, if the house prices of new and existing properties move differently and new build properties are excluded from the index then the overall index will not be representative of all sales.

- 7.7. Furthermore, the inclusion of some types of sales is not desirable. For example; non-market sales, those not subject to general market conditions or those sold at a discount, may not represent house sales generally. Therefore only sales that are representative of the prevailing market price should be included.
- 7.8. Other sources of bias arise as a result of the method used to construct the house price statistics. For example, where house prices are modelled using the characteristics of each house, bias can arise if the model is not correctly specified and does not adequately reflect the true drivers of house prices. An official house price should aim to minimise these sources of error.

ii) Measure both house prices and house price inflation based on the price paid for transacted properties

- 7.9. The user consultation demonstrated a need for measures of both house price inflation and for an indication of the level of house prices themselves.

- 7.10. Users who are interested in assessing the health of the housing market or the economy as a whole are more likely to require estimates of changes in house prices. These measures need to reflect changes in house price inflation rather than the mix of houses sold. For example, if lots of large detached houses in an expensive local authority are sold in one period and a larger proportion of small flats in a cheaper local authority are sold in the next period then, without adjustment, the index may go down due to the types of property sold rather than actual price change. In order to compare the movements in prices over time this variation in the mix of houses transacted needs to be compensated for.

“It is necessary to control for variations in the amounts of these price determining characteristics so that a *constant quality price index* can be constructed.”  
~ Eurostat handbook

- 7.11. Those interested in values of properties or aspects of affordability will be more interested in an indication of the ‘average’ house price. It should, however, be recognised that, whilst there is a user need, there is no such thing as an ‘average’ house. All houses are different by virtue of their characteristics but also their location. A definitive house price measure should state clearly the assumptions made in constructing an ‘average’ house price and the reasons for them.

- 7.12. The uses outlined in the section above show a need for statistics which are based on the price actually paid for a property. For those people valuing property, whether for the purposes of agreeing a loan, making an investment decision or assessing affordability as part of a housing market assessment, it is the price that is paid that is important. There may be small differences between the price at mortgage completion, at registration of the property or that reported for the purposes of paying stamp duty land tax. Where these differences exist, their impact on the index should be assessed and explained.

iii) Have a UK coverage

7.13. For uses such as inclusion in the RPI or CPI, monitoring macro-economic policy and assessing the housing market as a whole an official index needs to be available for the whole of the UK.

“The index should be opened up to include all of the UK as well.”

7.14. Specific comments were made in response to the user consultation questionnaire around the Land Registry only including England and Wales and this not being suitable for the users’ needs.

“Only applies to England and Wales and so cannot be used.”

7.15. Similar data to that held by Land Registry is held by the Registers of Scotland and is used separately for the production of a house price index for Scotland. There is also research ongoing to produce a new index for Northern Ireland based on returns to HM Revenue and Customs for the purposes of Stamp Duty and Land Tax.

iv) Generate estimates (at least) monthly

7.16. Users want the index at least monthly in order to analyse market trends and the wider economy. It was felt that the housing market moves too quickly for a lower frequency publication and also, being monthly places it in line with other economic indicators. The underlying need is for regular updates of changes in house prices to provide a timely indicator. However, user discussion did suggest that whilst UK level estimates are required monthly, estimates for more detailed breakdowns could perhaps be produced less frequently.

7.17. The main current indices are already monthly.

v) Be timely with minimal revisions

7.18. A particular theme of comments made through the user consultation exercise was the lack of timeliness of official measures. The time lag in producing the statistics was felt to cause users to place a greater reliance on private sector indices. Over 20% of Land Registry users and over 30% of DCLG users were dissatisfied or very dissatisfied with the timeliness of the house price statistics. Some users, including the producers of CPI, have specified that they need house price statistics within a couple of weeks of the end of the month to which they refer. This speed of production may not be possible with the current methods. Where the data are not available to this timescales it may be necessary for the user themselves to use forecasting techniques in order to produce a more timely estimate and then update it when the new data becomes available.

“There is a long lag to publication and significant revision of prior month’s statistics which makes it more difficult to use”

7.19. A need for a timely indicator can lead to revisions being made to the series as more data become available. A revision can also be necessary due to the method used to produce the index, such as updating the factors used to weight different types of property or transaction together. Users are keen to minimise the number of revisions made to the back series. This is due to the need for users to feed any revisions consistently into their own systems and to revisions resulting in changes to the underlying story. A revisions policy should be produced that best meets the needs of users. Where a revision makes little difference to the values of the index then making revisions less frequently may be of benefit. For example, updating weights or revising the back series for new data once a year.

vi) Be available as a seasonally adjusted and an unadjusted series.

7.20. Volumes of sales and hence house prices have been shown to have a seasonal pattern. Therefore in order to compare movement in house prices between months a seasonally adjusted series is required for month on month movements. Seasonal adjustment removes seasonal patterns from data series to enable more meaningful comparisons to be made between months or quarters.

“Seasonally adjusted data, using factors which are largely unchanged pre & post credit crunch, produces data which does not reflect what actually happened.”

7.21. User comments reinforced the requirement for seasonally adjusted figures with around 35% of respondents stating that they use seasonally adjusted house price statistics. However the importance of keeping the seasonal factors (used in seasonal adjustment) up to date was also highlighted.

7.22. Supply of an unadjusted series enables users to view seasonal patterns and construct their own analyses of house prices.

vii) Provide a consistent index series to enable trend analysis

7.23. One of the main uses of house price statistics is to analyse the changes in house prices over time, both as an indicator of the health of the housing market itself but also as an indicator of the wider economy. This means that estimates need to be comparable over time for a reasonably long time series. Where changes are made to the methodology used to construct the index this may cause a discontinuity in the series. Where possible consistent time series should be constructed to enable trend analysis. For example, any series based on a revised methodology should link to the old series.

“I have previously attempted to find timely and CONSISTENT historic data... to use as a background series for forecasting, but have not been able to find the consistency we need”

viii) Provide robust sub-regional estimates and estimates for user defined areas

7.24. A definitive, official house price index needs to be able to produce robust house price statistics for small areas. The user consultation demonstrated a strong user need for local area estimates of house prices and changes in them at least down to Local Authority level. However for statistics at this level the requirement for robust data outweighs the requirement for high frequency or timely data. Users have indicated that quarterly or even annual estimates would be sufficient if this enabled robust estimates

“Although there is some detail on borough level stats, it would be nice to be able to drill down the stats by local authority.”

for small areas to be produced and breakdowns of the statistics within local areas. Users of local areas statistics compare their house price statistics with the national figures or other local area statistics. This places a requirement for the estimates for different geographic levels to be consistently produced.

7.25. Statistics down to county/unitary authority level (and boroughs in London) are available from the Land Registry house price statistics release on a monthly basis. The individual price paid dataset is also available at a cost. Statistics on house prices at very low geographic levels are also available through the Neighbourhood Statistics<sup>8</sup> website on an annual basis. Users noted the importance of this information but the very long time lags in some of the data being available.

7.26. There was also feedback that in some cases the standard administrative boundaries did not meet the requirements of housing market statistics users as they do not match housing market boundaries. This leads to requests for statistics at lower levels in order to construct the required areas.

“Another significant problem with statistics at LA level is that LA boundaries rarely reflect the real city”

ix) Provide comparable estimates for sub-sets of transactions or properties.

7.27. The user consultation questionnaire demonstrated a clear need for data broken down by transaction type, first time buyer versus former owner occupier and property type. Over 60% of respondents to the consultation use statistics by property type and over 40% use statistics on each of first time buyers and new builds. An official house price index needs to be able to not only produce estimates for sub-sets of properties and transactions but also produce them such that the different sub-sets can be compared with each other. In order for these to be produced on a consistent basis an official index needs to include all these sale prices.

7.28. There was also interest in statistics to be produced split by the size of the property, for example, by number of bedrooms.

Explanations of methods and measures of statistical quality

7.29. There were many comments in response to the user consultation questionnaire indicating that users did not understand the methods used by producers of official house price statistics or that they had difficulties explaining them to colleagues and customers. In order for users to understand whether the statistics are suitable for their use they need to understand what assumptions are made in constructing those statistics.

“All methodology should be more clearly explained at the beginning of the press release/report”

7.30. In addition to users requesting more explanation of methods it is also a requirement of the Code of Practice for Official Statistics (UK Statistics Authority, 2009) to “Publish details of the methods adopted, including explanations of why particular choices were made” (Principle 4, Practice 1). It needs to be clear to users that statistical best practice has been followed in the construction of the official house price statistics.

<sup>8</sup> <http://www.neighbourhood.statistics.gov.uk/dissemination/>

7.31. Included in explanations of methods should be references to sources of bias, for example due to coverage error or the method used to construct the index and estimates of the accuracy of the index, for example standard errors. This information will help users understand the accuracy of the index and when small changes in the value of the index are not significant.

#### Commentary

7.32. Just over 20% of respondents to the consultation who use Land Registry and DCLG house price statistics are satisfied with comparisons made between sources. With the range of house price statistics that are available official statisticians can add significant value by providing an overview of the market. Some users felt that this was particularly the case as the official indicators have the biggest time lag so the other indicators have already been published.

“Comparisons between different sources and guidance on when to use which source could more helpful”

7.33. Furthermore, the Code of Practice for Official Statistics requires producers of official statistics to ‘Prepare and disseminate commentary and analysis that aids interpretation’ (Principle 8, Practice 2).

#### Easy to find, view and download

7.34. In order to use statistics users need to be able to find them easily. Generally users were satisfied with the ease of finding house price statistics but there were also many comments about this. Specific comments were made around difficulties with finding data on the official statistics producer websites either due to the websites themselves or the format in which the data is supplied.

“The format in which the statistics are made available - PDFs alone are not a suitable format for publication. The results should also be made available in Excel or raw data format.”

#### Seek National Statistic Status

7.35. All official statistics should seek to meet the requirements of the Code of Practice for Official Statistics. Official statistics that are assessed as being compliant with the code are designated as National Statistics.

7.36. Designation broadly means that the figures meet identified user needs; are produced, managed and disseminated to high standards; and are well explained. It also signifies that the UK Statistics Authority judges the statistics to be readily accessible, produced according to sound methods, and managed impartially and objectively in the public interest.



## 8. How well do current statistics meet user needs?

8.1. **Table 8.1** compares each of the main sources of house price statistics against the user driven framework criteria listed above. Green indicates that the criterion is met, Orange that the criterion could be met with some alteration or coming together of current methods, Red indicates that a more fundamental change in approach would be required. The analysis of non-official sources, whilst beyond the scope of this review, is included for comparison and completeness.

“There seem to be lots of different measures of the same thing. I am a statistician, but I'm using these figures as an uninformed member of the public, and my general approach is just to form a judgement about whether the general direction is up or down.”

**Table 8.1: Summary analysis of the extent to which existing house price indices meet the user driven framework criteria for a definitive official house price index**

Characteristics	Represent prevailing market price	Inflation and price level based on price paid	UK coverage	Monthly index	Timeliness	Seasonally adjusted	Consistent time series	Small area estimates	Sub-categories of property/ buyer
Department for Communities and Local Government	Sample of mortgages only				Second Tuesday of second month			Sample size too small	
Land Registry	Only repeated sales		England and Wales						No characteristics held
Registers of Scotland		No mix adjustment	Scotland		Second month after end of month	Not seasonally adjusted	Quarterly statistics from 2003 onwards		No characteristics held
<b>Non-official sources</b>									
Halifax	Halifax mortgages only	Approvals						Sample size too small	Not provided
Nationwide	Nationwide mortgages only	Approvals						Sample size too small	Not provided
Rightmove	Not all houses are transacted	Asking prices and no mix adjustment				Not seasonally adjusted	Series begins in 2003		Not provided
Acadameetrics			England and Wales						No characteristics held
Royal Institute of Chartered Surveyors	Not transacted properties	Not properties sold	England and Wales					Sample size too small	Not transacted properties
Hometrack	Not transacted properties	Not properties sold	England and Wales			Not seasonally adjusted		Sample size too small	Not transacted properties
University of Ulster	Sample of mortgages		Northern Ireland	Quarterly	Two months after end of quarterly	Not seasonally adjusted			Not provided

Note several of the indices are revised following first publication due to new data becoming available or the method used to construct the index. The colour coding reflects the timeliness of the first release of the index.

- 8.2. It can be seen from the above table that official house price statistics meet many of the requirements for a definitive index. However, no one source meets them all.
- 8.3. Whilst it is recognised that some balance may need to be struck between the criteria, a definitive set of house price statistics should aim to meet all of the criteria specified.

8.4. The main official house price statistics do not currently meet the required criteria in the following ways:

Department for Communities and Local Government:

- The house price index produced by DCLG is based on a sample of mortgage completions data from Regulated Mortgage Survey. As such it does not include all mortgage transactions or houses that are bought only with cash. In order for the index to have coverage of all transactions either an alternative data source or additional data would need to be used which covers these missing elements.
- The DCLG index is the last of the main indices to be published just over a month after the end of the period to which it refers. The seasonal adjustment methodology also causes some small revisions to be made to the back series.
- The sample size of the Regulated Mortgage Survey is such that monthly estimates below regional level are not considered to be robust enough to be published.

Land Registry:

- In calculating their index, the Land Registry use their own 'price paid' dataset, which comprises of all residential property sales since 1995 registered with them. In order to calculate the index the Land Registry use Repeat Sales Regression. This takes the individual growth rates of all properties that were transacted twice in the time period since 1995 to find an average growth rate for the period of interest. As such the house price index only includes property that has been transacted more than once in this period. This means that the index excludes new build houses and may under-represent houses that are seldom transacted.
  - The Land Registry is responsible for registration of sales in England and Wales with other agencies responsible for sales in Scotland and in Northern Ireland. Therefore the Land Registry index covers England and Wales only.
  - There can be a time lag between property completions and registrations of the sale. Therefore the index is subject to revision in subsequent months as more complete data is received. In addition, the repeat sales regression methodology produces revisions to all previous index values.
  - The number of variables held on the Land Registry dataset is limited. This limits the sub-categories of data that can be produced. Data exists on the type of property (detached, semi-detached, terraced, flat) but there is no information on the size of property or on characteristics of the buyer. A previous attempt was made to add a number of bedrooms item to the Land Registry form on a voluntary basis but this was not successful in providing sufficient data.
- 8.5. **Annexes F and G** contain further information on the characteristics of the DCLG and Land Registry house price statistics.



## 9. Recommendations

### Recommendation 1:

- 9.1. A **single definitive house price index and accompanying statistics should be produced by the official statistics producer community**. This index should:
- i) Represent the prevailing market price of residential property at completion of sale.
  - ii) Measure both house prices and house price inflation based on the price paid for transacted properties.
  - iii) Have a UK coverage.
  - iv) Generate estimates (at least) monthly.
  - v) Be timely with minimal revisions.
  - vi) Be available as a seasonally adjusted and an unadjusted series.
  - vii) Provide a consistent index series to enable trend analysis.
  - viii) Provide robust sub-regional estimates and estimates for user defined areas.
  - ix) Provide comparable estimates for sub-sets of transactions or properties.
- 9.2. In addition to these technical specifications the index and accompanying statistics should also:
- Be accompanied by a clear explanation of the methods used to construct the statistics and indicators of the quality of those measures.
  - Provide a commentary of key findings and relationship to other house price statistics and housing market indicators, including those produced from non-official sources.
  - Be easy to find, view and download.
  - Seek National Statistic status.

### Recommendation 2:

- 9.3. In order to provide greater clarity and understanding of the broad range of house price information, and the resultant key messages, **a regular official statistics report should be developed presenting and analysing official house price measures and their relationship to other non-official sources and wider housing market indicators**. Both the values of the indices themselves and the underlying methods should be compared.

### Next steps

- 9.4. The Department of Communities and Local Government and Land Registry have been asked to report back to the National Statistician on steps they could take to better meet the user requirements specified and on the feasibility of producing a joint statistical report containing the single definitive house price index and other house price indicators.
- 9.5. The National Statistician will then seek to publish a statement on the extent to which the user requirements for house price statistics can be met by official statistics producers before Easter 2011. This will accompany a report of progress with the development of a single official statistics report on the housing market and a report on the second stage of the review on wider housing market statistics.

## 10. References

Department for Communities and Local Government 'House Price Index'  
<http://www.communities.gov.uk/publications/corporate/statistics/hpi072010>

Department for Communities and Local Government (2007) 'Guidance on Strategic Housing Market Impact Assessments'  
<http://www.communities.gov.uk/publications/planningandbuilding/strategichousingmarket>

Eurostat (2010) 'Draft Handbook on Residential Property Price Indices'  
[http://epp.eurostat.ec.europa.eu/portal/page/portal/hicp/documents/Tab/Tab/rppi\\_handbook%20combinedv1\\_0.pdf](http://epp.eurostat.ec.europa.eu/portal/page/portal/hicp/documents/Tab/Tab/rppi_handbook%20combinedv1_0.pdf)

Fenwick, D and Duff, H (2002) An improved House Price Index- update on developments, *Economic Trends* 588  
[http://www.statistics.gov.uk/articles/economic\\_trends/et\\_fenwick.pdf](http://www.statistics.gov.uk/articles/economic_trends/et_fenwick.pdf)

Land Registry 'House Price Index'  
<http://www.landregistry.gov.uk/>

Office of the Deputy Prime Minister (2006) Which house price? Finding the right measure of house price inflation for housing policy  
<http://www.communities.gov.uk/documents/corporate/pdf/144131.pdf>

United Nations (2009) System of National Accounts 2008  
<http://unstats.un.org/unsd/nationalaccount/SNA2008.pdf>

UK Statistics Authority (2009) Code of Practice for Official Statistics  
<http://www.statisticsauthority.gov.uk/assessment/code-of-practice/code-of-practice-for-official-statistics.pdf>

## **Annex A – Steering Group members**

Jason Bradbury – National Statistician’s Office (Chair)

Emily Carless – National Statistician’s Office

Janet Dougharty – Department for Communities and Local Government

Bob Garland – Department for Communities and Local Government

Jane Hinton – Department for Communities and Local Government

Ciara Cunningham - Department of Finance and Personnel Northern Ireland

Amy Carton – Land Registry

Eddie Davies – Land Registry

Iain Bell – Ministry of Justice

Kenny Crawford – Registers of Scotland

Ed Ross – Scottish Government

Judy David/ Stephanie Howarth – Welsh Assembly Government

## **Annex B – Organisations invited to user discussion event**

Acadametrics

Bank of England

Calnea Analytics

Council of Mortgage Lenders

Department for Communities and Local Government (Analytical Services Directorate)

Department for Communities and Local Government (National Housing and Planning Advice Unit)

Department of Finance and Personnel Northern Ireland

HM Treasury

House Builders Federation

Housing Statistics Network

Land Registry

Local Government Association

Office for National Statistics (Prices Division)

National Association of Estate Agents

Registers of Scotland

Royal Institute of Chartered Surveyors

Scottish Government

University of Glasgow (Urban Studies)

Welsh Assembly Government

## Annex C: Table of Characteristics

### Official Statistics

Index	Time in house sale cycle	What is used as the 'average' house	Geographic coverage	Coverage	Frequency	Timeliness	Index methodology	Time series	Seasonal adjustment	Smallest geography published
<b>Department for Communities and Local Government</b>	Completion	Expenditure weighted average	UK	Sample of mortgages only. Excludes cash sales	Monthly	Second Tuesday in second month after end of month to which it refers	Hedonic regression <sup>1</sup>	Monthly since 2002 linked to previous series	Yes	Region
<b>Land Registry</b>	Registration of sale with Land Registry	Geometric mean from April 2000 with growth rates applied	England and Wales	Excludes properties that have not sold twice since 1995 and new builds	Monthly	20 working days	Repeat sales regression <sup>2</sup>	1995	Yes	London Borough, Unitary Authority and County
<b>Registers of Scotland</b>	Registration of sale with Registers of Scotland	Average	Scotland	All registered sales	Four-weekly (a), monthly and quarterly estimates (b)	(a) Monday of following week. (b) 6 weeks after end of quarter.	Averaging	2002	No	Local Authority

1. Hedonic regression is a technique to adjust for the mix of attributes that a property has. It assumes that a house can be decomposed into characteristics such as number of bedrooms or type of property. A hedonic regression equation treats these attributes (or bundles of attributes) separately, and estimates prices for each of them.
2. Repeat sales regression calculates the change in property prices using the price for which the same properties sell for between two periods. The attributes of the house are assumed to be held in the price of the property itself.

## Non-official Statistics

Index	Time in house sale cycle	What is used as the 'average' house	Geographic coverage	Coverage	Frequency	Timeliness	Index methodology	Time series	Seasonal adjustment	Smallest geography published
<b>Halifax</b>	Mortgage offer	Standardised	UK	Mortgage offers by Halifax	Monthly	Three weeks after Second Tuesday in the month to which it refers	Hedonic regression	1983	Yes	Region
<b>Nationwide</b>	Mortgage offer	Standardised	UK	Mortgage offers by Nationwide	Monthly	1 to 1.5 weeks after the cut-off date (21st of the month)	Hedonic regression	Monthly since 1991. Quarterly back to 1973.	Yes	Sub-region on a quarterly basis
<b>Rightmove</b>	Houses on the market	Average	UK	All houses that are advertised on rightmove.co.uk including homes that then don't sell	Monthly	Third Monday of the month to which it refers	Averaging	2003	No	London boroughs
<b>Hometrack</b>	Potential achievable sale price	Average of 4 standard homes	England and Wales	Not actual homes on the market. Estate agent and surveyor estimates	Monthly	Monday nearest month end.	Weighted average house price using census housing stock numbers	2000	No	Region
<b>Royal Institute of Chartered Surveyors</b>	Opinion - house prices rising, falling, staying the same	Not applicable	The headline balance covers England and Wales. (Survey also covers Scotland and Northern Ireland)	Opinion - house prices rising, falling, staying the same	Monthly	Second Tuesday in the month	Net balance of surveyors responses	1978	Yes	Region
<b>LSL/Acadametrics</b>	Sale Registered	Mix adjusted	England and Wales	All registered sales	Monthly	Friday preceding the second Saturday of month. Initial estimate for previous month is based on a forecast.	Mix adjusted	Backcast to 1974	Yes	London boroughs, counties and unitary districts
<b>University of Ulster</b>	Completion	Average	Northern Ireland	Mortgage only. Excludes cash sales	Quarterly	Two months after the end of the quarter	Averaging	Quarterly since 1984	No	Northern Ireland regions

## Annex D: Questions asked in the National Statistician's User Consultation on Official House Price Statistics

1. What user group or organisation do you primarily represent?
  - a. Central Government
  - b. Local Government
  - c. Financial Institutions
  - d. Business
  - e. Academia
  - f. Private individual
  - g. Other (please specify)
  
2. Which sources of house price statistics do you use?
  - a. Communities and Local Government house price statistics
  - b. Land Registry House Price Index
  - c. Financial Times House Price Index (Acadametrics)
  - d. Halifax House Price Index (Lloyds Banking Group)
  - e. Nationwide House Price Index
  - f. Other (please specify)
  
3. Which measures of house prices do you use?
  - a. Average house prices
  - b. Distribution of house prices (eg. lower quartile)
  - c. Individual house prices
  - d. Seasonally adjusted house prices
  - e. House price index
  - f. Other (please specify)
  
4. Which groupings of house price statistics do you use?
  - a. Country breakdowns
  - b. Regional breakdowns
  - c. Sub-regional breakdowns
  - d. First time buyers/ former owner occupiers
  - e. New build houses
  - f. Property type
  - g. None
  - h. Other (please specify)
  
5. What do you use house price statistics for?
  
6. Communities and Local Government statistics – thinking only about these house price statistics how satisfied are you with the following aspects?
  - a. Ease of finding the statistics
  - b. The format in which the statistics are made available
  - c. The timeliness of the statistics
  - d. The coverage of the statistics
  - e. Comparisons made between sources
  - f. The information explaining how the statistics are compiled
  - g. The ease of understanding whether the statistics are suitable for your needs
  
7. If you have chosen dissatisfied or very dissatisfied please provide further information

8. Land Registry statistics – thinking only about these house price statistics how satisfied are you with the following aspects?
  - a. Ease of finding the statistics
  - b. The format in which the statistics are made available
  - c. The timeliness of the statistics
  - d. The coverage of the statistics
  - e. Comparisons made between sources
  - f. The information explaining how the statistics are compiled
  - g. The ease of understanding whether the statistics are suitable for your needs
9. If you have chosen dissatisfied or very dissatisfied please provide further information
10. If you have any additional comments, please enter them below:



## **Annex E: Findings from the Online User Consultation Questionnaire**

1. During August 2010 the National Statistician ran an online consultation of users of house price statistics. The online questionnaire was accessed via the Housing Statistics Network website and emailed out directly to known users of Land Registry and Department for Communities and Local Government, DCLG, house price statistics. There were 214 responses received.
2. The consultation was self-selecting and aimed to collect qualitative information on uses of and satisfaction with official house price statistics. The results can only be taken to represent the views of those that responded.

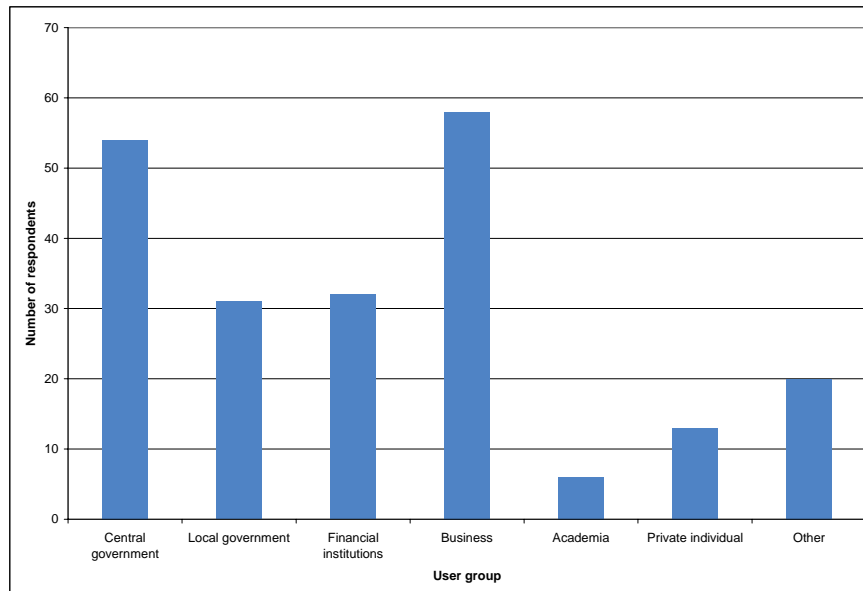
### **Main messages**

- Amongst respondents there was a high usage of DCLG and Land Registry house price statistics but also a high usage of the indices produced by the Halifax and Nationwide.
- Central Government mainly use DCLG house price statistics and use mortgage companies' indices more than Land Registry statistics.
- Local Government use the official statistics more than the private sector statistics and have a slightly higher usage of Land Registry figures over those produced by DCLG.
- The Financial Institutions use the mortgage company data and the LSL/Acadametrics data more than other groups.
- Satisfaction rating for both DCLG and Land Registry statistics are higher for the ease of finding the statistics than for some other aspects. However in the free-text comments respondents commented on difficulties in using the websites of both organisations.
- Satisfaction ratings were lowest for the timeliness of the statistics for both official sources. There were also many free-text comments on this.
- Generally respondents were neither satisfied nor dissatisfied with comparisons between sources. However in the free-text comments some respondents did feel that these comparisons are important with some suggesting that DCLG should produce them.
- Although the satisfaction ratings did not indicate a large proportion of respondents being dissatisfied with explanations of how the statistics are compiled or the ease of determining if they are suitable for their use, quite a few free-text comments indicated a need for better explanation of the methods used.
- Free-text comments demonstrated an interest in further breakdowns of the statistics and greater access to the underlying data.

### Characteristics of respondents and usage of house price statistics

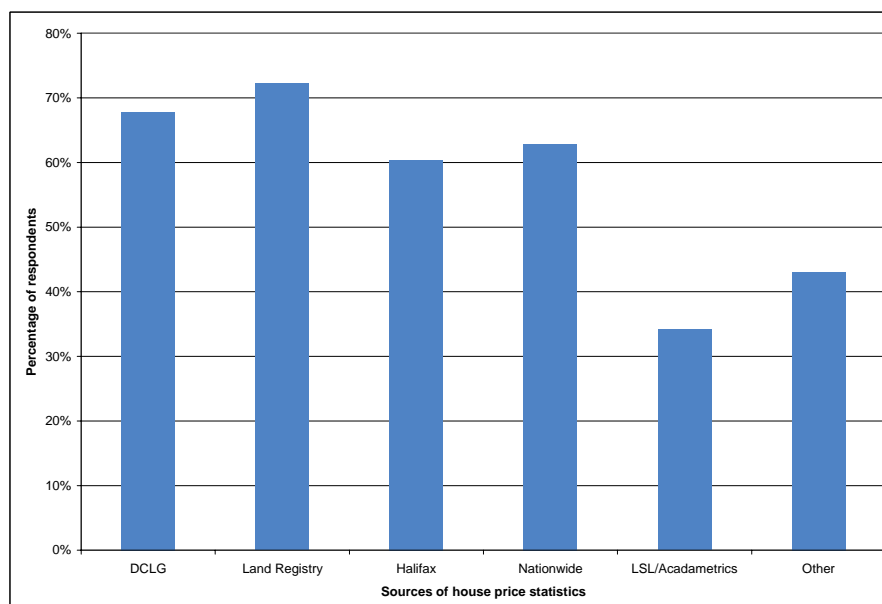
3. **Figure 1** shows the number of respondents who reported belonging to each user group.

**Figure 1: Number of respondents representing each user group**



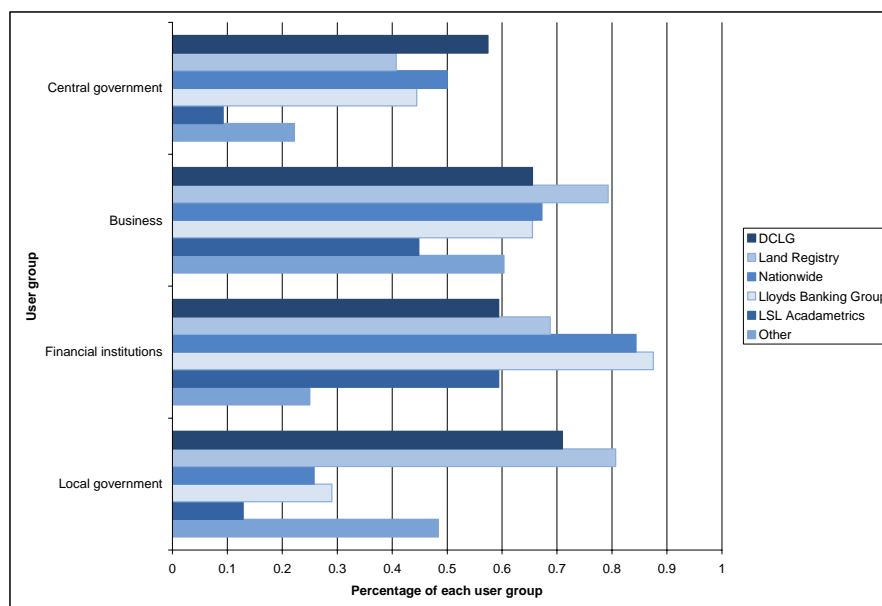
4. Both Central Government users and Business users of house price statistics are well represented by respondents to the questionnaire with over 50 respondents each. The group containing the fewest respondents was Academia. Amongst the 20 people who considered themselves to belong to the Other category, five were devolved administrations or government agencies, four belonged to the media and four were from housing associations.
5. **Figure 2** shows the percentage of users who use each source of house price statistics. Respondents were able to tick more than one option.

**Figure 2: Percentage of respondents using each source**



6. Figure 2 shows that amongst the users that responded there was a high usage of both of the official sources of house price statistics, and of the Halifax and the Nationwide indices. Data sources frequently mentioned in the Other category were Rightmove, Royal Institute of Chartered Surveyors, Hometrack and University of Ulster.
7. **Figure 3** shows the percentage of users in each user group using each source of data. The bars represent the percentage of respondents in each user group who use each source. For example, the percentage of respondents who categorised themselves as Central Government that use the DCLG house price statistics. Note that due to small numbers in the Academia and Private individual categories these have not been included in the chart.

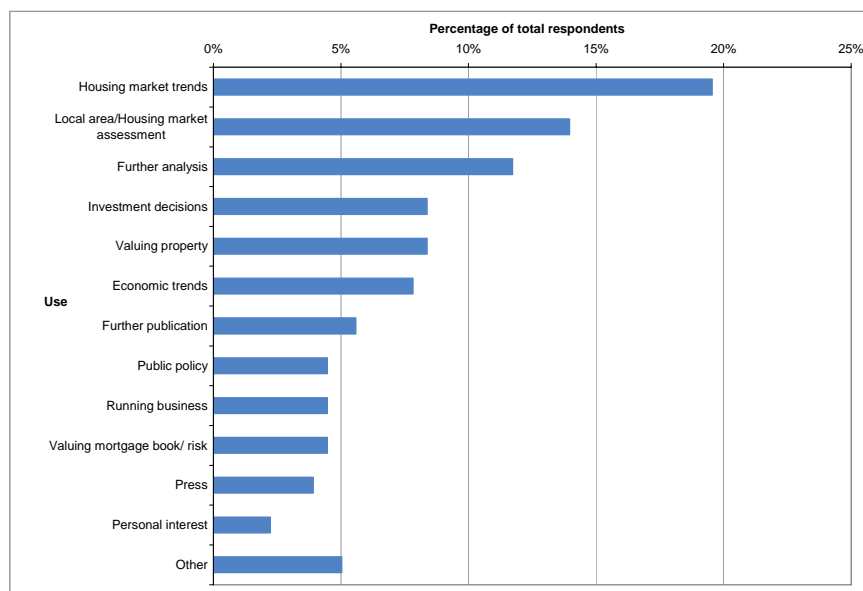
**Figure 3: Percentage of each user group using each source of house price statistics**



8. Respondents from Central Government:
  - Use the DCLG index more than any other.
  - Use the private mortgage companies, Halifax and Nationwide, more than Land Registry statistics.
  - Make least use of the LSL/ Acadametrics index.
9. Respondents from Business:
  - Have high usage of all the listed sources.
  - Use Land Registry statistics the most.
  - Have high usage of 'other' sources compared with the other user groups.
10. Respondents from Financial Institutions:
  - Have high usage of all of the listed sources (excluding 'other' sources).
  - Use the private mortgage companies' data the most out of all the user groups.
  - Have the highest usage of the LSL/ Acadametrics index.
11. Respondents from Local Government:
  - Use Land Registry figures more than DCLG figures but make high usage of both.
  - Use the private mortgage companies, Halifax and Nationwide, the least out of any user group.
  - Have higher usage of 'other' sources of house price statistics than any other user group.

12. The questionnaire asked users to specify in a free-text box what they use house price statistics for. These were then coded based on key themes.
13. **Figure 4** shows the main uses made of house price statistics as coded from free-text answers.

**Figure 4: Percentage of users describing their use of house price statistics as in each category**



14. There was a broad range of uses made of the statistics by respondents and this reflects the diversity of user groups. A large proportion of respondents use the data for statistical or economic analysis to inform decision making or inclusion in a publication at a national or local area level. There are also a large proportion of respondents using the data to make decisions on the buying, selling or building of individual homes. The use of house price statistics as a macro-economic indicator and for valuing mortgage books reinforces the importance of these statistics to the wider economy.

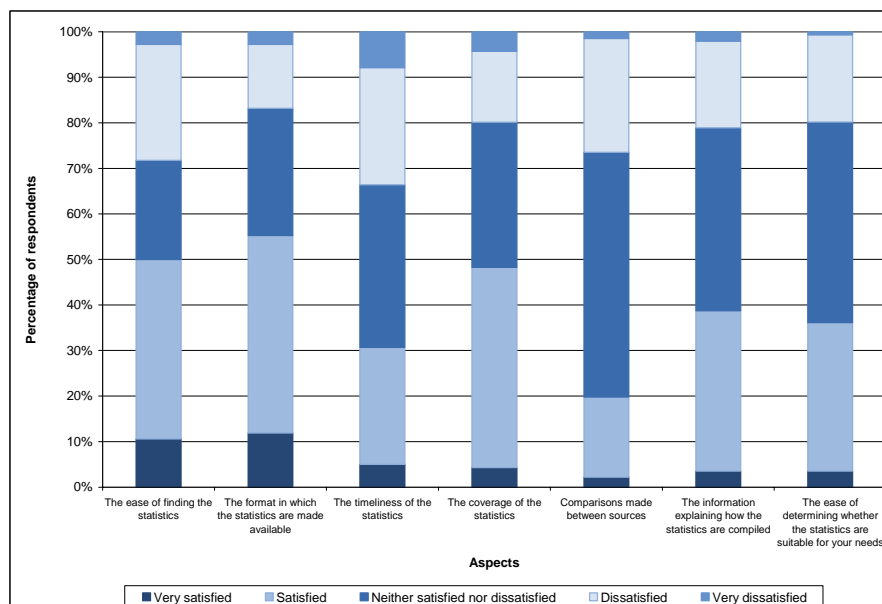
#### **Satisfaction with official house price statistics**

15. The user consultation questionnaire asked respondents to rate their satisfaction with seven aspects for each of DCLG and Land Registry house price statistics. These were:
  - The ease of finding the statistics
  - The format in which the statistics are made available
  - The timeliness of the statistics
  - The coverage of the statistics
  - Comparisons made between sources
  - The information explaining how the statistics are compiled
  - The ease of determining whether the statistics are suitable for your needs
16. Respondents were asked to rate their satisfaction as:
  - very satisfied
  - satisfied
  - neither satisfied nor dissatisfied
  - dissatisfied or
  - very dissatisfied.

## Satisfaction with DCLG house price statistics

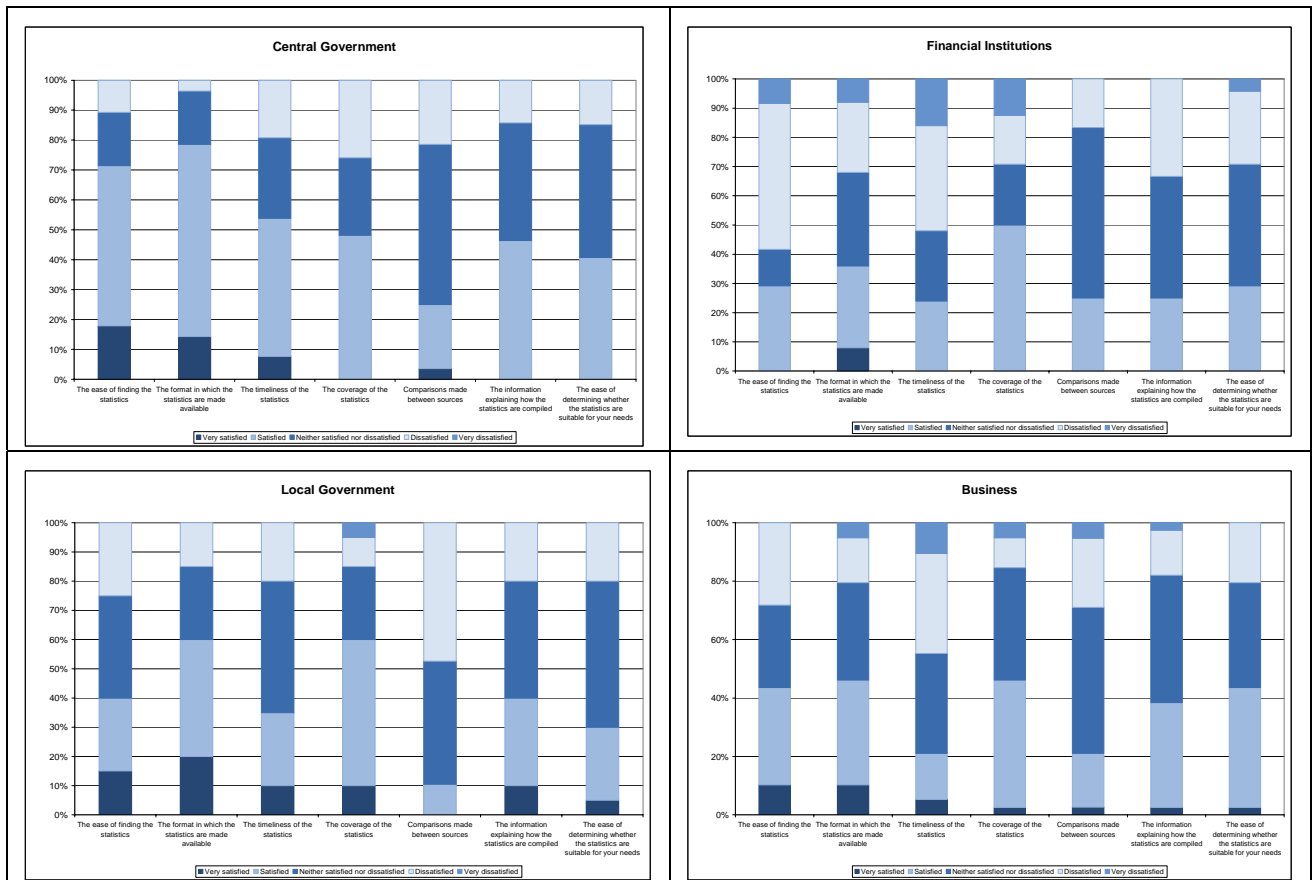
17. **Figure 5** shows the percentage of respondents rating their satisfaction with DCLG house price statistics for each of the seven aspects.

**Figure 5: Satisfaction with aspects of DCLG house price statistics**



- At least 50% of respondents rated their satisfaction with the ease of finding DCLG house price statistics and the format in which they were made available as satisfied or very satisfied. However, nearly 30% of respondents were dissatisfied with the ease of finding the statistics.
  - Positive satisfaction for all other aspects was less than 50%.
  - More than 30% of respondents were dissatisfied or very dissatisfied with the timeliness of DCLG house price statistics and 25% were dissatisfied or very dissatisfied with comparisons made between sources.
18. The satisfaction levels above hide some variation in the satisfaction of respondents with the seven aspects between user groups. **Figure 6** shows the satisfaction ratings of respondents with each aspect of DCLG house price statistics by user group (Central Government, Financial Institutions, Local Government and Business).

**Figure 6: Satisfaction with each aspect of DCLG house price statistics by user group**



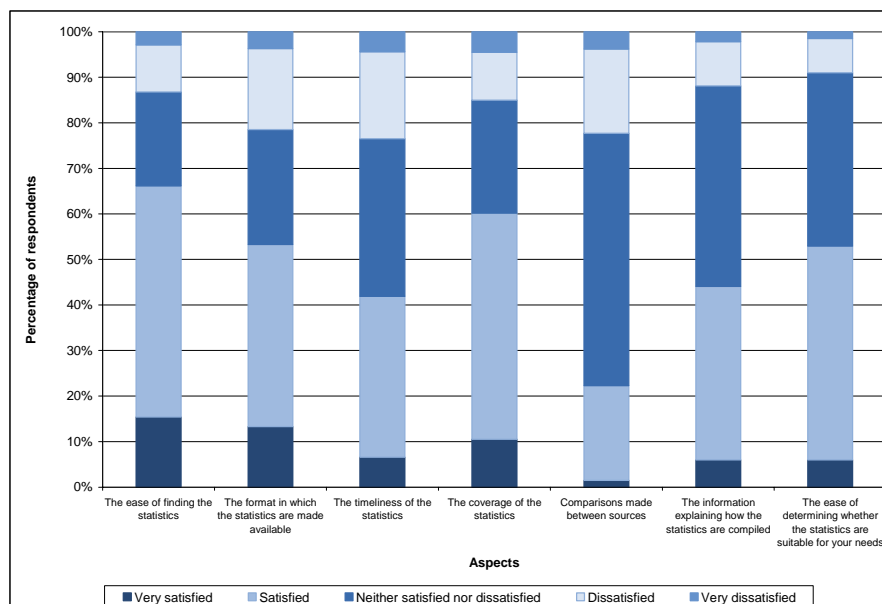
19. The main messages from this are:

- The largest differences in satisfaction with DCLG house price statistics between user groups are between Central Government and Financial Institutions.
- The majority of Central Government respondents indicated that they were satisfied with the ease of finding DCLG statistics, the format in which they are made available and with their timeliness.
- In contrast the majority of respondents from financial institutions indicated that they were dissatisfied with all aspects except the coverage of the DCLG statistics.
- Local Government showed a higher dissatisfaction with comparisons made between sources than the other user groups.

### Satisfaction with Land Registry house price statistics

20. **Figure 7** shows the percentage of respondents rating their satisfaction with Land Registry house price statistics for each of the seven aspects.

**Figure 7: Satisfaction with aspects of Land Registry house price statistics**



- Over 60% of respondents indicated that they were satisfied (or very satisfied) with the ease of finding Land Registry house price statistics and with their coverage.
- Over 20% of respondents indicated that they were dissatisfied (or very dissatisfied) with the format and timeliness of Land Registry statistics and with comparisons made between sources.

21. There was also some variation between user groups in satisfaction with the seven aspects of Land Registry house price statistics. Figure 8 shows the satisfaction ratings of respondents with each aspect of Land Registry statistics by user group (Central Government, Financial Institutions, Local Government and Business).

**Figure 8: Satisfaction with each aspect of Land Registry house price statistics by user group**



22. The main messages from this are:

- Local Government showed the highest satisfaction with all aspects of Land Registry statistics.
- Financial Institutions showed high satisfaction with the ease of finding and the coverage of Land Registry statistics but the lowest levels of satisfaction with the timeliness of the statistics and comparisons made between sources.

### Free-text comments

23. Respondents were given the opportunity to enter free text comments following each of the satisfaction questions and at the end of the questionnaire. The key themes from these comments are outlined below.

### DCLG house price statistics

24. In the free-text box inviting comments on the DCLG House Price statistics specifically the main comments fell in 4 main groups:

- Difficulties with the website
- Timeliness
- Explanation of the method and of differences in results compared with other sources
- Alternative breakdowns of the statistics and opportunities for further analysis



### ***Difficulties with the website***

25. A key theme with users was a difficulty in finding the house price statistics on the DCLG website. Navigating to the right page or using the search engine were both considered difficult. Users also expressed a desire for the live tables to be made easier to use in terms of better explanation of what the measures were, clearer labelling of discontinued series and clearer links to tables. An issue with the website updating on the day the statistics are released was also highlighted.

### ***Timeliness***

26. The timeliness of the DCLG statistics was highlighted as an issue by many of the users who chose to comment. They felt that the time lag to publication of the statistics undermined their usefulness particularly as Land Registry statistics are published first. A better explanation of why the time lag occurs may help with this in addition to identifying ways to increase timeliness.

### ***Explanation of the method and of differences compared with other sources***

27. Many users requested that the DCLG method and the reasons for differences between sources be better explained. Several users noted that they did not understand the method used by DCLG. The DCLG figures were seen as being different from other sources, particular for average price, and to be diverging from them without any clear reason why. One user also suggested that it should be made clearer that house prices are not comparable between years as the footnote is not prominent enough.

28. A clear need was expressed for explanation of the pros and cons of each of the available indices and more of an overview to be produced explaining the story.

### ***Alternative breakdowns of the statistics and opportunities for further analysis***

29. Several users requested alternative breakdowns of the DCLG house price statistics. In particular the ability to sum up local authorities or lower levels to produce more meaningful areas. Also breakdowns by size and type of property, cities and urban/rural were considered useful. A suggestion was made for lower level data to be held somewhere for researchers to use.

### **Land Registry**

30. In the free-text box inviting comments on the Land Registry Statistics specifically the main comments fell in 4 main groups:

- Timeliness
- Explanation of methods
- Difficulties accessing the data
- Desire for more data

### ***Timeliness***

31. Some users recognised the reasons for the time lag in publishing the house price index compared with private sector sources and the significant revisions to the index, but many expressed a desire for them to be more timely. One user described the statistics as 'the bible' of house prices but wished that they were available sooner.

### ***Explanation of methods***

32. Several users queried the justification of using the Repeat Sales Regression methodology, the current averaging methodology and of excluding the non-matched data (i.e. that which has only sold once since 1995). Users asked for a description of the method to be more readily available with each release so that they could use it to

explain the index more widely. Making descriptions of and justification for the methodology more readily available seemed to be a key theme.

33. An explanation of why the published house price growth rates differ from purchased datasets also seemed to be needed.

#### ***Difficulties accessing the data***

34. Users expressed difficulty in accessing the Land Registry house price data particularly for disaggregated figures and time series. They felt that the use of pdfs and the 'search the index' facility made it more difficult to find and use the data. One user described the process as 'laborious'. They would prefer Excel or similar format datasets. Some users use the Land Registry data on the DCLG live tables rather than the Land Registry website.

#### ***Desire for more data***

35. A common theme was the desire for individual house prices to be made available for free via open datasets and for ward level estimates. Whether this is possible or not is outside the scope of this review.
36. Other users were asking for alternative breakdowns such as cash/ mortgage sales, cities and rural versus urban analyses. More than one user also expressed a desire for a property size indicator.

#### **Overall comments**

37. There was a wide variation in the comments made by respondents when given the opportunity at the end of the questionnaire. Some respondents used it as an opportunity to highlight their own or other indices which they felt to be the best one, some identified specific issues or areas of concern with current statistics and others identified a need for data wider than house price statistics.
38. The broad themes of those comments that are substantive to this review fell into the following categories:
  - A need for better explanation of the available statistics and/or a single definitive 'official' index
  - Timeliness
  - A need for additional/ alternative breakdowns of the statistics
  - A reinforcement of the importance of reliable house prices statistics

#### ***Better explanation and/or a single index***

39. There were numerous comments around the number of indices currently available. Some respondents were content with the number and variability of the indices but suggested that a balanced comparison and explanation of the differences should be produced alongside the statistics. Others felt that a single 'definitive' official index should be produced to aide the less technical user and provide a single story to base decisions on. The way that house price statistics are reported in the media was raised as an area of concern. It was felt that government could do more to improve the reporting of the statistics. There were also a couple of comments on the inefficiency of government producing two indices.

#### ***Timeliness***

40. Many users raised the issue of the timeliness of house price statistics as an area of concern. The time lag made the current statistics out-of-date for some uses. It was felt that if the official figures came out quicker then there would not be as much reliance on the private sector indices.

### ***Additional/ alternative breakdowns***

41. Several respondents would be keen to see additional breakdowns of house price information, such as by number of bedrooms and property size. It was highlighted that housing market areas do not tend to match the administrative geographies that are generally used for official statistics.

### ***Importance of reliable house price statistics***

42. There were several comments about the importance placed on house price statistics to make decisions by a wide variety of users. One respondent felt that “The current volatility and variance in the various indices is adding to the current economic uncertainty.”

### **Comments by user group**

43. The responses to the free text questions grouped by user group (Central Government, Local Government, Financial Institutions and Business) followed similar categories to the comments overall. The differing needs of the user groups were evident in the comments made.

#### ***Central Government***

44. Comments from Central Government were mainly around:

- The importance of ensuring that suitable indices are available and aligned to policy and housing agendas and it being clear which index users should use.
- Difficulties in finding the statistics they require, the format that statistics are available in, and the need for comparisons between sources and explanations of the methods used.

#### ***Local Government***

45. The main comments from Local Government respondents were around:

- Better explanation of the available statistics, in particular the reason for the differences in the average house price published by Land Registry and that calculated from the purchased price paid dataset. Also, the need for an explanation of the average house price by property type and local authority - as each property type has the same growth rate in house prices. Also more general explanations for both sets of statistics.
- The requirements for more breakdowns and comparisons of house price statistics at a local level and boundaries that reflect housing markets rather than administrative boundaries.
- The timeliness of official house price statistics.

#### ***Financial Institutions***

46. The comments from respondents in financial institutions fell broadly into two groups:

- The lack of timeliness of official house price statistics, particularly those published by DCLG.
- Difficulties in using the websites of official statistics producers and in identifying and finding the specific series that they require.

## ***Business***

47. Comments from respondents from business related to:

- The lack of timeliness of official statistics and how this reduces their usefulness.
- The need for greater clarity and transparency of the methods used to construct the statistics and for more comparisons between sources.
- The desire for more data to be made available or for available information to be more accessible.

## **Annex F – Summary of Department for Communities and Local Government House Price Statistics**

### **Background**

1. This document summarises the Department for Communities and Local Government (DCLG) House Price Statistics using the European Statistical System six dimensions of output quality. These dimensions are recommended in the 'Guidelines for Measuring Statistical Quality'<sup>1</sup> which has been produced by the Office for National Statistics. There is also a basic summary of the methodology along with a description of the key assumptions.

### **Relevance**

2. There is much interest in the characteristics of, and changes in, the housing market from a variety of sources. Policy makers base policies, such as those around house building and stamp duty limits, on information about housing demand, distribution of house prices and related statistics. Economists and the Monetary Policy Committee use housing market statistics as indicators of the state of the whole economy. The general public may base decisions over when or whether to buy or sell a house, and at what price, and how much savings they need to purchase a house on the published information. House prices and house price indices may also feed into estimates of inflation for the UK and for Europe in the near future.
3. DCLG publishes statistics on house prices, house price indices and mortgage advance and borrower characteristics. The concept being measured in the DCLG data is the average house price, and change in house prices over time, of residential property (sold at market value). Sales to sitting tenants are excluded as these may be sold with a discount.
4. Like all the other main house price indices the DCLG index is based on transactions rather than valuations of the entire housing stock. For some purposes this is the concept of interest. Where an average price of all stock is needed it is assumed that the traded values are representative of prices of all stock.
5. The house price index produced by DCLG is based on mortgage completions data from Regulated Mortgage Survey (RMS). As such it does not include houses that are bought only with cash. In general the house price of interest is the 'average' house price across the whole market. There is an implicit assumption here that houses bought with cash show the same movement in prices as those bought with a mortgage.
6. An average mix-adjusted house price is produced. The house prices are mix-adjusted to compensate for the variation in the characteristics of houses sold in any one period and then averaged to provide an indication of the overall change in house prices. Weights are calculated once a year (in January) based on the relative numbers of transactions during the previous three years (as recorded in the Land Registry data). However, because these transaction weights are applied to average cell prices, the net effect is that the index uses expenditure weights.

### **Accuracy**

7. No standard errors are produced for the DCLG House Price Index.

8. Since 2005, the DCLG index has been based on the Regulated Mortgage Survey from the Council of Mortgage Lenders which covers around 90% of mortgage lenders. Not all Council of Mortgage Lenders' members provide RMS data and not all lenders agree to share their data with DCLG. The DCLG sample for the house price index equated to around 55% of mortgage transactions in 2009. This is down slightly from a 60% sample prior to the credit crunch. The Survey is based on lenders providing a copy of their statutory Product Sales Data which they have to provide to the Financial Services Authority.
9. The types of houses transacted in a period may vary. Estimate of the change in house prices over time should reflect the change in house prices rather than a change in the mix of houses transacted. As the underlying data for the DCLG index is the house prices transacted in the period it is necessary to adjust the data to take account of the mix of properties sold in any one period. This is done through hedonic regression and the mix-adjusted average price.
10. The housing market in the UK follows a seasonal pattern with fewer sales in the winter and more sales in the spring. To compensate for any pattern that this causes in house prices DCLG have seasonally adjusted the house price index for the main series at the UK level. The seasonally adjusted series were first published in September 2009 and the seasonal adjustment model is reviewed and updated on an annual basis.

### **Timeliness**

11. The DCLG index is published monthly and is generally available on the second Tuesday of the second month after the month to which it refers. Some lenders only provide quarterly rather than monthly RMS data and therefore each quarter, the previous two months are subject to small revisions. No other revisions are made to the index from the previous period except for those that are due to the annual chain linking method. The seasonally adjusted series is updated annually.

### **Accessibility**

12. DCLG publish a statistical release containing headline figures and charts of annual rates of change and average house prices by region, and the annual rates of change split by type of buyer and whether a new or pre-owned dwelling. Excel tables accompany the release containing time series data back to February 2003. These are released on the DCLG website as close to 9:30am on the day of publication as possible.
13. Additional tables of the DCLG house price index and average house prices are available on the live tables part of their website.
14. Information on the methodology used to compile the DCLG house prices and house price index are available on the website<sup>2</sup> alongside the publication.

### **Comparability**

15. DCLG has calculated a quarterly house price index since 1968. In 2003 the sample size for the DCLG index was increased from 5% of completions from participating lenders to 100% of their data. At the same time the index became monthly and a change was made to the mix-adjustment methodology. This causes a discontinuity in the index at that point.

16. The annual chain-linking process and methodology for weighting the mix-adjustment cells results in the house prices themselves not to be comparable between years. The index and growth rates can be compared.
17. As the same methodology is used for all domains the DCLG index is comparable between regions and over domains such as first-time buyers and former owner occupiers.

### **Coherence**

18. Due to different underlying data sources and methodologies there is a lack of coherence between the various house price statistics and house price indices. Sources such as Nationwide and Halifax use their own mortgage approvals data, RightMove uses asking prices and Hometrack and the Royal Institute of Chartered Surveyors use opinion surveys to compile their indices. There are also differences in coverage with Land Registry covering England and Wales only but including cash sales.
19. The different sources use varying averages or standardised houses on which to base the 'average' house price. Land Registry uses the technique of Repeat Sales Regression whilst other indices are constructed by combining the different sources. Even where other indices use hedonic regression to produce their index there are differences in the variables included in the model. All of these factors lead to differences in estimates of the 'average' house price and changes in them.
20. There is no one universally accepted method for constructing residential property price indices around the world. Therefore the coherence of the DCLG house price indices with indices around the world is limited.

### **Basic summary of method**

21. The DCLG house price index uses hedonic regression<sup>3</sup> to mix adjust for differences in the characteristics of properties between periods. The model corrects for variation in the types of houses transacted based on the following variables:
  - Location (local authority district or London borough)
  - Local authority cluster (an ONS classification of authorities)
  - Type of neighbourhood (ACORN)
  - Dwelling types
  - Number of habitable rooms (or bedrooms)
  - Old/new
  - First-time buyer/ former owner occupier (FTB/FOO)
22. Plus interaction terms for:
  - ACORN x dwelling type
  - ACORN x FTB/FOO
  - Dwelling type x old new
23. A regression equation is set up with the above variables. This results in an estimate of the coefficient for each of the main terms plus interactions. Cells are specified based each combination of the main effects and interactions and a price is estimated for the current period for each cell. These are then weighted together based on the number of transactions. The data that are provided from the mortgage lenders has missing

values for some variables. Rather than not using these observations each missing covariate is given a special value to indicate that it is missing. This affects the assumption of constant variance (necessary for regression analysis) and so a correction is made in the model.

### **Assumptions in the methodology**

- Cash sales move in the same way as mortgage sales.
- The model accounts for sufficient variation in house prices.
- The model is valid and correctly specified.
- The inclusion of observations with some missing variables and the adjustment to the model are valid.
- Annual updating of the weights creates the best balance between ensuring the weights are up to date and continuity of results.

### **References**

1. Guidelines for Measuring Statistical Quality (ONS, 2007)  
[http://www.statistics.gov.uk/downloads/theme\\_other/Guidelines\\_Subject.pdf](http://www.statistics.gov.uk/downloads/theme_other/Guidelines_Subject.pdf)
2. Monthly house price index methodology (DCLG website)  
<http://www.communities.gov.uk/housing/housingresearch/housingstatistics/housingstatisticsby/housingmarket/notesdefinitions/experimentalmonthlyhouse/>
3. The "Hedonic" Model Used in the ODPM'S House Price Indices  
<http://www.communities.gov.uk/documents/housing/pdf/141410.pdf>



## Annex G – Summary of Land Registry House Price Statistics

### Background

1. This document summarises the Land Registry House Price Statistics using the European Statistical System six dimensions of output quality. These dimensions are recommended in the ‘Guidelines for Measuring Statistical Quality’<sup>1</sup> which has been produced by the Office for National Statistics. There is also a basic summary of the methodology along with a description of the key assumptions.

### Relevance

2. There is much interest in the characteristics of, and changes in, the housing market from a variety of sources. Policy makers base policies, such as those around house building and stamp duty limits, on information about housing demand, distribution of house prices and related statistics. Economists and the Monetary Policy Committee use housing market statistics as indicators of the state of the whole economy. The general public may base decisions over when or whether to buy or sell a house, and at what price, and how much savings they need to purchase a house on the published information. House prices and house price indices may also feed into estimates of inflation for the UK and for Europe in the near future.
3. The concept being measured by the Land Registry data is the price of, and the change in price of, residential houses in England and Wales.
4. Like all the main sources of house price statistics the Land Registry index is based on transactions data rather than valuations of the entire housing stock. The transaction price recorded is that returned to the Land Registry as part of the registration of the sale.
5. An average price for each period is calculated by applying the growth rates in each period to the average (geometric) house price in April 2000.

### Accuracy

6. No standard errors are produced for the Land Registry House Price Index.
7. The “Land Registry House Price Index Methodology”<sup>2</sup> note indicates that the ideal dataset would comprise of ‘every house’s price at every point in time’. However this is not available.
8. The Land Registry use their own ‘price paid’ dataset which comprises of all residential property sales since 1995 registered with them. In order to calculate the index the Land Registry use Repeat Sales Regression. This takes the individual growth rates of all properties that were transacted twice in the time period since 1995 to find an average growth rate for the period of interest. The key characteristics of houses sold are held in the house prices themselves. The method however assumes that the properties have undergone neither significant improvement nor substantial physical deterioration or an adjustment needs to be made to the index.
9. By virtue of the methodology the house price index only includes property that has been transacted more than once. This means that if the index excludes new build houses it may under-represent houses that are seldom transacted.
10. The housing market in the UK follows a seasonal pattern with fewer sales in the winter and more sales in the spring. To compensate for any pattern that this causes in house prices the Land Registry series is seasonally adjusted. The seasonal adjustment model is based on the Classical Seasonal Decomposition or ratio to moving average model.

## **Timeliness**

11. The Land Registry House Price Index is published monthly, 20 working days after the end of the month to which it refers. The underlying data for the index is residential property transactions registered with the Land Registry. There can be a time lag between property completions and registrations of the sale. Therefore the index is subject to revision in subsequent months as more complete data are received. In addition the repeat sales regression methodology produces revisions to previous index values as additional houses are sold which cover the period of interest.

## **Accessibility**

12. The Land Registry House Price Index is published in a statistical release on their website. The release includes seasonally adjusted index values, monthly and annual growth rates and average house prices for the most recent period. Growth rates and average prices are provided broken down to local authority and London borough geographies. The number of transactions in the previous month and the same month a year earlier is also included in the release.
13. Back series of the house price statistics are available on the website through an interactive facility.
14. Information on the methodology of the index is available on the Frequently Asked Questions part of the Land Registry website.
15. Access to the individual price paid data is available at a cost.

## **Comparability**

16. The Land Registry has produced a monthly index going back to January 1995. The index and average prices are comparable across the domains published and between years. Average prices created for other areas based on calculating the average (arithmetic mean) from the individual price paid dataset will not be directly comparable with the published figures due to differences in the methodology.
17. Average prices and growth rates produced for England and Wales will not be comparable with those produced by the sister organisation in Scotland, Registers of Scotland, due to differences in methodology.

## **Coherence**

18. Due to different underlying data sources and methodologies there is a lack of coherence between the various house price statistics and house price indices. Sources such as Nationwide and Halifax use their own mortgage approvals data, RightMove uses asking prices, and Hometrack and the Royal Institute of Chartered Surveyors use opinion surveys to compile their indices. There are also differences in coverage with other indices being UK wide, but most excluding cash sales.
19. The different sources use varying averages or standardised houses on which to base the 'average' house price. Nationwide, Halifax and Department for Communities and Local Government use the technique of hedonic regression to construct their index whilst other indices are constructed by combining the different sources. All of these factors lead to differences in estimates of the 'average' house price and changes in them.
20. There is no one universally accepted method for constructing residential property price indices around the world. Therefore the coherence of the Land Registry house price indices with indices around the world is limited.

21. Land Registry publishes statistics on the number of transactions of residential property alongside its house price statistics. There are differences between the figures published by Land Registry and HM Revenue and Customs who also publish number of residential transactions. These differences are thought to be due to differences in the way in which transactions are included.

### **Basic Summary of Method**

22. The Land Registry House Price Index is based on Repeat Sales Regression. This technique is based on the assumption that no two houses are the same. Even where physical attributes such as the number of bedrooms, whether detached or terraced, or size of garden are taken into account the price paid for a property will still vary. Repeat Sales Regression takes the 'matched pairs' of transactions relating to the same property at two or more time periods to calculate a price change for that property. These individual price changes are then combined to estimate the average price change between any two periods. The model assumes that there have been no changes to the property either to substantially improve it or as a result of physical deterioration.
23. The growth rates are then applied to the average (geometric mean) price in April 2000.

### **Assumptions**

- The change in house prices for properties that have been transacted more than once since 1995 represents the change in house prices for properties that have not been transacted.
- The change in house prices for properties that have been transacted more than once since 1995 represents the change in house prices for properties that have only been transacted once.
- The change in house prices for those house prices registered by the time the extract is taken to produce the index is representative enough of those house prices not yet registered.
- The seasonal adjustment model is valid.
- The quality adjustment adequately compensates for changes to properties between time periods

### **References**

- 1.Guidelines for Measuring Statistical Quality (ONS, 2007)  
[http://www.statistics.gov.uk/downloads/theme\\_other/Guidelines\\_Subject.pdf](http://www.statistics.gov.uk/downloads/theme_other/Guidelines_Subject.pdf)
- 2.Land Registry House Price Index Methodology Note  
<http://www.calnea.net/LandRegistryIndex.pdf>

