ADVISORY PANEL ON CONSUMER PRICES – STAKEHOLDER

Redeveloping Private Rental Market Statistics

Status: Final
Expected publication: Alongside minutes

Purpose

1. This paper presents the progress on and proposed methodology for the production of new statistics for the private rental market. These statistics will be used in future to produce the owner occupiers' housing costs (OOH) element of Consumer Prices Index including OOH (CPIH).

Actions

2. Members of the Panel are invited to:
   a) endorse Office for National Statistics' (ONS) recommendations to re-develop private rental market statistics through the utilisation of rental microdata received from Valuation Office Agency (VOA) in September 2019, and consider their future use to measure OOH for CPIH
   b) provide feedback on the development work to date

Background

3. The VOA's Private Rental Market Statistics aim to reflect the UK renter's experience of changing private renting costs. They are intended to inform decisions related to provision of housing, mortgage lending, demand for new rental properties, and the current state of the rental market. VOA's microdata are also used by ONS to compile a measure of OOH, which accounts for around 17% of CPIH, the ONS's headline measure of inflation and as the basis for the private rents component in CPIH which has a weight of around 5%.

4. The rents development project is the first step towards achieving fully consistent rental market price statistics. The project will utilise the access ONS now has to both rental market microdata and property attributes data (via Council Tax valuation lists) from VOA.

5. Historically, for the private rental market, ONS published the UK Index of Private Housing Rental Prices (IPHRP) monthly and VOA published Private Rental Market Statistics (PRMS) for England bi-annually, both based on the same VOA private rental microdata.

6. IPHRP publishes the change in rental price over time for the UK, by country (England, Wales, Scotland, Northern Ireland) and by English region (North East, North West, Yorkshire and the Humber, East Midlands, West Midlands, East of England, London, South East, South West). An index and associated growth rates are published but not absolute rental price. PRMS publishes simple average point-in-time estimates of absolute rental price in England down to smaller Local Authority geographic level, but these are not comparable over time.

7. Following consultation with stakeholders and users, ONS is looking to re-develop private rental market statistics to better meet user needs. ONS aims to publish average rental prices

for the UK and its geographies which are comparable over time and domain to a greater geographic granularity than the existing regional level available in IPHRP.

8. ONS currently publish two statistical bulletins relating to house prices: House Price Index (HPI) and House Price Statistics for Small Areas in England and Wales (HPSSA). ONS' long-term plan is to consolidate all housing market statistics (IPHRP, PRMS, HPI & HPSSA) into one unified publication. The rental market statistics development project is the first step towards this goal.

Potential range of new statistics

9. The objectives of this project are:

    a. To ensure published rental statistics remain relevant to users and better meet user needs by producing statistics that include average rental price and change in rent over time at increased geographical granularity

    b. To produce a fully consistent set of measures of housing market statistics, which will inform OOH, using the latest available data sources and the most robust available best practice methods

    c. To reduce time and resource required to publish private rental market statistics by transforming two publications (IPHRP and PRMS) into one over-arching publication, which will in the long-term, enable further efficiency increases by consolidating all housing market statistics into one unified publication

10. The full range of new statistics to be presented in the new private rental market statistical publication is not yet confirmed. It is anticipated to include an index showing the rental price growth over time, similar to that presented by IPHRP. In addition, the new publication will utilise the transaction-level data recently obtained from VOA to present the rental price value as a time-series and include geographical breakdowns by UK country, region, county and local authority-level. There is additional work ongoing in ONS exploring the feasibility of publishing rental price statistics for smaller areas (e.g. middle layer super output area). There is also potential to publish rental price by various breakdowns; number of bedrooms, property type, floor space.

11. Users have previously requested that PRMS be published quarterly as opposed to bi-annually. While possible, there would be data-sufficiency issues since three-quarters of the data sample would remain constant between quarterly publications. However, successful rents development anticipates that the new rents statistical publication will be produced monthly, aligned with IPHRP, meeting users' desire for higher publication frequency.

Achievements over the last year

12. To produce rental statistics comparable over time and at increased geographic granularity, access to transaction-level data for England, Scotland, Wales and Northern Ireland is needed. ONS already received transaction-level data for Scotland, Wales and Northern Ireland, but historically received only aggregate rental data for England. Thus, ONS identified that access to VOA's England private rental market microdata was required.

13. Historically, VOA have used the rents microdata to produce the owner occupiers' housing costs (OOH) element of CPIH, which is then delivered to ONS. A priority of ONS was to transfer production of the OOH series from VOA to ONS, a priority due to this series underpinning CPIH. By March 2020, ONS will have responsibility for OOH production, enabling ONS to focus on rents development.

14. In September 2019, ONS began to receive transaction-level private rental data from VOA, enabling the launch of the development project. Simultaneously, VOA transferred responsibility for publication of PRMS statistics to ONS, which was successfully published by ONS for the first time in December 2019. As a consequence, these private rental market statistical publications have been unified under a single department.

15. In October 2019, ONS began analysis of the VOA microdata and research into methodological best practice. A hedonic regression approach is favoured with a geometric mean average price. This is the same method used to calculate the UK House Price Index. This method was previously not considered as the VOA were unable to access the property attributes data needed for the application of hedonic regression approach. ONS has access to these attributes data.

16. In January 2020, ONS started developing a prototype system, working closely with methodological colleagues to ensure best practice is followed.

Current methodology

17. Historically, ONS receives elementary aggregates for England, and computes elementary aggregates for Wales, Scotland and Northern Ireland using microdata. Properties are stratified by property type, region and furnished status. At the time of development, access to property attributes data was unavailable to apply a hedonic regression methodology. A basic description of the current methodology[1] is a 'matched pairs' approach, where-by a property is selected in the rental sample and the price of this property is followed through time.

18. Elementary aggregates are produced using geometric means, weighted together and chain-linked to produce an index of rental price growth over time. For IPHRP, these elementary aggregates are weighted together to reflect the stock of privately rented property.

19. For OOH, the same underlying elementary aggregates are used, except the furnished series are omitted. Separate weights, that reflect the owner occupiers' sector are used to calculate a total OOH series for use in CPIH.

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[1] Full details of the methodology are here:
https://webarchive.nationalarchives.gov.uk/20160106022739/http://www.ons.gov.uk/ons/guide-method/user-guidance/prices/cpi-and-rpi/improvements-to-the-measurement-of-owner-occupiers--housing.pdf

Proposed potential methodology

20. A summary of the proposed, hedonic regression methodology is as follows:

    a. Utilise the latest available data sources to obtain property characteristics. Data sources include:

        i. Rental market price data for England, Wales, Scotland, and Northern Ireland: Transaction level data containing individual rent price, property address and property characteristics such as furnished status and property type

        ii. VOA Council Tax data: Property level data containing property address and property characteristics such as floor area and number of bedrooms

        iii. CACI ACORN data: Segmentation of UK neighbourhoods by consumer profiles into classification

        iv. National Statistics Postcode Lookup: Classification of UK postcodes into local authorities, regions and countries

    b. Link transaction-level rents data with Council Tax data using property address information to identify properties in both datasets. Link the resultant data with ACORN and Postcode data by postcode, to obtain the full set of property characteristics

    c. Model dependence of rent price on property characteristics using a hedonic regression model similar to that used in HPI. Identified key property characteristics include:

        i. Number of bedrooms

        ii. Floor area (in m2)

        iii. Property type (Flat/Maisonette, Bungalow/House:Detached, Bungalow/House:Semi-detached, Bungalow/House:Terraced)

        iv. Furnished status (Y/N)

        v. ACORN Group classification

        vi. Local Authority property resides in

    d. Populate missing data using the imputation method recommended by ONS's Editing and Imputation Expert Group

    e. For the UK, Elementary aggregates are produced using geometric means, weighted together and chain-linked to produce an index of absolute average rent price over time

21. To January 2020, Step (a) and Step (b) have been achieved and current work is focused on testing the robustness of the regression model by testing linear regression assumptions hold true in the model. This includes testing for multicollinearity, homoscedasticity, normality, linearity and independence.

22. The recommended imputation technique has been adopted and is being implemented into the working methodology (Step (c)).

23. This development work will focus on our rental statistics, however longer-term we will consider the new methodology for OOH.

Roadmap for implementation

24. Consultation with ONS's Methodology Advisory Committee (MAC) is due to initiate in February 2020 to advise on the proposed methodology and achieve methodology sign-off. Approval process timelines have not yet been confirmed for this project. ONS hopes to publish a development plan in May 2020 that sets out when the new rental data will be first published, once the proposed methodology has been ratified by internal Methodology Advisory Committee (MAC).

25. ONS will liaise regularly with stakeholders to ensure that users have the opportunity to feed into our planning, including structure and content of the new statistical publication.

26. ONS will present updates on the rental market development project to both the Technical and Stakeholder Panels to collect feedback from users.

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