

ARTICLE – Different methods of measuring housing costs in the consumer price index

The ECB's new monetary policy strategy emphasises the desirability of including costs for owner-occupied housing in the harmonised index of consumer prices (HICP). These are already included in many countries' measures of inflation, including the CPIF in Sweden. However, it is not obvious how the cost of living in owner-occupied housing should be measured. Different methods have their advantages and disadvantages and the choice of method depends on what the price index is intended to measure. The CPIF uses a user cost approach that means, in practice, that housing costs follow a long moving average of the development of housing prices. As housing prices have risen at a relatively fast pace over a long period, housing costs are also increasing rapidly, which has made a positive contribution to the development of inflation in recent years.

Housing costs can be measured in different ways in the price index

It is not obvious how the cost of living in owner-occupied housing should be measured using an index for consumer prices. This is because housing is not consumed over the same period in which it is purchased. A litre of milk is purchased and consumed at (approximately) the same point in time, while a home is consumed over perhaps 20–30 years. Currently rising prices for houses are therefore not necessarily seen as a rising cost for consumers who already own their homes.²⁹ There are a number of different approaches that can be taken to measure housing costs, where different countries and institutions have made different choices. Basically, the choice of measurement method depends on what the price index is intended to measure.

The ECB's new monetary policy strategy presents a plan for how costs for owner-occupied housing can be included in the harmonised index of consumer prices (HICP). These costs have not previously been included. Once the costs for owner-occupied housing are included, the HICP is expected to capture better the price development that households are actually facing.³⁰ The method that the ECB advocates to measure these costs is known as the net acquisition approach. Put simply, this method can be described as treating housing like any other product or service. This means, therefore, that the price of newly built housing is measured every month, just like a litre of milk,

²⁹ This problem certainly applies to some durable goods such as cars and washing machines, but to a significantly lesser extent. For these goods, the price is measured during the same month that the purchase takes place.

³⁰ However, some housing costs have already been included, such as rent, heating and insurance costs.

for example. The price of sales of existing housing between private individuals is therefore not included. To a certain extent, however, purchasing housing is considered to be an investment, and capturing this in the HICP is not wanted. The value of land, for example, should thus be excluded from house prices measured using the net acquisition approach.³¹

The consumer price index (CPI) in Sweden and many other countries aims to measure the development of the costs of living of the average household.³² In a cost of living index, a housing purchase is considered an investment, which gives the household a flow of housing services. Housing costs for owner-occupied housing are therefore assumed to depend on the consumption of the services generated by the housing and not on the actual purchase of the housing. This is therefore compatible with the aim of the index to measure the price of the flow of services generated by living in owner-occupied housing. The HICP measure aims, instead, to be what is known as an inflation index and therefore differs, in some respects, from price indices aimed at measuring living costs.³³

It is primarily the view of the capital cost of living in owner-occupied housing that differs between the different methods.³⁴ On the whole, there are three different approaches that are used to measure these costs.

User cost approach – the households' costs for living in owner-occupied housing are measured directly. These costs include capital costs and costs for wear and tear. This method is compatible with the theory for the cost-of-living index and is therefore appropriate to use if this is what the index is intended to measure. One difficulty with the method is that the price of housing services is not directly observable but needs to be estimated and this is thus affected by the various assumptions made, for example regarding the degree of wear and tear or length of ownership.

Rental equivalence approach – the households' costs for living in owner-occupied homes are measured indirectly by following the development of rents for comparable objects. This method is also theoretically consistent with the user cost approach in a free market with perfect competition and thus answers the hypothetical question "how much rent would I demand if I were to let my home instead of living in it?". One problem with the method arises if there is no functioning rental market for single-family homes, as in Sweden for example, thus making the method difficult to apply. And, even if there had been a market, the object being rented is still not necessarily comparable with the object being owned.³⁵

³¹ The work of including housing costs will, however, be conducted in stages and, according to the ECB's timetable, costs for owner-occupied housing will be fully included in the HICP by 2027 at earliest. For more information, see the article, "An overview of the ECB monetary policy strategy" in Economic Bulletin no. 5 2021, ECB.

³² In brief, the cost-of-living index theory can be summarised as an index that specifies the relationship between the monetary amounts required to maintain, in two price situations, the same consumption standard, or the same level of benefit. See, for example the discussion in section 2.2 in "Översyn av konsumentprisindex" [Review of the consumer price index], SOU 1999:124.

³³ 130 "Harmonized Indexes of Consumer Prices: Their Conceptual Foundations, ECB Working Paper No. 130, 2002.

³⁴ That is to say, the one included in the COICOP group 04.X. in the Swedish nomenclature used in the CPI.

³⁵ In Sweden, until 2017, a rental equivalence approach was used to measure the cost of living in a tenant-owned apartment. As of 2017, a cost calculation has been used instead.

Net acquisition approach – the costs for living in an owner-occupied home are measured by following the development of prices for newly-built housing, excluding the value of the land upon which the house stands.³⁶ This method captures actual prices. However, current house prices do not reflect the cost of living in an average household, which is inconsistent with the theory for the cost of living index and is thus inappropriate for this type of index. It may also be difficult to separate the price of land from the total property price.

The table below shows how a selection of countries have opted to manage owner-occupied housing expenses in their main inflation measures.

Table 2. Methods for measuring housing expenses in each country's inflation measure

Country/Region	Method
Sweden, Canada	User cost approach
USA, Japan, Norway	Rental equivalence approach
Australia, New Zealand	Net acquisition approach
Euro area (HICP)	Excluded, but net acquisition approach recommended

Sources: The respective countries' statistical agencies.

Housing costs are already included in the CPIF

The Swedish CPI and CPIF thus already include a measure of the cost of living in owner-occupied housing using what is known as a user cost approach. Capital expenditure is captured in an interest expenditure index, which is a function of the level of interest rates (interest rate index) and how much capital has been put into the housing (capital stock index). In the CPIF, the mortgage-rate index is held constant and therefore it is only the development of the capital stock index that affects the development of the CPIF. The capital stock index measures the development, over time, of acquisition prices for the stock of single-family homes and tenant-owned apartments. For this, Statistics Sweden uses a model primarily based on the price index for housing. In practice, the development of the capital stock index follows the long moving average of housing price development. The length of these moving averages reflects how long people live in their homes and is therefore longer for single-family homes (about 30 years) than it is for tenant-owned apartments (about 10 years). In other words, the CPIF already captures the development of housing prices, albeit with quite a long time lag. As housing prices have risen at a relatively fast rate over a long period, the capital stock index is currently increasing by almost 6 per cent, which coincides with the average rate of increase in the index since 2005. In turn, this has meant that the contribution made by the capital stock index to CPIF inflation has averaged just over 2 tenths of a percentage point over the same period.³⁷

³⁶ The index normally includes the development of prices for running owner-occupied housing, including maintenance and repairs, as well as property insurance.

³⁷ The weight for the capital stock index in the CPIF is the same as the interest expenditure index in the CPI and is therefore affected by the level of interest rates. This means that the weight and thereby the contribution from the capital stock index has varied relatively strongly (from 0.1 to 0.5 percentage points) over the period. The weight is now 3.4 per cent, which is slightly lower than it has been historically, while the contribution is close to the average of 0.2 percentage points.