

Article

Effect of reweighting the consumer prices basket during the coronavirus (COVID-19) pandemic: April to September 2020

The effects of reweighting the UK consumer prices inflation basket accounting for changes in consumption patterns during the coronavirus (COVID-19) pandemic on the 12-month growth rates of the Consumer Prices Index including owner occupiers' housing costs (CPIH) and the Consumer Prices Index (CPI).

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1 . Main points

- For July to September 2020, reweighting the consumer prices inflation basket to account for changes in consumption patterns made little difference to the 12-month growth rates of the Consumer Prices Index including owner occupiers' housing costs (CPIH) and the Consumer Prices Index (CPI).
- Contributions from each division show more variation with positive and negative contribution differences largely offsetting each other.
- At the beginning of the coronavirus (COVID-19) pandemic, larger contributions from some divisions were driven more by the reduction in total expenditure than by increased expenditure in those divisions, but this effect has reduced over time as expenditure has risen again.
- Total expenditure in September 2020 is estimated to have been around 98% of the expenditure assumed in the official series.
- Previous analysis has focused on a direct comparison of the reweighted series with the published series; however, updating baskets over an extended period of time in this way can lead the series to "drift" from its fixed basket counterpart; therefore, to eliminate impacts that are caused by differing methodologies, this new analysis compares the reweighted basket series with a series based on the official weights but using a comparable methodology (referred to in this article as 're-chained').

2 . Overview

For July to September 2020, reweighting the Consumer Prices Index including owner occupiers' housing costs (CPIH) basket to account for changes in consumer spending patterns made very little difference to the 12-month growth rate when compared with the re-chained official series. Differences in the contributions made by each division largely offset one another although most divisions did see some difference in contribution between the reweighted and re-chained official baskets. The largest upward difference came from housing and household services while the largest downward difference came from restaurants and hotels.

Differences in weights and contributions during the coronavirus (COVID-19) pandemic reflect both changes in spending in each division and changes in total consumer expenditure each month. At the beginning of the pandemic the effect of the difference in total expenditure was pronounced, as total expenditure fell by around 35%, but this has gradually decreased over subsequent months.

3 . The reweighting process

In August 2020, we published experimental series looking at [the impact of changing consumer spending patterns on consumer price inflation during the coronavirus \(COVID-19\) pandemic](#).

Social distancing policies, movement restrictions and changing consumer behaviour has led to some items being unavailable and expenditure on others changing significantly since April 2020. The weights used for the official consumer price statistics are fixed during the calendar year, however, to try to capture the impact of these changes we constructed an alternative measure of inflation, changing our expenditure weights each month to remove unavailable items and adjust the weight of remaining items according to our best available evidence of consumption patterns.

In order to adjust weights from month to month to reflect changing consumer spending patterns it is necessary to link price changes between the latest month and the previous one onto the old series, a process called "chain-linking". This only takes place yearly for the official series for the Consumer Prices Index including owner occupiers' housing costs (CPIH) and the Consumer Prices Index (CPI).

In our previous article we compared the growth rates for the reweighted basket with those for the official published series of CPIH and CPI rather than the comparably chain-linked version of the official series. This was done for simplicity and because at the time there was little difference between the official rates and the re-chained rates. Frequent chain-linking can lead to “chain-drift”, where the chained measure differs from an equivalent direct measure. Over time, chain-drift can accumulate, and this has caused increasing differences between the official rate and the re-chained official rate, meaning that it would no longer be appropriate to draw direct comparisons between the reweighted basket and the official published rate.

For comparability it is therefore necessary to create another version of the official series, chain-linked monthly on a consistent basis with the reweighted series. The full methodology for this is outlined in [Re-weighted consumer prices basket – adjusting for consumption changes during lockdown: July 2020](#).

This is also the reason that monthly weight changes were not used in the official CPIH and CPI series, as chain-drift causes movements in the inflation rate that are unrelated to price movements and would give a misleading impression of price growth over the period.

4 . Results

Table 1 shows the 12-month growth rates of the reweighted basket minus the 12-month growth rates of the re-chained measures for both the Consumer Prices Index including owner occupiers' housing costs (CPIH) and the Consumer Prices Index (CPI). This approach has been taken to put the reweighted basket and official measures on a methodologically consistent basis, to isolate the impact of changing consumer spending patterns.

For August and September 2020, there was no difference in the 12-month growth rates for CPIH between the reweighted basket and the re-chained official measure, while in July 2020, prices in the reweighted basket grew by around 0.02 percentage points more on the year than the comparable official series did.

For CPI, 12-month growth rates for the reweighted basket were lower than for the comparable official series each month in Quarter 3 (July to Sept), ranging from 0.01 percentage points lower in July 2020 to 0.05 percentage points lower in September 2020.

Table 1: Difference between 12-month growth rates for reweighted and re-chained official measures of CPIH and CPI
UK, April 2020 to September 2020

Percentage points

	April	May	June	July	August	September
CPIH	0.07	0.12	0.10	0.02	0.00	0.00
CPI	0.00	0.06	0.04	-0.01	-0.03	-0.05

Source: Office for National Statistics - Consumer Price Index including owner occupiers' housing costs and Reweighted consumer prices basket

Notes

1. Calculated as contribution to reweighted minus contribution to re-chained.

Although the all item 12-month growth rates for the reweighted basket have been very similar to the comparable official series over the last three months, there have nonetheless been offsetting effects from specific divisions that have differed between the two series.

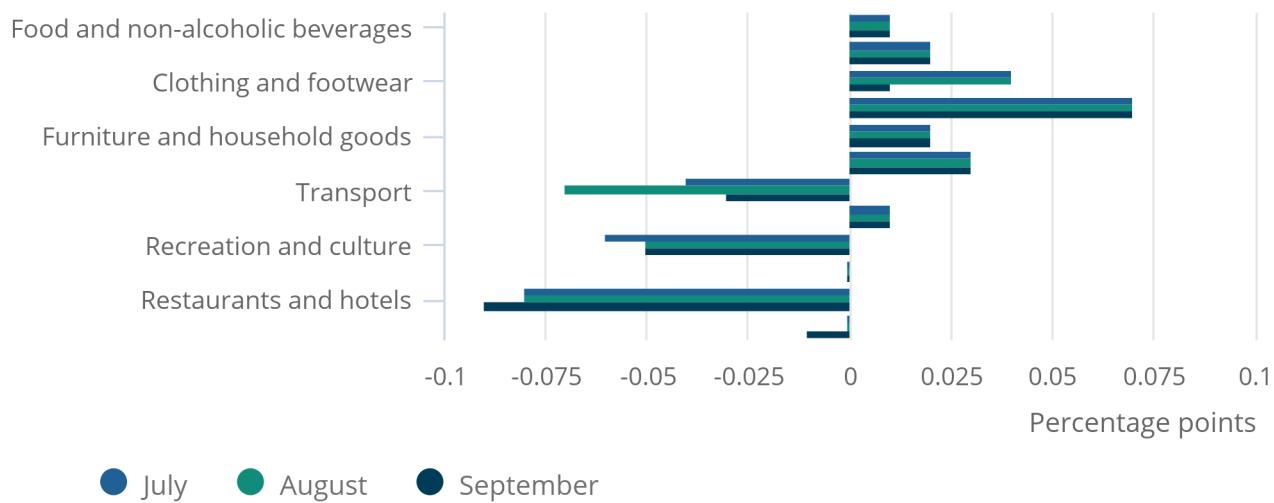
Figure 1 shows the difference between the contributions each division of CPIH made to the 12-month growth rates of the reweighted and the re-chained official series each month from July to September 2020. A positive difference means that the division made a higher contribution to the 12-month growth rate of the reweighted series than the comparable official series, while a negative difference means the contribution to the growth rate for the reweighted series was lower.

Figure 1: Difference in contributions to the 12-month growth rate of CPIH between reweighted and re-chained official series by division,

UK, July to September 2020

Figure 1: Difference in contributions to the 12-month growth rate of CPIH between reweighted and re-chained official series by division,

UK, July to September 2020



Source: Office for National Statistics - Consumer Price Index including owner occupiers' housing costs and Reweighted consumer prices basket

Notes:

- Calculated as contribution to reweighted minus contribution to re-chained.

Data for the reweighted basket show that, for each of the last three months, a higher proportion of consumer spending went on food and non-alcoholic beverages, alcohol and tobacco, clothing and footwear, housing and household services, furniture and household goods, health and communication than is assumed in the CPIH and CPI baskets. However, a lower proportion was spent on transport, recreation and culture, and restaurants and hotels.

This increased proportion does not necessarily correspond to higher overall spending as it also reflects differences in the amount of total expenditure between the official basket and the reweighted basket. This is illustrated in Table 2, which shows the weights for each division of CPIH for each month since the reweighted series began in April 2020 and the weight for each division in the fixed-weight official basket.

Table 2 shows the total expenditure assumed each month, as a proportion of the February expenditure, which is carried forward for the rest of the year in the official series. Usually, total expenditure does not change considerably over the year so a fixed approach is most appropriate but, during the pandemic, total consumer expenditure has changed substantially.

Table 2: Divisional weights for official and reweighted baskets, and total expenditure, UK
UK, April 2020 to September 2020

Division	Normal weights	April	May	June	July	August	September
Food and non-alcoholic beverages	79	132.58	126.09	108.95	88.50	88.54	81.48
Alcohol and tobacco	32	59.88	49.38	42.31	35.2	35.21	30.18
Clothing and footwear	51	26.55	29.24	42.13	42.24	45.28	44.26
Housing and household services	296	462.70	433.15	372.11	320.81	313.91	295.73
Furniture and household goods	50	35.93	44.13	59.23	58.33	57.35	56.33
Health	22	19.74	20.45	24.38	26.15	25.15	26.15
Transport	120	51.41	70.01	109.64	130.74	118.72	166.98
Communication	17	26.73	25.22	22.21	19.11	19.12	17.1
Recreation and culture	136	65.83	75.97	84.32	100.78	101.71	97.78
Education	24	39.56	35.72	30.67	27.15	25.15	24.14
Restaurants and hotels	96	9.90	12.71	20.4	68.54	90.37	83.44
Miscellaneous goods and services	77	69.19	77.93	83.63	82.47	79.48	76.45
Total expenditure as a proportion of February total		65.27	68.57	80.87	90.19	92.35	98.36

Source: Consumer Prices Index including owner occupiers' housing costs and Reweighted consumer prices basket

In April 2020, total consumer expenditure fell considerably to around 65% of the usual expenditure level and has gradually risen each month since to reach around 98% of February's expenditure in September 2020. This likely reflects the initial impact of restrictions imposed from the end of March 2020 when non-essential businesses were closed, and employees were encouraged to work from home if possible. At that time spending on transport, for example, fell sharply as people made fewer journeys, while spending on recreation and culture, and restaurants and hotels fell as many items within those divisions were unavailable. Spending on some other items increased, such as food and non-alcoholic beverages, and alcohol and tobacco. Alcohol here refers to alcohol bought from retailers, not from restaurants and bars, and likely increased as many restaurants and bars were closed.

Although overall spending between April and September has increased again to levels similar to February, there remain differences in the make-up of that spending as some restrictions continue and consumer behaviour has changed. For example, spending on recreation and culture remains lower than it was before the pandemic and spending on restaurants and hotels has fallen back in September after partially recovering in August [when the Eat Out to Help Out scheme was in effect](#).

Some parts of the basket are assumed to have relatively fixed levels of expenditure, such as education, and housing and household services. Weights for these divisions rose sharply in April as this expenditure represented a considerably higher proportion of total spending. Over the subsequent months, these weights have gradually fallen as total expenditure has increased again to near normal levels in September 2020.

These results show that, while the 12-month growth rate of the reweighted basket has recently been the same as the re-chained official rate, there remains considerable variation in the scale and make-up of consumer spending compared with the pre-pandemic period.

5 . Related links

[Re-weighted consumer prices basket – adjusting for consumption changes during lockdown: July 2020](#)

Article | Released 19 August 2020

Constructing an alternative consumer price inflation measure removing the impact of unavailable items and taking account of changes in consumer spending patterns over Quarter 2 (Apr to June) 2020 as the UK lockdown and subsequent easing took hold.

[Impacts of Eat Out to Help Out on consumer prices: August 2020](#)

Article | Released 21 October 2020

How the Eat Out to Help Out scheme and reduction in Value Added Tax for restaurants have affected movements in UK consumer price inflation for August 2020.

[Consumer price inflation basket of goods and services: 2020](#)

Article | Published 16 March 2020

The review process for the items making up the inflation basket used to calculate the UK consumer price inflation indices and how and why the various items in the basket are chosen.

[Consumer price inflation, UK](#)

Bulletin | Monthly

Price indices, percentage changes and weights for the different measures of consumer price inflation.