

Inflation can be measured in a number of ways. The Central Bank's inflation target is based on the consumer price index (CPI), but there are other inflation measures in use in Iceland, including the CPI excluding housing (CPIXH) and the Harmonised Index of Consumer Prices (HICP). The difference from one index to another lies in which goods and services are included in the consumption basket on which price measurements are based and how they are weighted in the basket.

As Chart 1 indicates, these measures have given divergent inflation figures in the recent past. The greatest difference is that the basket on which the CPI is based includes expenses related to owner-occupied housing, among them imputed rent, which measures the cost of living in one's own home as if it were a rented property. Changes in the market value of housing affect the index through this component. Both the CPIXH and the HICP measure inflation without house prices, however.<sup>1</sup> These two measures usually track one another quite well, but in spring 2016, they began to diverge. The difference was greatest during the summer, at nearly 2 percentage points, and then began to narrow again in the autumn. This Box focuses on the reasons for the divergence in these two measures of inflation in the past year.

### Wherein lies the difference?

In order to measure developments in prices, Statistics Iceland gathers information on the price of thousands of products each month. All three price indices are calculated from the same price measurements but using different weights (Statistics Iceland, 2013). The expenditure weights for the CPI (with and without housing) are determined by Statistics Iceland's expenditure study. The weights for the HICP are also based on Statistics Iceland's expenditure study but are adjusted with reference to information from national accounts and value-added tax returns so that they will cover all consumption spending in Iceland, not just that of Icelandic households. The composition of foreign tourists' consumption spending in Iceland therefore affects the expenditure weights of the HICP but not the CPI and the CPIXH. The aim of this method of measuring the price level is to facilitate comparison between countries by measuring inflation in European Economic Area (EEA) member states in a consistent manner, using the method devised by the EU statistical bureau, Eurostat (see, for example, European Central Bank, 2017).

The travel and transport component is the largest single subcomponent in the HICP, with a weight of about one-fourth (Chart 2). Its weight in the CPIXH is less, however, at 20%. The composition of the subcomponent also differs considerably. Air transport carries a weight of 2% in the CPIXH, as opposed to 6% in the HICP. Because airfares are a relatively large spending item for tourists visiting Iceland, they carry more weight in the HICP. For the same reason, there is a significant difference in the weight of the hotel and restaurant subcomponent, which carries a weight of 7% in the CPIXH but a 10% weight in the HICP. Of that amount, the weight of accommodation, including the services of hotels and guest-houses, is almost ten times more in the HICP than in the CPIXH.

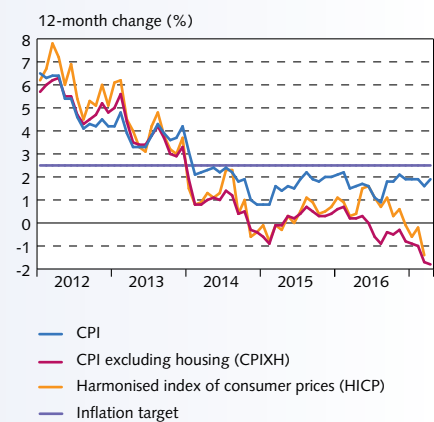
The indices also differ in the treatment of various items relating to housing costs. Because the CPIXH is intended to measure developments in prices excluding the impact of housing, only the electricity and heat subcomponent is included in it. The HICP, however, is intended to measure developments in the general price

1. The difference between the CPI on one hand and the CPIXH and HICP on the other hand was discussed in Box 2 in *Monetary Bulletin* 2016/4.

## Box 2

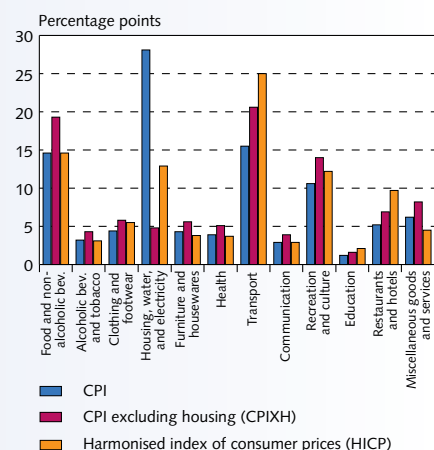
### The surge in tourism and its divergent effects on various measures of inflation

Chart 1  
Various measures of inflation  
January 2012 - April 2017



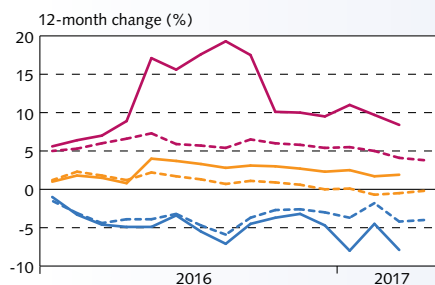
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 2  
Comparison of weights in the CPI and HICP  
The year 2016



Sources: Statistics Iceland, Central Bank of Iceland.

Chart 3  
Subcomponents of the CPIXH and the HICP<sup>1</sup>  
January 2016 - April 2017



— Transport  
— Restaurants and hotels  
— Recreation and culture

1. Solid lines represent components of the HICP, and broken lines represent components of the CPIXH.  
Source: Statistics Iceland.

level and therefore includes items such as paid rent and home maintenance, which are omitted from the CPIXH.<sup>2</sup>

### Recent developments

This difference in the handling of expenditures relating to housing can cause inflation to differ according to which index – CPIXH or HICP – is under consideration. But this is not the main reason for the recent divergence in the two measures, as the difference between the housing component of the two indices has been narrowing in the past year.

The main reason for divergent developments in inflation in 2016 lies rather in the steep rise in accommodation prices during the peak tourist season. Since the beginning of 2016, the twelve-month increase in the hotel and restaurant subcomponent has been about 5-7% in the CPIXH, while in the HICP it peaked at nearly 20% last August (Chart 3). The difference stems from the surge in accommodation prices, which carry more weight in the HICP, as is mentioned above. Since May 2016, accommodation has contributed an average of 1 percentage point more to twelve-month inflation as measured by the HICP than to inflation in terms of the CPIXH. In addition, the price of domestic package tours has risen markedly, which explains why the recreation and culture subcomponent rose more in the HICP. Offsetting this, however, the decline in fares weighs heavier in the HICP than in the CPIXH.

### References

Statistics Iceland (2013). Metadata: Harmonised Index of Consumer Prices (HICP). *Statistics Iceland*.  
European Central Bank (2017). Measuring inflation – the Harmonised Index of Consumer Prices (HICP). European Central Bank website.

2. Because of a lack of data for the calculation of imputed rent in several EU countries, this item is omitted from the calculation of the HICP so as to facilitate comparison across countries. Work is underway to correct this, with the aim that in the future the HICP will measure the cost of owner-occupied housing through the imputed rent component.