



# **BANK OF FINLAND BULLETIN**

**BANK OF FINLAND ARTICLES ON THE ECONOMY**

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# Measures of core inflation filter out temporary price changes

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Much of the movement in consumer prices is made up of short-lived volatility. This makes it harder to monitor price pressures within the economy. Measures of core inflation aim to keep track of price developments that are not driven by temporary factors. Core inflation can be derived from price indices, either by omitting particularly volatile product groups from the index or by weighting product groups based on their statistical properties. Because responding to short-term price fluctuations is not conducive to price stability, measures of core inflation are a valuable tool for gauging the stance of monetary policy.



Movements in the pace of inflation in Finland over the past year have been especially influenced by changes in the prices of energy and food items – as is often the case. Since it is well established that these product groups are susceptible to considerable short-term price volatility, one method of measuring core inflation is by monitoring a suitable price index with these items omitted. Indeed, much of the volatility in energy and food prices is caused by factors only faintly connected to the Finnish economy as such. For instance, energy prices in Finland are highly dependent on the price of oil, but the oil price is influenced by global economic growth and geopolitical developments. Unprocessed food prices are influenced by the success and failure of harvests, both in Finland and abroad. Processed foods, in turn, are subject to a wide array of tax changes.

Temporary factors also create volatility in other product groups. For example, early childhood daycare fees were lowered in January 2018, resulting in a 0.13 percentage point decline in Finland’s annual inflation rate for the same year. Seasonal factors should not have a material effect on developments in inflation, as inflation is measured as the change of the price index with respect to the corresponding month a year earlier.

However, temporary variation in prices does arise when public holidays fall on different dates. One such example is Easter, which was celebrated in April in 2019 but in March a year earlier. As a result, travel prices first declined in March 2019 relative to 2018 but shot up in April relative to the same period a year earlier.

In practice nearly any subcomponent of a price index can fall under the spell of unusual, temporary factors. An alternative approach to measuring core inflation involves weighting each product group based on its statistical properties, thus mitigating the effects of price movements considered temporary.

Product groups with both the fastest and slowest inflation rates can be expunged from a price index, giving what we call the ‘trimmed mean’ measure of core inflation. Another approach involves selecting a common variable that determines the price development of different product groups using principal component analysis and measuring core inflation based on the movements in the principal component. Product groups can be weighted by the reciprocal of the standard deviation for each product group’s price changes over a certain period of time. Items with markedly volatile inflation rates thus receive a smaller weighting. Based on a comparison of these methods drawing on Finnish data, the standard-deviation-weighted measure of core inflation proved to be the most informative.<sup>[1]</sup>

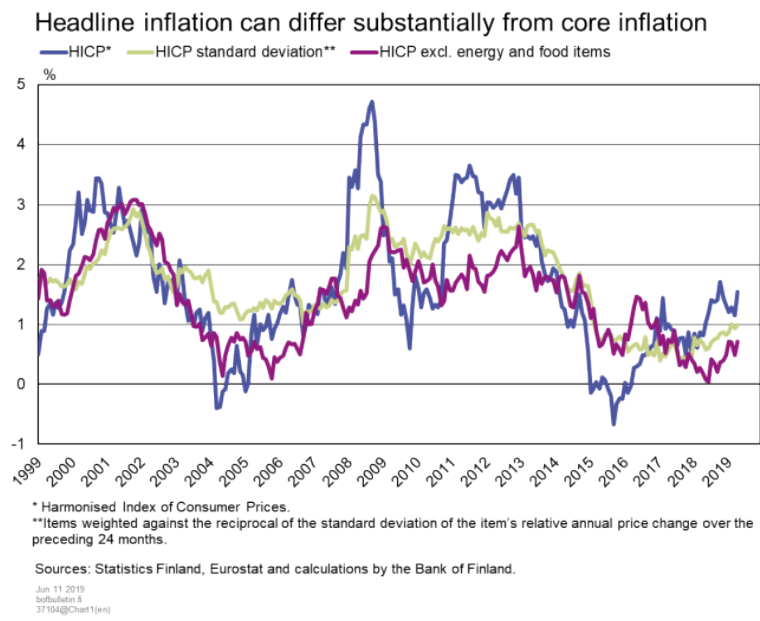
Headline inflation, as measured by the Harmonised Index of Consumer Prices (HICP), has fluctuated on both sides of the measures of core inflation, but deviations in either direction have been short-lived, lasting for just a year or two (Chart 1). When HICP headline inflation is compared against the two measures of core inflation – HICP excluding energy and food and the standard-deviation-weighted approach – the resulting deviations are longer-lasting relative to the former than to the latter. This is because during the review period, growth in food and energy prices has, on average, been faster than in services and non-energy industrial goods. Although the two measures do track closely together, short-term fluctuations can be observed in the HICP excluding energy and food. This confirms the fact that even HICP components other than energy and food exhibit short-term volatility. Accounting for this makes it easier to monitor price pressures within the economy.

HICP inflation accelerated in Finland in the summer of 2018 (Chart 1). The pick-up in inflation was prompted by price rises in energy and food items. Thus, change in the total index has been quicker than in the HICP excluding energy and food. Headline inflation has also been faster than the weighted-standard-deviation measure of core inflation. Because headline inflation is currently above measures of core inflation, it is likely that developments in inflation will prove more moderate in the coming months. Nevertheless, measures of core inflation have picked up. Firmer underlying price pressures will help ensure that the moderate acceleration in inflation is sustained.

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1. Similar comparisons for the euro area ‘Measures of underlying inflation for the euro area’ and Sweden ‘Measures of core inflation in Sweden’.

Chart 1.



## Tags

consumer prices, core inflation, inflation, measures of core inflation