

# EU statistics on income and living conditions (EU-SILC) methodology - economic strain linked to dwelling

Statistics Explained

This article is part of a [set of articles](#) describing the methodology applied for the computation of the statistical indicator pertinent to the subject area of [Economic strain linked to dwelling \(ilc\\_mdcd\)](#) within the overall domain of [Income and living conditions](#). For these indicators, the article provides a methodological and practical framework of reference. The indicators relevant to the subject area of monetary poverty concern the following:

- Share of housing costs in disposable household income
- Share of rent related to occupied dwelling in disposable household income
- Total housing costs in pps
- Financial burden of the total housing cost
- Financial burden of the repayment of debts from hire purchases or loans

Moreover, since the indicators are of multidimensional structure and can be analysed simultaneously along several dimensions, the separate [datasets](#) providing these indicators along with the different combinations of dimensions are also presented.

## Description

- The **share of housing costs in disposable household income** refers to the weighted mean of the distribution of the share of housing costs (HH070) in disposable household income (HY020).
- The **share of rent related to occupied dwelling in disposable household income** refers to the weighted mean of the distribution of the share of the rent related to occupied dwelling (HH060) in disposable household income (HY020).
- The **total housing costs in pps** refers to the weighted mean of the distribution of the total housing costs (HH070) (net of housing allowances). The indicator is expressed in Purchasing Power Standard (PPS).
- The **financial burden of the total housing cost** refers to the percentage of persons in the total population living in a dwelling where housing costs, including mortgage repayment (instalment and interest) or rent, insurance and service charges (sewage removal, refuse removal, regular maintenance, repairs and other charges), consist a financial burden (HS140), based on the following levels of financial burden (AFFORD):
  1. Households with heavy financial burden due to the housing costs (HVY)
  2. Households with financial burden due to the housing costs (BUR)
  3. Households without financial burden due to the housing costs. (NOT)

- The **financial burden of the repayment of debts from hire purchases or loans** refers to the percentage of persons in the total population living in a dwelling where repayment of debts from any credit card, hire purchase or other loans (that is, excluding mortgage repayments or other loans connected with purchase of main dwelling) consist a financial burden (HS150), based on the following levels of financial burden (AFFORD):

1. Households with heavy financial burden due to the housing costs (HVY)
2. Households with financial burden due to the housing costs (BUR)
3. Households without financial burden due to the housing costs. (NOT)

## Statistical population

The statistical population consists of all persons living in private [private households](#) . Persons living in [collective households and in institutions](#) are generally excluded from the target population.

Households and individuals therein with missing values for any of the relevant dimensions, as well as with missing values for housing costs, equivalised disposable income, current rent (HH060) or the financial burden (HS140 and HS150) variables are excluded from calculations.

## Reference period

All indicators are collected and disseminated on an annual basis and refer to the survey year.

The reference period for all dimensions along with the indicators are disseminated is the survey year, except for age, income and household type. As far as age is concerned, it refers to the age of the respondent at the end of the income reference period, based on which the household type is also computed. Income reference period for income variables – with the exceptions of Ireland (moving income reference period) and the UK (survey year). Additionally, the information about the financial burden of the total housing cost and the financial burden of the repayment of debts from hire purchases or loan refers to the survey year.

## Unit of measurement

The share of housing costs in disposable household income as well as the share of rent related to occupied dwelling in disposable household income are given as a percentage.

The total housing costs are expressed in [Purchasing Power Standard](#) (PPS).

The financial burden of the total housing cost and the financial burden of the repayment of debts from hire purchases or loans are given as a percentage of persons in the total population.

## Dimensions

The separate datasets provide each indicator along with the [Geopolitical entity](#) and [time](#) dimension and the dimensions presented below.

The share of housing costs in disposable household income as well as the share of rent related to occupied dwelling in disposable household income are presented broken down by household type and income group (total, population below 60 % of median equivalised income, population above 60 % of equivalised income).

The total housing costs in pps is presented broken down by household type, income group (total, population below 60 % of median equivalised income, population above 60 % of equivalised income) and tenure status.

The financial burden of the total housing cost as well as the financial burden of the repayment of debts from hire purchases or loan are presented broken down by household type and income group (total, population below 60 % of median equivalised income, population above 60 % of median equivalised income).

## Calculation method

### 1. Share of housing costs in disposable household income:

Weighted average share of housing costs in disposable household income in the respective [dimensions](#)

$$\text{MEAN}_{k}(\text{HSCOSTS}_{at_k})$$

is calculated as the weighted average of the ratio of total housing cost (HH070) over the disposable household income (HY020) in each k.

The weight variable used is the Adjusted Cross Sectional Weight (RB050a).

$$\text{MEAN}_{k}(\text{HSCOSTS}_{at_k}) = \frac{\sum_{i \text{ at } k} \text{RB050a}_i \times \frac{\text{HH070}_i}{\text{HY020}_i \times 100}}{\sum_{i \text{ at } k} \text{RB050a}_i}$$

With regard to the calculation of the share of housing costs in disposable household income, the following methodological issues should be taken into consideration:

- Components that have to be included in housing costs:

a) OWNERS: Mortgage interest payments<sup>1</sup> (net of any tax relief), gross of housing benefits (i.e. housing benefits should not be deducted from the total housing cost), structural insurance, mandatory services and charges (sewage removal, refuse removal, etc.), regular maintenance and repairs<sup>2</sup>, taxes, and the cost of utilities (water, electricity, gas and heating).

<sup>1</sup>Included only in case of mortgage taken for the purpose of buying the main dwelling

<sup>2</sup>Only the regular maintenance and repairs should be included. According to the COICOP/HBS: 'regular maintenance or repairs of the dwelling are distinguished by two features: first, they are activities that have to be undertaken regularly in order to maintain the dwelling in good working order;; second, they do not change the dwelling's performance, capacity or expected service life.'

b) TENANTS (at market price): Rent payments, gross of housing benefits (i.e. housing benefits should not be deducted from the total housing cost), structural insurance (if paid by the tenants), services and charges (sewage removal, refuse removal, etc.) (if paid by the tenants), taxes on dwelling (if applicable), regular maintenance and repairs and the cost of utilities (water, electricity, gas and heating).

c) TENANTS (at reduce price): Rent payments, gross of housing benefits (i.e. housing benefits should not be deducted from the total housing cost), structural insurance (if paid by the tenants), services and charges (sewage removal, refuse removal, etc.) (if paid by the tenants), taxes on dwelling (if applicable), regular maintenance and repairs and the cost of utilities (water, electricity, gas and heating).

d) RENT FREE: gross of housing benefits (i.e. housing benefits should not be deducted from the total housing cost), structural insurance (if paid by the rent free tenant), services and charges (sewage removal, refuse removal, etc.) (if paid by the rent free tenant), taxes on dwelling (if applicable), regular maintenance and repairs and the cost of utilities (water, electricity, gas and heating).

## 2. Share of rent related to occupied dwelling in disposable household income:

Weighted average share of the rent related to occupied dwelling in disposable household income in the respective dimensions (k)

$$\frac{\text{RENT}_{at\_k}}{\text{HH060}_{at\_k}}$$

is calculated as the weighted average of the ratio of current rent related to occupied dwelling (HH060) over the disposable household income (HY020) in each k.

The weight variable used is the Adjusted Cross Sectional Weight (RB050a).

$$\text{MEAN}_{at\_k} = \frac{\sum_{i \in \text{limits}_{at\_k}} \text{RB050a}_i \times \frac{\text{HH060}_i}{\text{HY020}_i \times 12 \times 100}}{\sum_{i \in \text{limits}_{at\_k}} \text{RB050a}_i}$$

With regard to the calculation of the share of rent related to occupied dwelling in disposable household income, the following methodological issues should be taken into consideration:

- Other payments, which are made at the same time as the rent (such as for electricity, heating etc.), should be excluded. Also the regular repairs and maintenance and other services related to the dwelling should be excluded.
- Only rent related to the principal residence is taken into account

## 3. Total housing costs in pps:

Weighted average total housing cost in pps in the respective dimensions (k)

$$\frac{\text{HSCOSTS}_{PPS}_{at\_k}}{\text{HY020}_{at\_k}}$$

$k$ ]

is calculated as the weighted average of the ratio of total housing cost (HH070) over the [Purchasing Power Parity \(PPP\)](#) rate.

The weight variable used is the Adjusted Cross Sectional Weight (RB050a).

$$\text{MEAN}_{\text{HSCOSTS}} \left( \frac{\sum_{i \in \text{RB050a}_k} \text{HH070}_i}{\sum_{i \in \text{RB050a}_k} \text{PPP}_i} \right)$$

With regard to the calculation of the total housing costs in pps, the following methodological issues should be taken into consideration:

- Components that have to be included in housing costs:

- a) OWNERS: Mortgage interest payments (net of any tax relief), gross of housing benefits (i.e. housing benefits should not be deducted from the total housing cost), structural insurance, mandatory services and charges (sewage removal, refuse removal, etc.), regular maintenance and repairs<sup>2</sup>, taxes, and the cost of utilities (water, electricity, gas and heating).

- b) TENANTS (at market price): Rent payments, gross of housing benefits (i.e. housing benefits should not be deducted from the total housing cost), structural insurance (if paid by the tenants), services and charges (sewage removal, refuse removal, etc.) (if paid by the tenants), taxes on dwelling (if applicable), regular maintenance and repairs and the cost of utilities (water, electricity, gas and heating).

- c) TENANTS (at reduce price): Rent payments, gross of housing benefits (i.e. housing benefits should not be deducted from the total housing cost), structural insurance (if paid by the tenants), services and charges (sewage removal, refuse removal, etc.) (if paid by the tenants), taxes on dwelling (if applicable), regular maintenance and repairs<sup>1</sup> and the cost of utilities (water, electricity, gas and heating).

- d) RENT FREE: gross of housing benefits (i.e. housing benefits should not be deducted from the total housing cost), structural insurance (if paid by the rent free tenant), services and charges (sewage removal, refuse removal, etc.) (if paid by the rent free tenant), taxes on dwelling (if applicable), regular maintenance and repairs<sup>1</sup> and the cost of utilities (water, electricity, gas and heating).

#### 4. Financial burden of the total housing cost:

Let AFFORD be the variable that describes the financial burden due to housing costs. Financial burden of the total housing cost broken down by by each combination of dimensions  $k$

$\text{BUR}_{\text{xxx}}^k$

$U_{\text{FFFC}}$  is calculated as the percentage of people in each  $k$  living in households with financial burden due to

housing costs as outlined in the levels of AFFORD.

The weight variable used is the Adjusted Cross Sectional Weight (RB050a).

$$FIN_{BURxxx}_{at\_k} = \frac{\sum_{\text{for all } i} \text{AFFORD}_{at\_k} RB050a_i}{\sum_{\text{for all } i} RB050a_i} \times 100$$

where xxx takes the values HVY (heavy financial burden), BUR (financial burden) and NOT (not a financial burden) as described [above](#).

With regard to the calculation of the financial burden of the total housing cost, the following methodological issues should be taken into consideration:

- The objective is to assess the respondent feeling about the extent to which housing costs are a financial burden to the household.
- Total mortgage repayment including instalment and interest is to be taken into account for owners and actual rent for renters. In addition, service charges (sewage removal, refuse removal, regular maintenance, repairs and other charges) are to be considered.
- Only really paid housing costs have to be taken into account, i.e. the variable should cover what the household should actually pay and should not take into account the accumulation of arrears over past periods.

### 5. Financial burden of the repayment of debts from hire purchases or loans:

Let AFFORD be the variable that describes financial burden due to housing costs. Financial burden of the repayment of debts from hire purchases or loan broken down by each combination of dimensions (k)  $FIN_{BURxxx}_{at\_k}$

is calculated as the percentage of people in each k living in households with financial burden due to housing costs as outlined in the levels of AFFORD.

The weight variable used is the Adjusted Cross Sectional Weight (RB050a).

$$FIN_{BURxxx}_{at\_k} = \frac{\sum_{\text{for all } i} \text{AFFORD}_{at\_k} RB050a_i}{\sum_{\text{for all } i} RB050a_i} \times 100$$

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forall i
;where
;AFFORD=xxx
_at
_k} RB050a_i} {
sum
limits_{
forall i
_at
_k} RB050a_i}
times 100[/math]

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where xxx takes the values HVY (heavy financial burden), BUR (financial burden) and NOT (not a financial burden) as described [above](#) .

With regard to the calculation of the financial burden of the repayment of debts from hire purchases or loans, the following methodological issues should be taken into consideration:

- The objective is to assess the respondent feeling about the extent to which the repayment of non-housing related debts are a financial burden to the household.
- Non-housing related debts include any loans for consumer items or services (car, holiday, furniture, durable etc.) and credit card debt.
- Mortgage repayments or loans connected with the purchase of main dwelling are excluded.

Moreover, there are some methodological limitations that pertain to the following dimensions accompanying the indicators: Household type, Tenure status.

## Main concepts used

For the production of the indicators relevant to the subject area of economic strain linked to dwelling, the variables listed below are also involved in computations:

Equivalised disposable Income (EQ\_INC)], Median equivalised disposable income (MEDIAN 20).

Additionally, the following concepts should be taken into consideration:

- Total housing cost (HH070) refers to monthly costs connected with the households right to live in the accommodation. The costs of utilities (water, electricity, gas and heating) resulting from the actual use of the accommodation are also included.
- Housing allowances: The Housing Function refers to interventions by public authorities to help households meet the cost of housing. An essential criterion for defining the scope of a Housing allowance is the existence of a qualifying means-test for the benefit. It includes rent benefit and benefit to owner-occupier, while it excludes social housing policy organized through the fiscal system (i.e. tax benefits) and all capital transfers (in particular investment grants).
- Financial burden of the total housing cost (HS140) refers to the extent to which housing costs are a financial burden to the household.
- Financial burden of the repayment of debts from hire purchase or loans (HS150) refers to the extent to which the repayment of non-housing related debts are a financial burden to the household.

## SAS scripts

SAS programming routines developed for the computation of the EU-SILC datasets providing the indicators on economic strain linked to dwelling along with the different dimensions are listed below.

Dataset	SAS program file
Share of housing costs in disposable household income, by type of household and income group ( <a href="#">ilc_mdcd01</a> )	_mdcd01.sas
Share of rent related to occupied dwelling in disposable household income, by type of household and income group ( <a href="#">ilc_mdcd02</a> )	_mdcd02.sas
Total housing costs in pps ( <a href="#">ilc_mdcd03</a> )	_mdcd03.sas
Financial burden of the total housing cost ( <a href="#">ilc_mdcd04</a> )	_mdcd04.sas
Financial burden of the repayment of debts from hire purchases or loans ( <a href="#">ilc_mdcd05</a> )	_mdcd05.sas

## See also

- [EU statistics on income and living conditions \(EU-SILC\) methodology](#) (overview of all articles)
- [Material deprivation statistics - early results](#)
- [Living conditions in Europe - income distribution and income inequality](#)
- [Living conditions in Europe - poverty and social exclusion](#)
- [Living conditions in Europe - material deprivation and economic strain](#)
- [Quality of life indicators - material living conditions](#)

## Main tables

- [Income and living conditions \(t\\_ilc\)](#)

## Database

- Living conditions and welfare (livcon), see:

[Income and living conditions \(ilc\)](#)

[Material deprivation \(ilc\\_md\)](#)

[Material deprivation by dimension \(ilc\\_mddd\)](#)

## Dedicated section

[Income and living conditions \(ilc\)](#)

## Publications

- [What can be learned from deprivation indicators in Europe](#) - Methodological paper (2009 edition)
- [European social statistics \(2013\)](#) - Statistical books
- [Combating poverty and social exclusion. A statistical portrait of the European Union 2010](#) — Statistical books
- [Income and living conditions in Europe \(2010\)](#) — Statistical books
- [The continuity of indicators during the transition between ECHP and EU-SILC](#)
- [Comparative EU quality reports](#)
- [Modules: assessment of implementation](#)



## Methodology

- [Income and living conditions \(ilc\)](#) (ESMS metadata file — ilc\_esms)
- [Operation guidelines](#)
- [Methodological guidelines and description of EU-SILC target variables](#)

## Legislation

- [Regulation 1177/2003](#) of 16 June 2003 concerning Community statistics on income and living conditions (EU-SILC)
- [Summaries of EU Legislation: EU statistics on income and living conditions](#)
- [Regulation 1553/2005](#) of 7 September 2005 amending Regulation 1177/2003 concerning Community statistics on income and living conditions (EU-SILC)
- [Regulation 1791/2006](#) of 20 November 2006 adapting certain Regulations and Decisions in the fields of ... statistics, ..., by reason of the accession of Bulgaria and Romania

## External links

- [OECD - Better Life Initiative: Measuring Well-being and Progress](#)
- [The social dimension of the EUROPE 2020 strategy - A report of the social protection committee \(2011\)](#)
- [Employment and Social Developments in Europe \(2013\)](#)

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[http://ec.europa.eu/eurostat/statistics-explained/index.php/EU\\_statistics\\_on\\_income\\_and\\_living\\_conditions\\_\(EU-SILC\)\\_methodology\\_-\\_economic\\_strain\\_linked\\_to\\_dwelling](http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_statistics_on_income_and_living_conditions_(EU-SILC)_methodology_-_economic_strain_linked_to_dwelling)