

Using EUROMOD data to compile experimental income statistics

INTRODUCTION

The purpose of this work is to obtain an overview of the income data needed to implement regional policy and assess the local standard of living. In order to identify the needs of ministries and local authorities, their requests to Statistics Estonia in recent years were reviewed and analysed. Ministries and local authorities were also contacted to obtain direct feedback on what kind of income statistics they need.

Based on the feedback received, an extract was made from the EUROMOD microsimulation model dataset and the incomes of residents of Estonian municipalities by type of income were calculated for the years 2018–2024.

The dataset divides income into larger groups by type of income and, where possible, provides more detailed statistics by specific types of payments. The data are both household- and individual-based, and can also be broken down by age, level of education and economic activity.

Income statistics are also published on Statistics Estonia's dashboard, where data are presented in graphs and charts, and logged-in users can create a personalised dashboard tailored to their needs.

This work was funded by the European Union's Urban Audit grant. The Urban Audit is a joint project of the European Commission's Directorate-General for Regional Policy and Eurostat, the statistical office of the European Union, which aims to collect data on the quality of life in European cities and urban areas and to produce reliable and comparable statistics based on these data.

METHODOLOGY

The statistics presented are based on datasets compiled for the EUROMOD microsimulation model using data from state registers.

EUROMOD is a microsimulation model developed by the European Commission's Joint Research Centre (JRC) that is used to predict the impact, effectiveness and fairness of changes in tax policy and benefit systems before they are implemented. The model is intended for policymakers, researchers and analysts, who can use it to assess the impact of taxes and social benefits on household income, poverty, inequality and the state budget. The model also allows for comparison of the socio-economic systems of the European Union (EU) member states.

EUROMOD is based on data on individuals and households (e.g. household composition, income, employment status) and applies country-specific tax and benefit policy rules to the data. It simulates the immediate impact of policy changes on the income distribution and poverty indicators of various social groups.

The EUROMOD register-based dataset covers the usually resident population of Estonia determined using the residency index, based on income at the end of the calendar year. Individuals are divided into household-dwellings adjusted using the location index. Persons residing in institutions (e.g. nursing homes, prisons, monasteries) have been excluded from the reports.

The statistics produced in this project should be treated as experimental, because, unlike for the EUROMOD datasets based on survey data, there are no international standards or a common methodology across EU member states for compiling statistics based on comprehensive register data, primarily due to significant differences between countries. The results of the reports may be refined over time as new data sources become available. Zero-sum results may indicate a lack of data. Since the statistics produced in this project may differ from other data published by Statistics Estonia, the results presented here should be considered unofficial.

The data sources used are the registers of the Ministry of Justice and Digital Affairs, Kredex, the Tax and Customs Board, AS Pensionikeskus, the Ministry of the Interior, the Social Insurance Board, the Health Insurance Fund and the Unemployment Insurance Fund.

ENSURING THE CONFIDENTIALITY OF DATA

Statistics, especially regional statistics, are subject to strict confidentiality requirements. One of these is that individuals must not be identifiable in the statistics. This requirement has been strictly observed in tables UA01–UA16 compiled within the framework of the project. Indicators for groups consisting of fewer than ten households have not been published. The published indicators have been rounded to the nearest ten. Due to rounding, some of the results may have changed. This has had the greatest impact on the indicators for small rural municipalities, i.e. Ruhnu, Vormsi, Kihnu and Muhu, which have fewer than 2,000 inhabitants. It also affects calculated indicators, such as the amount per person. If the number of income recipients is rounded from 18 to 20, the average amount per person will decrease accordingly.

DEFINITIONS

Family benefits and allowances

Maintenance allowance – paid in cases where a parent does not pay maintenance for a child or where the parents have entered into a notarial agreement to pay maintenance but one of the parents does not perform their maintenance obligation.

Child care allowance – one of the parents has the right to receive child care allowance: for each child of up to 3 years of age if the parent raises one or more children of up to 3 years of age; for each child between 3 and 8 years of age if the parent raises also children between 3 and 8 years of age in addition to one or more children of up to 3 years of age; for each child between 3 and 8 years of age if the parent raises three or more children who are at least 3 years of age and who receive child allowance in a family with three or more children. If one of the parents is on parental leave, that parent is entitled to child care allowance.

Child allowance – every child has the right to receive child allowance from birth until he or she attains 16 years of age. A child who is enrolled in a basic, upper secondary or vocational school which operates on the basis of basic education, in daytime study or, for medical reasons, in another form of study has the right to receive child allowance until he or she attains 19 years of age. Once an eligible child reaches the age of 19, the allowance will be paid until the end of the current academic year.

Allowance for a family with many children – a parent who raises three or more children for whom he or she receives child allowance is also entitled to allowance for a family with many children. This allowance is paid for as long as the parent receives child allowance for three or more children.

Childbirth allowance – one-time state allowance for every family in which a child is born.

Parental benefit – parental benefit preserves a parent's average salary of the previous calendar year if the parent temporarily stops working to care for a child. All parents are entitled to parental benefit. If one parent is on parental leave, the benefit is paid to the parent on leave. Only one parent in a family can be on parental leave at a time.

Pregnancy and childbirth benefit – benefit payable for pregnancy and childbirth leave. On 1 April 2022, a reform of the parental benefit system came into force, renaming the previous pregnancy and childbirth leave as maternity leave and replacing the childbirth benefit with maternity benefit. The Social Insurance Board began paying the benefit instead of the Health Insurance Fund.

Alimony – money paid for the maintenance of a child. A minor child is entitled to maintenance, as is a person aged 18 or over who is enrolled in a basic, upper secondary or vocational school, but not beyond the age of 21. A parent of a minor child performs the obligation to maintain the child by paying alimony

primarily if the parent does not live together with the child or is not involved in raising the child. If a parent does not fulfil their obligation to maintain the child, the court will order them to pay alimentary support to the child at the request of the other parent or guardian.

Single parent's child allowance – a child in whose birth registration no entry has been made concerning the father or an entry has been made on the basis of a statement by the mother or whose parent has been declared to be a fugitive pursuant to the procedure established by law and who meets the requirements for receiving child allowance has the right to receive single parent's child allowance.

Other child allowances – allowance for children whose parent is serving in the Estonian Defence Forces or in alternative non-combatant service, guardianship allowance, start in independent life allowance, adoption allowance, etc.

Old age-related income

Old-age pension (I pillar pension) – pension granted to persons who have reached retirement age and have at least 15 years of pensionable service in Estonia.

II pillar pension – mandatory funded pension financed from the social tax and the employee's gross salary.

III pillar pension – voluntary supplementary funded pension. Contributions to this pillar can be made by both the individual and the employer and contributions are not linked to earned income. Until 2021, it was not possible to distinguish payments made from the III pillar by retirement age and, therefore, the payments for all residents are shown.

Allowance for a pensioner living alone – allowance paid to persons of the retirement age who live alone according to the Population Register and whose monthly available pension falls below a certain limit. The limit is set by the Riigikogu (Parliament of Estonia) in the state budget for each fiscal year.

Unemployment allowances and benefits

Redundancy and insolvency benefits – redundancy benefit is paid, based on the employer's application, to persons whose employment contract was terminated due to redundancy or whose employer was unable to offer them the agreed amount of work for reasons beyond their control and therefore reduced the salary. The purpose of the insolvency benefit (employer's insolvency benefit) is to compensate the employee for the unreceived salary, holiday pay and benefits that had not been received at the time of cancellation of the employment contract but which were prescribed by the Employment Contracts Act.

Degree study allowance – allowance for working-age employed persons and those registered as unemployed who face difficulties in finding work due to insufficient or outdated education or skills, or who are at risk of losing their job. The allowance is paid if the person enrolls in a state-financed study place in a vocational school, applied higher education or undergraduate institution in a curriculum supported by the Unemployment Insurance Fund.

Unemployment insurance benefit – benefit granted to persons who meet the unemployment insurance period requirement and who did not leave their job on their own initiative, on agreement with their employer or through their own fault. For the first 100 days, the benefit is 60% of the person's average wages for one calendar day; thereafter it is 40%.

Unemployment allowance – allowance for people who have lost their jobs to help them get by and cover their basic needs. The allowance is paid to persons who are registered as unemployed, whose income for one month is less than 31 times the daily rate of the unemployment allowance and who have been employed or engaged in an activity equivalent to work for at least 180 days in the year prior to registration as unemployed.

Other unemployment benefits – support for starting a business and benefits related to the termination of employment.

Allowances related to incapacity for work

Benefits for disabled persons – social benefits for people with disabilities (children, adults, parents, spouses, etc.). The amount of the benefit may depend on the severity of the disability. Also includes additional allowances related to the disability, such as transport and telephone allowance, etc.

Work ability allowance – allowance for people with partial or no work ability. The prerequisite for receiving the allowance is the assessment of work ability, which can be applied for at the Estonian Unemployment Insurance Fund. The amount of the allowance depends on whether the person has been assessed as having no or partial work ability.

Survivor's pension – pension granted upon the death of a provider to family members who are incapacitated to work and persons treated as such during the period when the person meets the conditions for receiving such a pension.

Health-related benefits – sickness benefit and care allowance, compensation for damages to victims and compensation for occupational accidents and diseases.

Subsistence benefit – state aid for people living in material deprivation, paid by local authorities. Depending on the situation, local authorities use both social services and other social assistance to alleviate deprivation. Subsistence benefit is paid when other measures to alleviate poverty and deprivation have not been effective.

Work-related income

Monetary employment income from Estonia – monetary employment income received from Estonia and monetary employment income received from foreign countries (taxable).

Monetary employment income from foreign country – monetary employment income received from foreign countries (taxable) and monetary employment income received from foreign countries (non-taxable).

Temporary subsidy program – compensation paid during the COVID-19 pandemic to a natural person working under an employment contract whose employer was a company, branch of a foreign company, non-profit association, foundation or legal person in public law registered in the Estonian Commercial Register or in the Non-Profit Associations and Foundations Register, excluding the state and local authorities, or a self-employed person whose activities were significantly disrupted due to extraordinary circumstances and restrictions.

Income from self-employment – income from unregistered or registered individual business activities, net profit/loss from individual business activities in foreign countries, remuneration for creative activities.

Investment-related income – dividends, income from capital investments, interest, rental income from real estate or land, payments from II pillar before retirement pension age, payments from III pillar before retirement pension age.

Other allowances and benefits

Gains from transfer of property – income from the transfer of assets (e.g. sale of real estate).

Other allowances and scholarships – research awards, gambling winnings, doctoral allowance, scholarships, temporary price relief, compensation for energy costs to domestic consumers.

SUMMARY

The publication of income data by type of income became possible thanks to the EUROMOD microsimulation model. When examining, using and interpreting the data, it should be noted that these are experimental statistics, which means that the data might not be comparable with data published by Statistics Estonia in other tables of the same domain.

ANNEX 1. Economic activities in output table UA14

NACE (2008) code	NACE (2008)	Modification for table UA14
A	Agriculture, forestry and fishing	Agriculture and natural resource management
B	Mining and quarrying	Industrial and utility supply activities
C	Manufacturing	Industrial and utility supply activities
D	Electricity, gas, steam and air conditioning supply	Industrial and utility supply activities
E	Water supply; sewerage, waste management and remediation activities	Industrial and utility supply activities
F	Construction	Construction
G	Wholesale and retail trade; repair of motor vehicles and motorcycles	Trade and repair
H	Transportation and storage	Transportation, storage, and communication
I	Accommodation and food service activities	Accommodation and food service activities
J	Information and communication	Transportation, storage, and communication
K	Financial and insurance activities	Financial and insurance activities
L	Real estate activities	Real estate, professional, scientific or administrative activities
M	Professional, scientific and technical activities	Real estate, professional, scientific or administrative activities
N	Administrative and support service activities	Real estate, professional, scientific or administrative activities
O	Public administration and defence; compulsory social security	Public administration and social protection
P	Education	Education
Q	Human health and social work activities	Human health and social work activities
R	Arts, entertainment and recreation	Culture, service activities, and other activities
S	Other service activities	Culture, service activities, and other activities
T	Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	Culture, service activities, and other activities
U	Activities of extraterritorial organizations and bodies	Culture, service activities, and other activities