

SPECIAL ANALYSIS

New target variable for inflation targeting?

Should the Riksbank decide to change the target variable for its inflation targeting, there is much to suggest that inflation as measured by either the HICP or the CPIF will be chosen as the replacement for the CPI. This analysis looks briefly at how these measures differ, how they have developed over the past 20 years, and factors that will affect their development in the coming years.

CPI – A PROBLEMATIC TARGET VARIABLE

Since the inflation target was introduced, it has been expressed in terms of the consumer price index (CPI). One important reason why the CPI was chosen was that it was then the best-known and most widely used measure of inflation. The use of the CPI as a target variable has been problematic, however, as it includes households' average mortgage interest costs. This means that the Riksbank's own interest rate decisions, in the short and medium term, push CPI inflation "in the wrong direction". If, for example, the Riksbank lowers the repo rate (to boost inflation), the short-term effect will be a reduction in the mortgage interest component of the CPI, with the result that CPI inflation actually falls (see Diagrams 135 and 136).

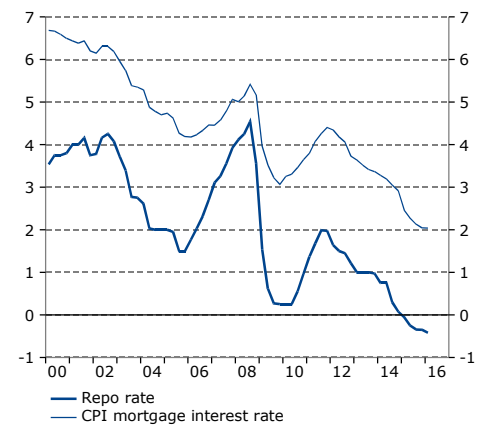
To address this problem, the Riksbank has used other price indices to guide its interest rate decisions over the years. Most recently, it has mainly used the CPIF – the CPI with a fixed interest rate – as an intermediate target variable. One problem with this approach is that there have been big differences between CPI and CPIF inflation in recent years. There is also much to suggest that the differences will remain large for the foreseeable future as the repo rate is brought back up from today's negative levels (see Diagram 137). Significant deviations between CPI and CPIF inflation could undermine the credibility of the inflation target, making it harder for the Riksbank to meet it.

The choice of target variable for monetary policy has recently been the subject of debate, especially after a review of monetary policy recommended that the Riksbank change its target variable to the CPIF.⁸³ The report finds that the CPIF is preferable to the CPI, arguing that this measure is not pushed "in the wrong

⁸³ Goodfriend, M. and M. King, "A review of the Riksbank's monetary policy 2010–2015", *Reports from the Riksdag* 2015/16:RFR6, 2016.

Diagram 135 Repo rate and mortgage interest rate in the CPI

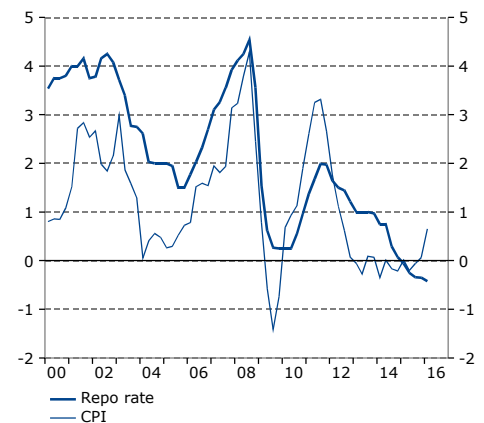
Per cent, quarterly values



Source: Statistics Sweden.

Diagram 136 Repo rate and CPI

Per cent and annual percentage change, quarterly values



Source: Statistics Sweden.

Diagram 137 Consumer prices

Annual percentage change, quarterly values



Sources: Statistics Sweden and NIER.

direction” in the short term by the Riksbank’s own policy. The report does not, however, contain any discussion of the pros and cons of other possible measures. The NIER shares the view that the CPI should be replaced as the target variable.⁸⁴ Either the CPIF or the HICP could be used as the new target variable. Both measures have the desired property of excluding the direct effects of the Riksbank’s own interest rate policy.

KEY DIFFERENCES BETWEEN THE HICP AND THE CPIF

Inflation as measured by the Harmonised Index of Consumer Prices (HICP) is the European Central Bank’s target variable for monetary policy. HICPs are produced for all EU member states, Norway, Iceland, Switzerland and Turkey, and for the EU and the euro area as a whole.⁸⁵

One key difference between the HICP and the CPIF is that they are *different types of index*. The HICP measures the change in consumer prices under the assumption that consumers retain the base period’s composition of consumption despite changes in relative prices. The CPIF takes more account of consumers to some extent adjusting their consumption patterns when relative prices change.

Another key difference is that the *HICP only measures prices for actual transactions*, which means that notional or imputed prices cannot be used, whereas estimates of this kind are used in the CPIF.

A third key difference is that there are *differences in the consumption baskets*. They do overlap by 85–90 per cent, and both exclude the direct effects of changes in mortgage rates, but there are the following important differences:

- Owner-occupied housing⁸⁶, rented housing⁸⁷ and lotteries are included in the CPIF but not in the HICP
- Elderly care, hospital care and some financial services are included in the HICP but not in the CPIF

⁸⁴ NIER, “Utvärdering av Riksbankens penningpolitik 2010–2015” [The review of the Riksbank’s monetary policy 2010–2015], consultation response, 18 April 2016.

⁸⁵ HICP is the target variable for the Bank of England.

⁸⁶ The capital stock (average purchase price of the stock of owner-occupied housing), property tax/duty, depreciation and buildings insurance are included in the CPIF.

⁸⁷ These costs are currently measured using imputed rents, but the methodology may be revised in 2017.

WHAT DO THESE DIFFERENCES MEAN FOR EXPECTED RATES OF INFLATION?

The differences in index type suggest that the HICP will rise *more quickly* than the CPIF. It is estimated that these differences have caused the HICP to rise 0.1–0.2 percentage points faster per year than the CPIF.⁸⁸

The differences in the consumption basket, on the other hand, mean that the HICP will grow *more slowly* than the CPIF. The components included in the CPIF but not in the HICP have long risen faster in price than the index as a whole. Although it is also likely that the components included in the HICP but not in the CPIF will also tend to rise faster than the overall index, their weight in the index is much smaller than that of the components included in the CPIF but not in the HICP.

On balance, it is not possible to draw any clear conclusion from the construction of the indices about how they will develop in relation to one another. Developments over the past 20 years can, however, be used to illustrate the differences.

HICP INFLATION HAS BEEN LOWER THAN CPIF INFLATION

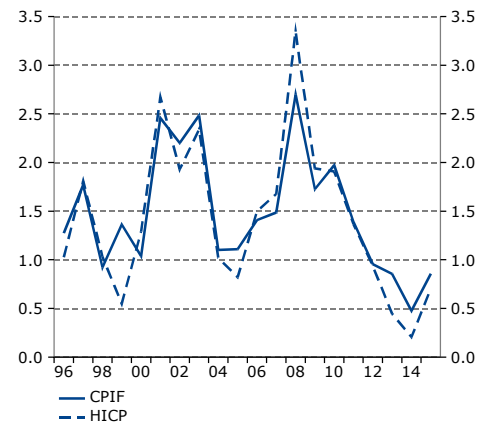
HICP and CPIF inflation moved similarly in the period from 1996 to 2015 (see Diagram 138). The difference, measured as an annual average, has generally been 0.2 percentage points or less, but has in some instances been as high as 0.8 percentage points (see Diagram 139). The difference has been positive in some periods and years, and negative in others. Changes in the taxation of owner-occupied housing have contributed to this variation over the years. For example, the reduction in property tax and the introduction of the ROT tax deduction for home improvements contributed to a positive difference in 2007–2009.

Over the past 20 years, the CPIF has risen by 34.0 per cent and the HICP by 32.6 per cent (see Diagram 140), which means that, on average, inflation as measured by the HICP has been 0.05 percentage points lower per year than CPIF inflation. Over the past five years, HICP inflation has been almost 0.2 percentage points lower than CPIF inflation (see Table 22).

⁸⁸ Apel, M., H. Armelius and C. Claussen, "Price index for the inflation target", *Economic Commentaries* No. 2, 2016, Sveriges Riksbank.

Diagram 138 CPIF and HICP

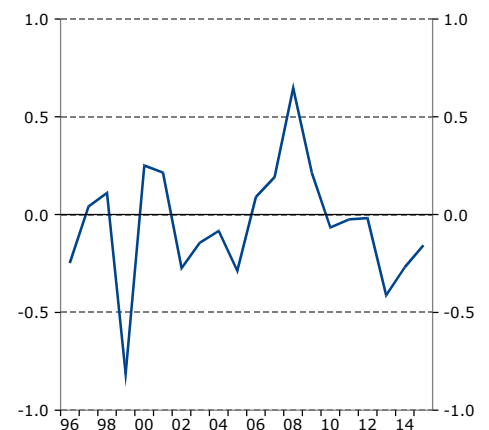
Percentage change



Source: Statistics Sweden.

Diagram 139 Difference between HICP and CPIF inflation

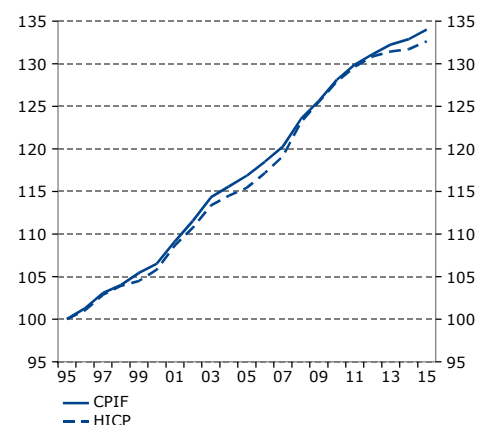
Percentage points



Source: Statistics Sweden.

Diagram 140 HICP and CPIF

Index 1995=100



Source: Statistics Sweden.

Table 22 HICP and CPIF inflation, different periods

Average percentage change and percentage points

Period	HICP	CPIF	Difference
1996–2015 (20 years)	1.43	1.48	–0.05
2006–2015 (10 years)	1.40	1.38	0.02
2011–2015 (5 years)	0.73	0.91	–0.18

Source: Statistics Sweden.

HICP INFLATION WILL BE LOWER THAN CPIF INFLATION IN 2016 AND 2017

Inflation as measured by the HICP will probably be lower than CPIF inflation over the next couple of years due to faster increases in the components included in the CPIF but not the HICP. The main reason is that costs for owner-occupied housing will continue to rise rapidly during the period.⁸⁹ The reduction in the ROT tax deduction means that the gap between HICP and CPIF inflation will be larger this year than next (see Table 23).

Table 23 HICP and CPIF inflation, 2016 and 2017

Percentage change and percentage points

Year	HICP	CPIF	Difference
2016	1.1	1.4	–0.3
2017	1.5	1.7	–0.2

Source: NIER.

⁸⁹ This will happen even if house prices fall over the next couple of years. The capital stock index reflects the average purchase price for the entire stock, and prices have risen continuously for a long period. One or even a few years of falling prices will therefore mean only that the rate of increase in the capital stock index is lower than it would otherwise have been, not that it will turn negative.