

Introducing the New CPIH Measure of Consumer Price Inflation

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Introduction

CPIH is a new additional measure of consumer price inflation including a measure of owner occupiers' housing costs (OOH). This article explains the history behind CPIH and details of how it is constructed. A back series for CPIH and OOH from 2005 to 2012 is available in the Excel file accompanying this article.

Owner occupiers' housing costs are the costs associated with owning, maintaining and living in one's own home. For many owner occupiers the biggest housing cost is the mortgage payment, other costs include dwelling insurance, estate agents' fees and maintenance and/or renovation costs. These costs are a significant expense for many households and account for approximately ten per cent of total household expenditure (as measured by the UK's National Accounts). The costs are excluded from the Consumer Prices Index (CPI) and CPIH has been developed to help fill this gap.

CPIH uses an approach called rental equivalence to measure OOH. Rental equivalence uses the rent paid for an equivalent house in the private sector as a proxy for the costs faced by an owner occupier. In other words this answers the question "how much would I have to pay in rent to live in a home like mine?" for an owner occupier.

The production of CPIH will be subject to the same processes as for CPI to ensure that its quality is maintained. CPIH will initially be published as an experimental statistic¹ until its assessment by the UK Statistics Authority is completed in the summer of 2013.

Background

Many owner occupiers' housing costs are currently excluded from the CPI, the UK's HICP². This has been because of practical difficulties both in determining the most appropriate way of calculating these costs and in obtaining the necessary data to do so. There has also been a lack of agreement internationally of an approach that is suitable across all members of the European Union. With housing costs accounting for approximately ten per cent of households' consumption expenditure (based on expenditure estimates in the UK's National Accounts), the continued absence of OOH within the CPI is a weakness. ONS has been working with Eurostat for a number

¹ Experimental statistics are new official statistics undergoing evaluation.

² The Harmonised Index of Consumer Prices (HICP) is a consumer price index which is compiled according to a methodology that has been harmonised across EU countries. This is the same as the existing CPI in the UK.

of years towards implementing OOH into the HICP, but the introduction of these costs is still a number of years away.

Due to strong user demand the development of measures of OOH in the UK has progressed faster than by Eurostat. With guidance from the Consumer Prices Advisory Committee (CPAC)³, ONS developed two approaches to measuring OOH, the rental equivalence approach and the net acquisitions approach.

The Board of the UK Statistics Authority (UKSA) accepted the National Statistician's recommendation to use the rental equivalence approach to measure OOH in September 2012, following a report from the Consumer Prices Advisory Committee (CPAC)⁴, a public consultation⁵ and a review carried out by the National Statistician.

OOH and CPIH Methods

The underlying concept for a rental equivalence price index is that a dwelling is a capital good, and therefore not consumed, but instead provides a flow of services that are consumed each period. Such services encompass shelter and security of tenure. The value of the flow of services that owner occupiers receive is assumed to be the same as the rent that the dwelling might attract in the rental market. Rental equivalence imputes owner occupiers' housing costs from the rents paid for equivalent rented properties. Put more simply, it is 'measuring the price owner occupiers would need to pay to rent their own home'.

OOH Data Source

The rental equivalence approach developed uses administrative private housing rental data collected by rents officers for the Valuation Office Agency (VOA) for all the regions of England plus comparable data from the Welsh and Scottish Government⁶. These data are collected for the purposes of calculating the Local Housing Allowance (LHA) for Broad Rental Market Areas (BRMA). Suitable comparable data are not currently available for Northern Ireland so the existing CPI private rental data collected in Northern Ireland will be used.

The Northern Irish administrative data were deemed unsuitable because they are currently neither frequent nor timely enough for inclusion within a measure of consumer price inflation, and the coverage of the data only includes the Belfast Metropolitan area, rather than the whole of Northern Ireland. The Northern Ireland Housing Executive (NIHE), responsible for collecting private rental data, is currently undergoing a programme of development to improve the timeliness and extend the coverage to the whole of Northern Ireland. ONS will work with NIHE in their development programme and look to include comparable administrative private rental data within CPIH.

³ CPAC Papers – April 2012 Meeting, ONS; <http://www.ons.gov.uk/ons/guide-method/development-programmes/other-development-work/consumer-prices-advisory-committee/cpac-papers/index.html>

⁴ Consumer Prices Advisory Committee – 2012 Annual Report, see link in footnote 3.

⁵ Consultation on the recommended method of reflecting owner occupiers' housing costs in a new additional measure of consumer price inflation, and the strategy for Consumer Price statistics, ONS; <http://www.ons.gov.uk/ons/about-ONS/user-engagement/consultations-and-surveys/archived-consultations/2012/owner-occupiers-housing-costs/index.html>

⁶ The new private housing rental data will also be used to measure private housing rents in the CPI, CPIH, RPI and RPIJ from February 2013 onwards.

OOH Sample

In 2012 a sample of almost 500,000 properties for England, 12,500 properties for Wales and 14,000 properties for Scotland were used to calculate a private housing rental index. A subset of these properties⁷ were used to calculate the OOH index.

Table 1 below details the source of the data used in OOH. Private rental data from VOA are available from 2005 onwards. Private rental data from the Welsh and Scottish Governments are available from 2009 and September 2010 onwards respectively. Before this, the CPI/RPI unfurnished private rental series for Wales and Scotland have been used to calculate OOH. The CPI/RPI unfurnished private rental series for Northern Ireland is used in all years.

Table 1: Sources of data used in OOH

Year	England	Scotland	Wales	Northern Ireland
2005	VOA	CPI/RPI (unfurnished)	CPI/RPI (unfurnished)	CPI/RPI (unfurnished)
2006				
2007				
2008				
2009		Scottish Government (Sep 2010 onwards)	Welsh Government	
2010				
2011				
2012				

OOH Period covered

A cut off date of the 27th of the month is applied to the private housing rental dataset to enable monthly processing. Therefore, each month the data set covers the period from the 28th of the previous month to the 27th of the current month. Due to current data collection practices, data from VOA will be lagged by one month and possibly (though unlikely) more as it can take rental officers up to six weeks to input prices.

OOH Stratification

The data are stratified by Wales, Scotland, Northern Ireland and the nine regions of England; and also by property type to take into account the attributes that reflect price movements in the consumption of goods and services in an owner occupied dwelling. The property types used for stratification have been designed to reflect the characteristics an owner occupier would consider when purchasing a dwelling. They are:

- a. Detached
- b. Semi-detached
- c. Terraced
- d. Flat/Maisonette

⁷ Unfurnished properties are used to calculate OOH as they are more representative of the owner occupiers' housing market. Furnished properties are excluded from the OOH sample.

OOH Strata Weights

Strata weights are calculated from owner occupied stock data produced by the Department for Communities and Local Government (DCLG), combined with average rental price information calculated from the VOA, Welsh and Scottish Government datasets to calculate expenditure by stratum.

OOH Replacement and Imputation

There is no formal procedure in place for following up properties in England and Scotland, and there has only been a recent focus on following up properties annually in Wales. Therefore, it is assumed that rental prices for properties in England, Wales and Scotland remain valid for 18 months, unless the price gets updated before then. This assumption is based on a report from the Association of Residential Letting Agents (ARLA), which stated that 71% of tenancies last between 13 and 24 months⁸. If a price quote for a property becomes invalid then a comparable replacement property is sought. A replacement is defined as comparable if it has the same property type, postcode sector, number of bedrooms, furnished status (furnished/unfurnished) and has a price quote which is less than 50% higher and greater than 33% lower than the property being replaced.

OOH and CPIH Elementary Aggregate Formula

The Jevons (geometric mean) formula is used to aggregate private housing rental prices below the stratum level. The Jevons formula is used at the elementary level for over 70 per cent of items in CPIH.

CPIH compilation

Currently, the method of calculation, the population coverage and the basket of goods and services is the same as the Consumer Prices Index (CPI), with the exception of OOH. CPIH is constructed using the standard international COICOP classification system used by the CPI, OOH is included in the 'Housing, water, electricity, gas and other fuels' division in its own class which is called 'Imputed rentals for housing'. Readers interested in detailed explanations about its construction and basis should refer to the ONS's Consumer Price Indices Technical Manual⁹.

⁸ Figures taken from ARLA Members Survey Quarter 3 2011

⁹ The Consumer Price Indices Technical Manual, 2012 ONS: <http://www.ons.gov.uk/ons/rel/cpi/consumer-price-indices---technical-manual/2012-edition/index.html>

OOH component weight

The weight of OOH as a component of CPIH is outlined in Table 2 below. The weight is derived from the expenditure on imputed rents as measured in the UK's National Accounts (specifically Household Final Consumption Expenditure). These data are in turn derived from three sources; the Living Costs and Food Survey (household size, number of rooms, rent price), the Public sector accounts (rents and subsidies) and the DCLG (housing stock). As with all CPI and CPIH weights, the national accounts data come from two years prior to the current year (the latest available when the weights are being set) and are price updated to December of the previous year. For instance, for 2013, the underlying expenditure data refer to the 2011 calendar year and are price updated to reference period December 2012. Weights have been price updated using the CPI data for class 'imputed rentals for owner occupiers'.

Table 2: OOH component weight using the rental equivalence approach as a per cent of CPIH: 2005 – 2012*

Year	OOH as a per cent of CPIH using the RE approach ¹⁰
2005	10.0
2006	9.9
2007	10.5
2008	10.5
2009	10.7
2010	10.6
2011	10.7
2012	11.6

*Derived from UK National Accounts (Blue Book)

¹⁰ OOH component weights have been revised slightly since they were last published in the CPAC – 2012 Annual Report. This is due to a number of refinements made to the private housing rental index used to price update OOH weights (see footnote 11 for more information).

OOH, CPIH and CPI series

Figure 1 below shows the 12 month percentage change for OOH and the CPI from 2006 to 2012. From January 2006 to the beginning of 2009 OOH grew by approximately 1.5 per cent a year. In 2009 OOH rates of growth began to fall and reached its lowest point over the three month period from February to April 2010. The OOH index recovered to an average growth of 1.2 per cent from September 2011. OOH has increased at a slower rate than the CPI over this period.

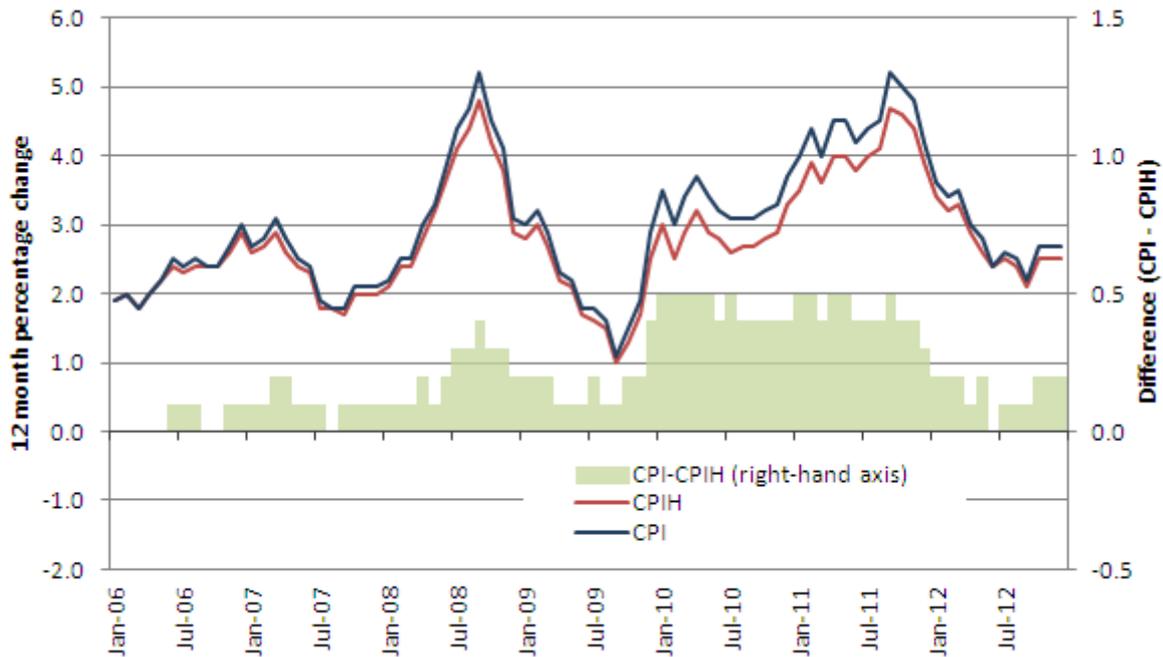
Figure 1: OOH¹¹ and CPI 12 month change 2006-2012



Figure 2 below compares CPIH and CPI from 2006 to 2012. Over the entire time period, CPIH is either lower than or equal to CPI. This is due to the OOH component which increased at a slower rate than CPI over this period. Between March 2010 and September 2011 the gap was widest reaching 0.5 percentage points on a regular basis. The average size of the gap from 2006 to 2012 is 0.2 percentage points.

¹¹ The OOH index and 12-month change has been revised since it was last published in the CPAC – 2012 Annual Report. This is due to a number of refinements made during the development of the private housing rental series. These include increasing the sample size for years 2005 to 2008 and refining the match key for making replacements.

Figure 2: CPIH¹² and CPI 12 month change 2006-2012



European Developments towards Measuring OOH

The Harmonised Index of Consumer Prices (HICP) was developed as a comparable measure of inflation by the European Statistical System (ESS). In the UK the HICP is known as the CPI. At the European level, the inclusion of OOH in the HICP is recognised as a high priority. The ESS has for many years been considering how OOH costs should be included in the HICP. This work is challenging given the lack of international consensus on how OOH costs should be included in a consumer prices index from a theoretical point of view. It is further complicated by difficulties in obtaining source data, and because of the very different housing markets across the European Union. ONS has been actively involved in the work at a European level for a number of years.

Over the last year, Eurostat has drafted and approved a regulation that will require Member States to produce a stand-alone OOH index using the net acquisitions approach with the potential for full inclusion in the HICP at some point in the future. The regulation will come into force in late 2014 requiring ONS to provide a standalone net acquisitions index from Q3 2014 onwards. At that time ONS would make the index available to all users. ONS is in a strong position to meet the requirements of this regulation. A decision on the inclusion of OOH in the HICP is due to be made by September 2017. As a first step towards the publication of an OOH index, Eurostat has started publishing an experimental House Price Index. The UK component of this index is based on the ONS House Price Index (formally the DCLG's House Price Index).

¹² The CPIH series has been revised since it was last published in the CPAC – 2012 Annual Report. This is due to a number of refinements made during the development of the private housing rental series (see footnote 11).

Future Developments

The CPI has a supplementary aggregate called CPIY, which excludes indirect taxes. ONS has developed a similar supplementary aggregate for CPIH (called CPIHY), which will also be available in the Consumer Price Indices Bulletin published in March.

CPIH is not constrained by EU legislation and so its methodology will be developed to meet UK users' needs, which could see further differences, beyond housing costs, from the CPI.

The focus of the Consumer Price Indices Bulletin will be reviewed by ONS after the UKSA assessment of consumer price statistics is complete in the summer of 2013.