

Estimation and Imputation

(FREE TEXT)

Please describe the estimation and imputation procedures used and in addition please specify how you estimate imputed rent.

Housing costs (HH070)

It was used several, both non-parametric and parametric statistical methods for imputing missing items in the housing costs HH070 variable.

Income components

Only a few income components are imputed. For missing items of interest income in HY090G cold-deck and hot-deck methods, for the income components HY030G stratification method and HY022, HY023, HY100N deductive and gross-net conversion imputation methods were used.

Company car (PY021G)

Data is not imputed. Information is collected from registers.

Imputed rent (HY030G)

The stratification method is the method used for imputing equivalent gross rent values to the EU-SILC sample dwellings from the external data source compiled annually by Statistics Finland. The data being coherent with the NA include mean gross rents/m² to dwellings of different sizes, types and municipalities (strata).

Gross rent values of the external data are primarily derived from the actual market rents (incl. new and old contracts) of the Rent Statistics compiled by **conventional methods such as classification and regression analysis (hedonic method)**. Information for the Rent Statistics is collected by the interviews joined to the monthly Labour Force Survey collection (the whole sample size is 12,000), and from register sources maintained by Statistics Finland. For the regions (municipalities) with narrow market rents, and therefore unreliable estimates, the gross rent values have been first produced by disaggregating rent information at the regional level (NUTS3) or second, by using additional price information from the statistics of Prices of Dwellings.

In the stratification method, the mean gross rent / m² was imputed to the floor area (square meter) of the sample households' main dwellings by the following classes:

- HH010 (detached house with 1-2 dwellings or other kind of accommodation, semi-detached or terraced house, apartment or flat in the block of flats)
- HH030 (1, 2, 3, 4+)
- Construction or renovation year (-1950, 1950-59, 1960-69, 1970-79, 1980-89, 1990-99, 2000-)
- Municipality and district area in the municipalities with the greatest number of population (Helsinki, Espoo, Vantaa, Tampere, Turku) according to postal code

To obtain the value of imputed rent, costs on housing the household actually paid (rents, maintenance electricity, gas and other fuels, incl. subsidies received for them, minor repairs) and the ones imputed

(insurance for detached houses) were subtracted from the imputed gross rent value. As regards to owners of detached houses, heating costs were not included in the gross rent value of the external data source and for this reason, were not either used for subtracting the gross rent value. For others (shareholders of stock in a housing corporation (joint owners) and tenants): heating costs were included in both the gross rent value and subtracting items.

Tax on real estate is a part of maintenance charges in shareholders of stock in a housing corporation (joint owners), whereas tax on real estate of owners is included in HY120G.

The items of costs on housing follow the definition of the market rent. Imputed minor repairs are derived from the EU-SILC sample, and insurance from the HBS.