

Compendium

Housing costs

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Release date:
15 December 2014

Next release:
To be announced

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1 . Section 6. Housing costs & inflation rates

While the results presented in Section 5 are consistent with the headline Consumer Prices Index (CPI) measure of inflation, they do not capture any costs of housing for those who either own their homes outright or have a mortgage. Census data suggests that owner-occupiers and owners with mortgages accounted for around 64% of the population in 2011 (ONS, 2014h), and for many of these households, the costs of housing are among their largest outlays each month. The exclusion of these costs is a shortcoming of our analysis – in particular as the prevalence of different forms of tenure will vary across different sub-groups of the population.

The appropriate treatment of housing costs in a price index is a matter of substantial debate (Leyland 2014, ILO 2004). In some cases – see, for example Crawford and Smith (2002) – it is argued that only renters and those with mortgages face changing prices for housing. It therefore follows that only expenditure on housing by this group (including both rentals and mortgage payments) should be included in an aggregate price index. For households that own their homes outright, no expenditure is recorded because changes in house prices do not affect their ‘cost of living’ in a given period. Other papers, for example Crawford (1994), argue that there is also a cost imposed on those who own their homes outright arising from the opportunity cost of investing in housing: the ‘user cost’ of housing.

2 . 6.1 CPIH and mortgage interest payments

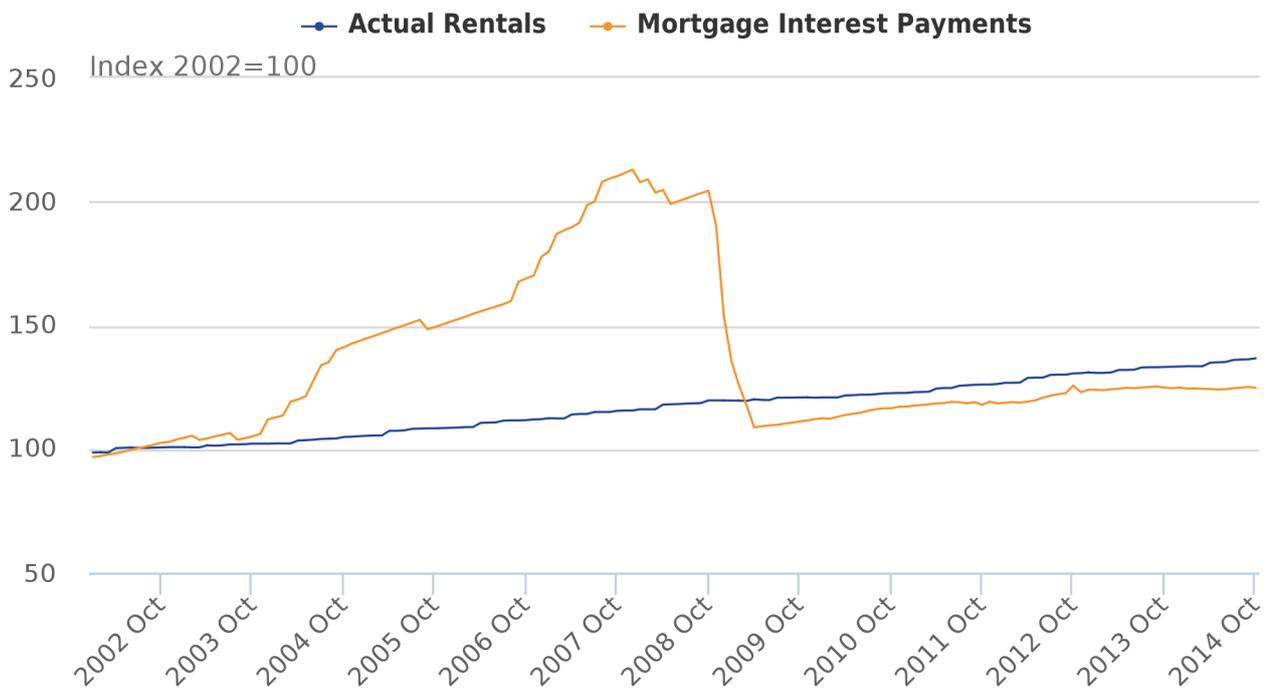
In line with EU legislation, the UK’s headline CPI measure includes the housing costs of those renting their home, but does not include the costs of owner occupation. ONS produces two alternative indices that do capture these costs. The first of these is CPIH, which includes the housing costs of all owner-occupiers – irrespective of how they bought their home – using the ‘rental equivalence’ approach (ONS, 2014a). This is the ONS’ preferred method for measuring owner occupiers’ costs. The ‘rental equivalence’ approach involves estimating how much it would cost for owner occupiers to rent their own home under present housing market conditions, and using this ‘weight’ alongside changes in average rentals. This is closest to the ‘user cost of housing’ approach outlined above, but is challenging to adapt to our micro-level dataset. In particular, it would require detailed, household-level data on the type and form of housing tenure and geographical location, as well as a set of representative weights.

The second index – the Retail Prices Index (RPI) – includes mortgage interest payments, rentals, housing depreciation and repairs & maintenance as items in its basket of goods and services. This ensures that the RPI and RPIJ (which uses the alternative, ‘Jevons’ method to produce its elementary aggregates – rather than the ‘Carli’, which is used in the RPI) both reflect some of the housing costs experienced by both renters and owner occupiers. However, adapting this approach – and in particular producing household-level estimates of housing depreciation – is also analytically challenging.

In an effort to incorporate some of the costs that owner occupiers face, Section 3.2 and the Reference Tables outline a further set of expenditure weights which incorporates estimates of spending on each class-level item of the Classification of Individual Consumption According to Purpose (COICOP) from the Living Costs and Food Survey (LCF) with mortgage interest payments. While we recognise that this only reflects the cost of repaying a loan and fails to capture many of the costs associated with owner occupation, in particular for households who do not have mortgages, it allows us to consider a broader measure of housing costs. Repayments on the capital borrowed are not included, as these are considered to be a form of saving or investment. This section sets out the results of using this alternative set of weights. Users should note that the results of this section are not comparable with the CPI, CPIH or RPI for a range of definitional reasons: in particular as the definition of housing costs used here differs from that employed in all of these measures, and as insurance payments are included on a gross, rather than net basis.

Introducing mortgage interest payments naturally has a substantial impact on the expenditure weights for households with mortgages. On this basis, mortgage interest payments account for around 5.5% of all expenditure – only slightly lower than the 6.3% weight that actual rentals receive. As a consequence, movements in the price indices for actual rentals and mortgage interest payments can have a large impact on the aggregate price experience of households. Figure 6.1 below shows the corresponding price indices, taken from the respective CPI and RPI components. While the price of actual rentals has increased gradually over time, there was a large fall in the ‘price’ of mortgage interest payments in 2009. This corresponds to the fall in the base rate set by the Bank of England in response to the financial market shock and the reduction in house prices over this period.

Figure 6.1: Price indices for COICOP class 4.1.1 Actual Rentals and RPI Mortgage Interest Payments; 2002 = 100

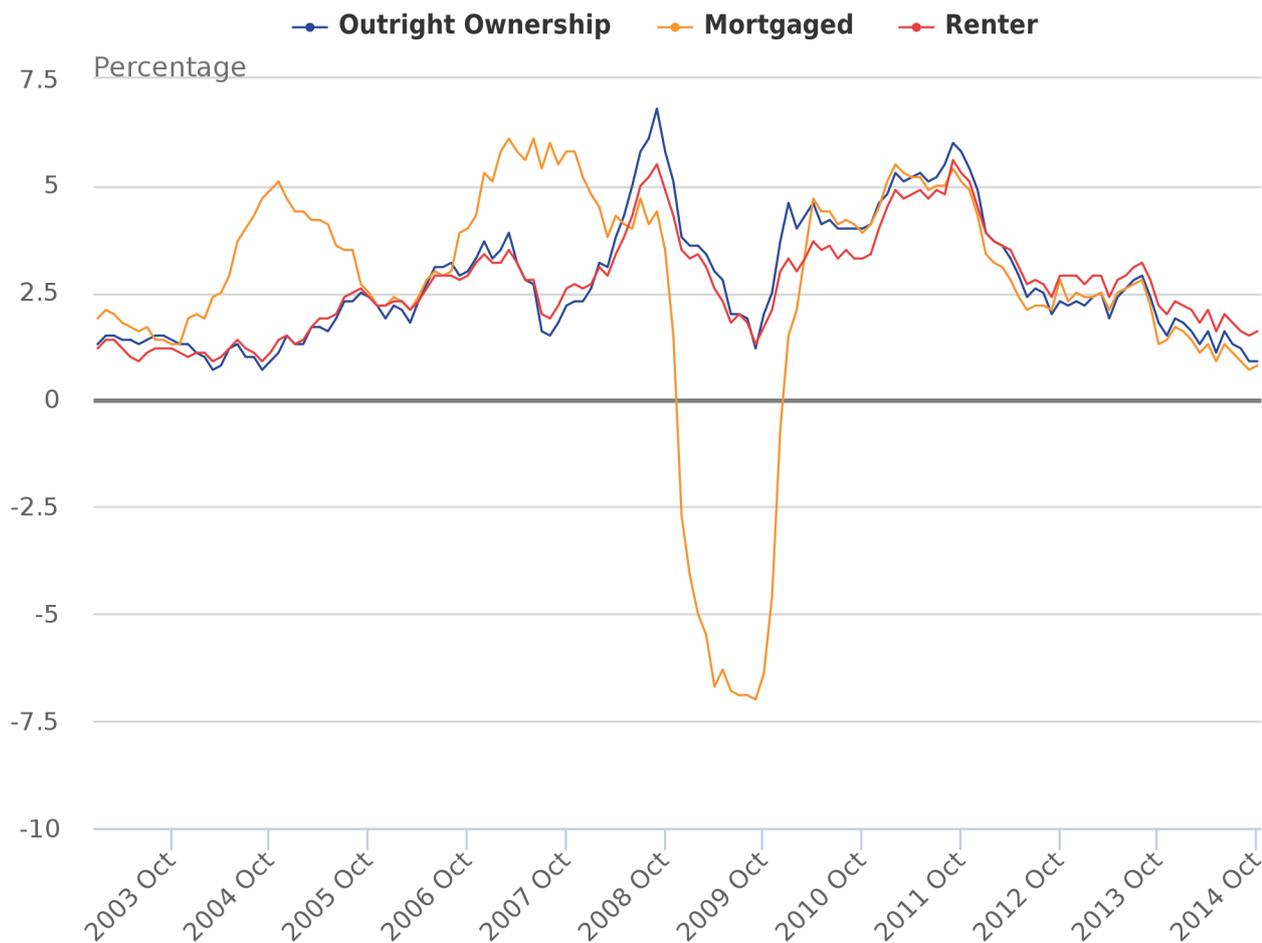


Source: Office for National Statistics

3 . 6.2 Results

How does this impact on the inflation rate experienced by renters, those with mortgages and those who own their homes outright? Figure 6.2 shows the inflationary experience for these groups in the period 2003 to 2014 on a monthly basis. While owners with mortgages experienced higher inflation in the period 2003 to 2007 – as the price of mortgage interest payments rose at a faster rate than those for actual rentals – these households saw a sharp fall in their inflation rate to a low of -7.0% in September 2009, caused by the large fall in the price series associated with mortgage interest payments. In the most recent period, households in all three groups have experienced similar rates of inflation as the price of mortgage interest payments and actual rentals have risen at similar rates. Over the period as a whole, owners with mortgages experienced a slightly lower rate of inflation at 2.4% than either renters or owner occupiers (2.6%)¹.

Figure 6.2: Annual inflation rates for renters, owners with mortgages and those who own their homes outright, including mortgage interest payments; %



Source: ONS Calculations

Notes:

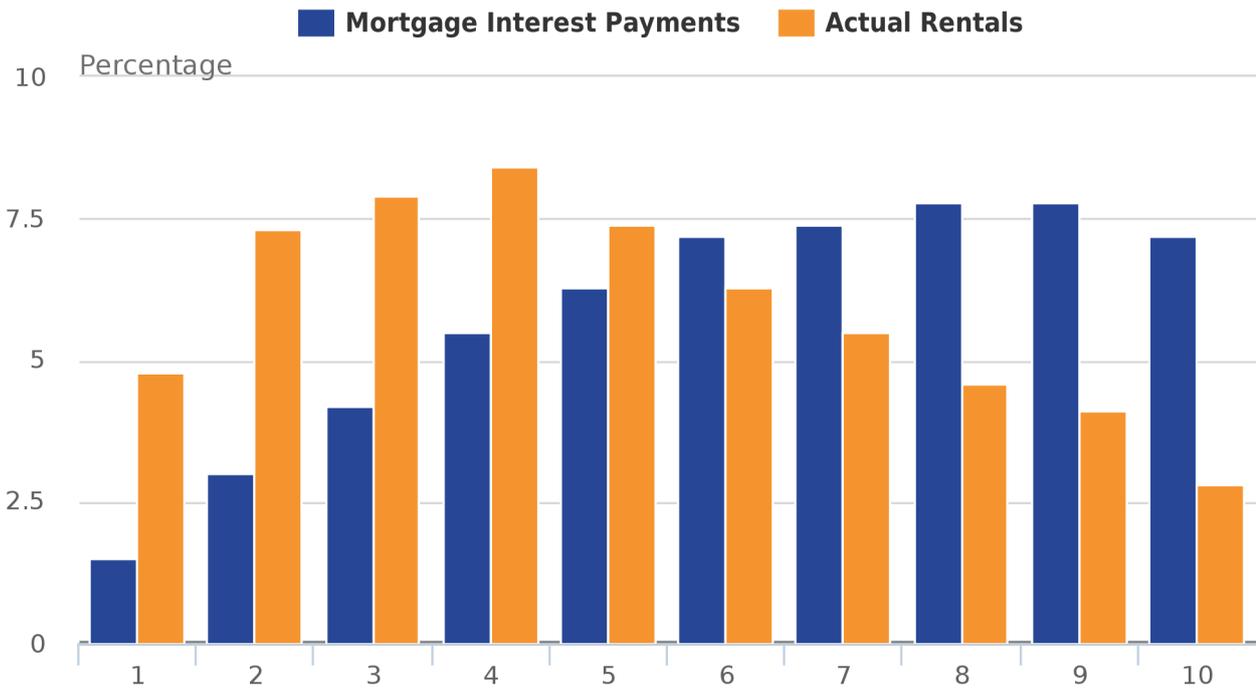
1. Inflation rates calculated using mortgage interest payments are not comparable to CPI estimates. See Sections 3 and 6 for more details

While Figure 6.2 highlights the effect of introducing some housing costs for mortgaged owner occupiers on three sub-groups of the population, the impact on other sub-groups – including expenditure deciles, households with and without children and retired and non-retired households – will vary depending on the prevalence of different tenure forms in each group. The remainder of this section sets out the inflation experience of different household types using this alternative set of expenditure weights.

6.2.1 Inflation rates by expenditure decile, including mortgage interest payments

Figure 6.3 below shows the share of total expenditure which is accounted for by actual rentals and mortgage interest payments in each equivalised expenditure decile². First, the lowest-expenditure decile spends the least on housing: together, mortgage interest payments and actual rentals account for 6.3% of total expenditure in this group, compared with 13.9% in the 4th expenditure decile. This may reflect a larger number of households living in social housing in this group – for whom housing benefit covers the costs of rent, or a high prevalence of retired households in the lower expenditure group – who are more likely to own their homes outright (see Section 6.2.2). Secondly, renting is more prevalent among the lower expenditure deciles than higher expenditure deciles: the latter spend more on mortgage interest payments on average.

Figure 6.3: Expenditure shares of mortgage interest payments and actual rentals, by equivalised expenditure deciles; %, average 2002 – 2014



Source: Living Costs and Food Survey, ONS Calculations

Notes:

1. Equivalised expenditure deciles (1 = lowest-expenditure households, 10 = highest-expenditure households)

These inter-decile differences in spending on housing have an impact on the inflation experience of each group. Table 6.1 shows the annual inflation rate experienced by each of the expenditure deciles in the period 2003 to 2013. The higher expenditure deciles, which contain more owners with mortgages, and who are consequently more exposed to changes in the interest rate, experience negative inflation rates in 2009 as a result of the interest rate reduction. In particular, the 9th expenditure decile experiences an inflation rate of -3.0% in 2009, which is consistent with the fact that the 9th decile has the highest share of expenditure accounted for by mortgage interest payments.

Table 6.1: Annual inflation rates for equivalised expenditure deciles, including mortgage interest payments %

Year	Equivalised Expenditure Decile									
	1	2	3	4	5	6	7	8	9	10
2003	1.7	1.7	1.7	1.6	1.7	1.6	1.7	1.4	1.5	1.3
2004	2	2	2.3	2.5	2.6	2.7	2.7	2.7	2.4	2.2
2005	3.1	2.9	3	2.9	3	3	3	2.8	2.6	2.4
2006	5	4.1	3.8	3.6	3.5	3.1	3.1	2.9	2.6	2.4
2007	4.1	3.8	4.1	4.2	4.3	4.4	4.3	4.3	4.4	4.2
2008	6.7	5.9	5.3	4.8	4.6	4.2	3.8	3.6	3.3	3.1
2009	3.6	2.1	0.9	-0.4	-0.9	-1.7	-2.1	-2.7	-3	-2
2010	3.2	3.6	3.7	3.9	4	4.1	3.9	4	4	3.6
2011	5.8	5.6	5.5	5.4	5.4	5.3	5.3	5	5	4.6
2012	3.7	3.4	3.1	3	2.8	2.8	2.7	2.6	2.6	2.6
2013	3.2	2.8	2.6	2.5	2.4	2.3	2.3	2.1	2.2	2.4
Average	3.8	3.5	3.3	3.1	3	2.9	2.8	2.6	2.5	2.4

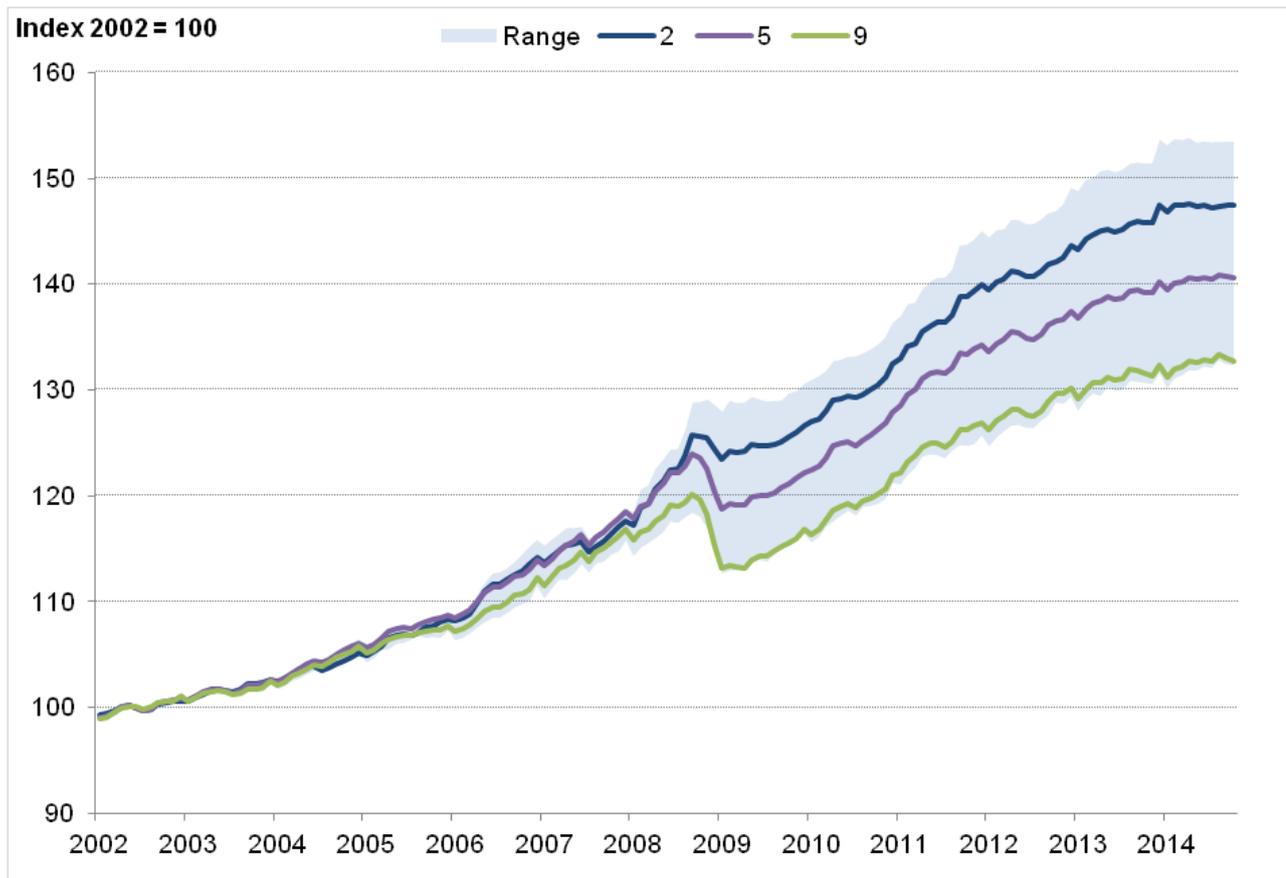
Source: Office for National Statistics, ONS Calculations

Notes:

1. The average presented is the compound average annual growth rate, and consequently may differ from the arithmetic average of the inflation rates presented.
2. These results are not comparable with the analysis presented in Section 5, which is on a CPI-consistent basis. Differences between the inflation rates presented here include both mortgage interest payments and a range of other differences arising from differences in measurement between the LCF and the National Accounts. See Section 3 for more details.

How these differences in the annual inflation rate have affected the evolution of prices over time is shown in Figure 6.4. The effect of the fall in interest rates can be seen more clearly as the rate of price growth between 2008 and 2009 drops for expenditure deciles 4 to 10: groups that contain relatively large proportions of mortgaged home-owners. The introduction of these housing costs increases the spread of inflation rates between the 2nd and 9th expenditure deciles, opening a cumulative gap of over 10 percentage points which persists for the rest of the period. As in Section 5, the lowest-expenditure decile sees a much greater change in prices over the period compared with the highest-expenditure decile. It is important to note however that these households will only have experienced these differences if they were consistently placed in a given equivalised expenditure decile through time. As households may move between expenditure deciles through their life-cycle, the cumulative price impact presented in Figure 6.4 may not reflect their experience in aggregate precisely.

Figure 6.4: Range of cumulative price changes for equivalised expenditure deciles, selected expenditure deciles, including mortgage interest payments; 2002 = 100



Source: ONS Calculations

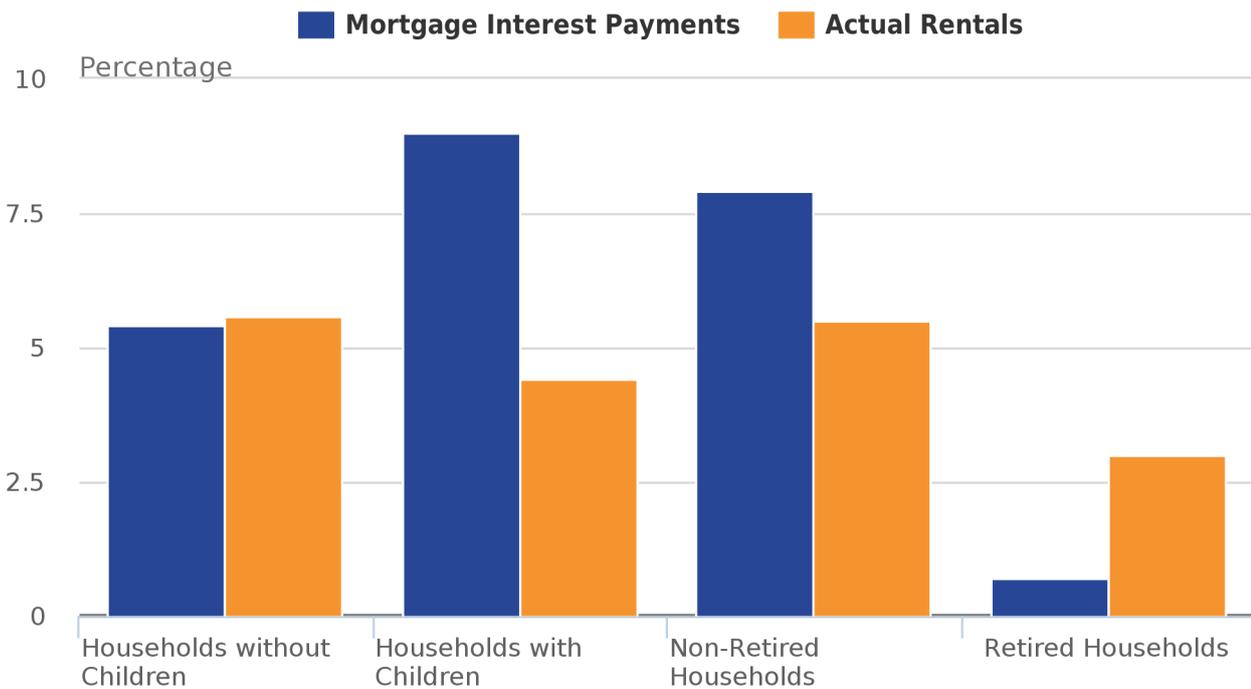
Notes:

1. Figure shows the range of cumulative price change experienced by expenditure deciles between 2002 and October 2014. These results are not comparable with the analysis presented in Section 5, which is on a CPI-consistent basis. Differences between the inflation rates presented here, and in Table 6.1 above, include both mortgage interest payments and a range of other differences arising from differences in measurement between the LCF and the National Accounts. See Section 3 for more details.

6.2.2 Inflation rates for households with and without children, and retired and non-retired, including mortgage interest payments

Introducing mortgage costs in this manner also has an impact on the inflation experience of different household types. Figure 6.5 shows the share of expenditure accounted for by rentals and mortgage interest payments for households with and without children (Panel A), and for retired and non-retired households (Panel B). Panel A indicates that while rent and mortgage interest payments take equal weight for households without children, among households with children, mortgage interest payments carry more than twice the weight of rentals. Panel B highlights the greater exposure of non-retired households to housing costs – perhaps indicating that retired households are more likely to own their home outright.

Figure 6.5: Expenditure share for mortgage interest payments and actual rentals, for households with and without children (Panel A) and retired and non-retired households (Panel B); %, average 2002 – 2014



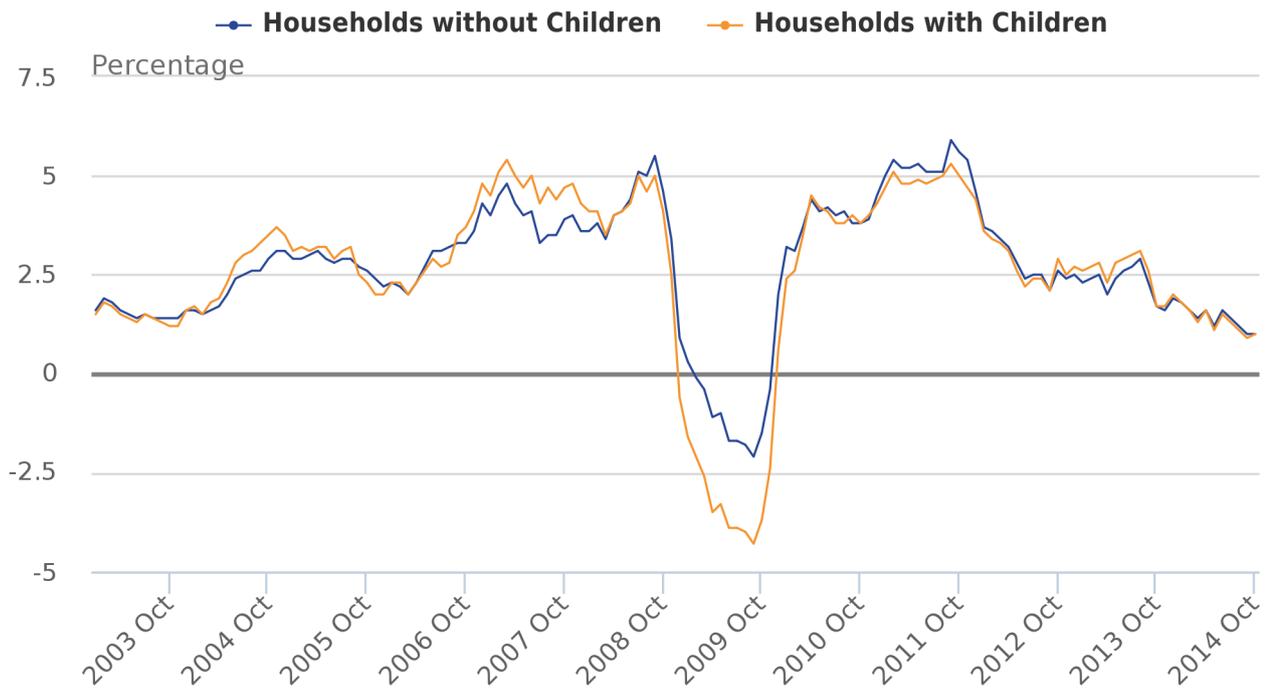
Source: Living Costs and Food Survey

Notes:

1. Panel A - Households without children, Households with Children. Panel B - Non-Retired Households, Retired Households

These differences in weights affect the inflation rates experienced by these different household types. Figure 6.6 below shows the annual inflation rates for households with and without children, after incorporating mortgage interest payments. As households with children are more exposed to changes in the interest rate through greater expenditure on mortgage interest payments, they benefitted from the fall in interest rates in 2009 to a greater extent. Between 2008 and 2012, their inflation rate was generally below that of households without children, although this pattern appears to have been reversed since late 2012 – when higher university tuition fees in particular appear to have pushed up the inflation rate for households with children. Over the period as a whole, prices for both groups have risen by a broadly similar amount.

Figure 6.6: Annual inflation rates for households with and without children, including mortgage interest payments; %



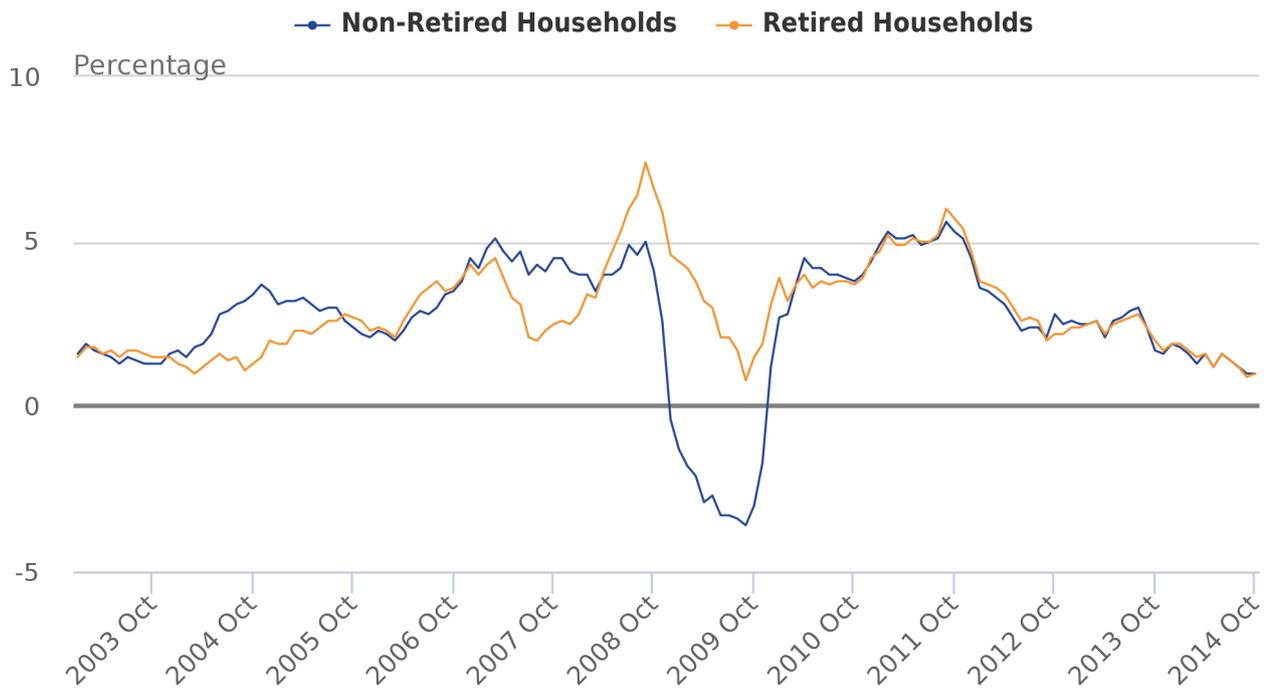
Source: ONS Calculations

Notes:

1. Inflation rates calculated using mortgage interest payments are not comparable to CPI estimates. See Sections 3 and 6 for more details

While on this basis the cumulative impact of inflation rate differentials between households with and without children is relatively modest, their impact on the relative experiences of retired and non-retired households is more substantial. Figure 6.7 below shows the inflation rate for these groups after including mortgage interest payments. As mortgage interest payments carry a larger expenditure weight for non-retired households, this group experienced a much larger fall in inflation in 2009, to a low of -3.6% in September 2009. However, non-retired households also experienced a higher rate of inflation for most of the period 2003 to 2007, while both groups have experienced broadly similar inflationary pressure in recent years.

Figure 6.7: Annual inflation rates for retired and non-retired households, including mortgage interest payments, %



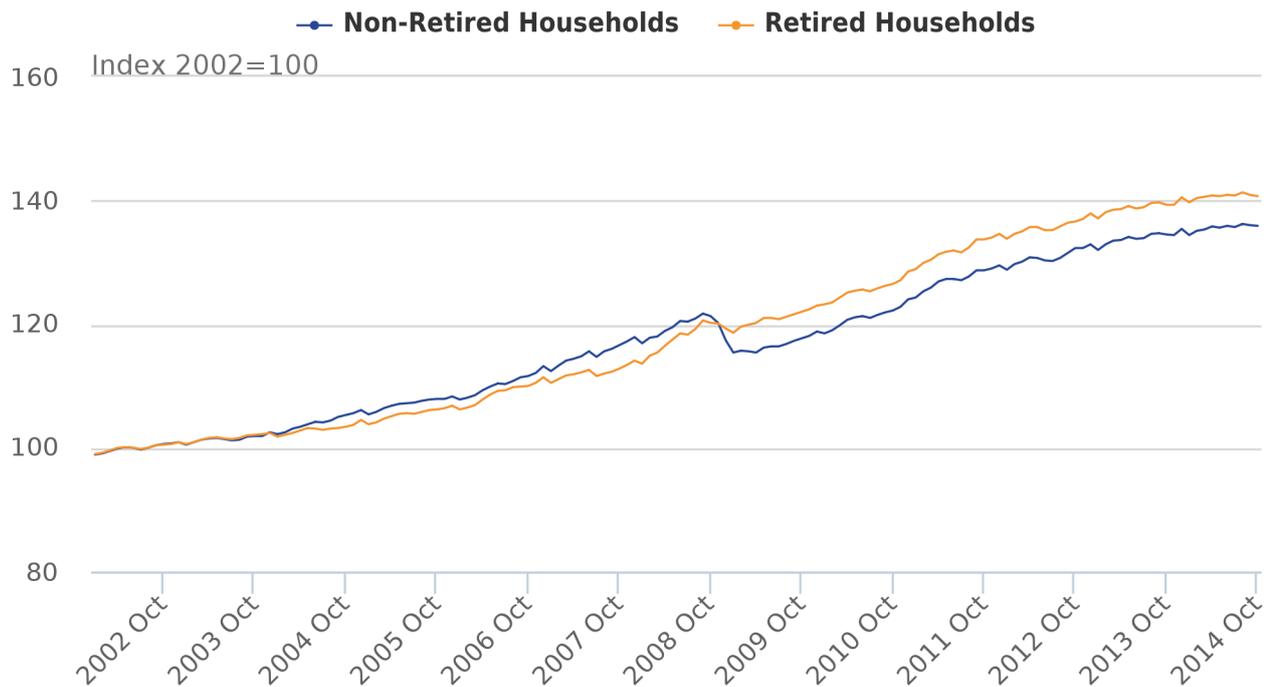
Source: ONS Calculations

Notes:

1. Inflation rates calculated using mortgage interest payments are not comparable to CPI estimates. See Sections 3 and 6 for more details

The cumulative impact of these annual rates of inflation is shown in Figure 6.8. As retired households did not benefit as much from the fall in interest rates, the price experience of these sub-groups diverged in 2009, and the gap has persisted over the following five years. Prices have risen for retired households by 40.7% in the period 2002 to October 2014, while prices for non-retired households have risen by 35.9% over the same period.

Figure 6.8: Cumulative price changes for retired and non-retired households, including mortgage interest payments, 2002 = 100



Source: ONS Calculations

Notes:

1. Figure shows the range of cumulative price changes of products purchased by the respective groups between 2002 and October 2014. These results are not comparable with the analysis presented in Section 5, which is on a CPI-consistent basis. Differences between the inflation rates presented here, and in Table 6.1 above, include both mortgage interest payments and a range of other differences arising from differences in measurement between the LCF and the National Accounts. See Section 3 for more details.

Notes for 6.2 Results

1. The average presented is the compound average annual growth rate, and consequently may differ from the arithmetic average of the inflation rates presented.
2. For each dataset listed in Section 3.2, equivalised expenditure deciles are created based on the respective measure of expenditure. In this section, expenditure based on the LCF and mortgage interest payments is used to create the expenditure deciles.

4. Background notes

1. Details of the policy governing the release of new data are available by visiting www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html or from the Media Relations Office email: media.relations@ons.gsi.gov.uk