

EUROMOD

COUNTRY REPORT

HUNGARY (HU)
2018-2021

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EUROMOD is the tax-benefit microsimulation model for the European Union (EU). It enables researchers and policy analysts to calculate, in a comparable manner, the effects of taxes and benefits on household incomes and work incentives for the population of each country and for the EU as a whole.

EUROMOD covers the 27 Member States and is yearly updated to cover the most recent changes in countries' policy systems. It uses input databases which are also updated on a yearly basis, coming mainly from the European Union Statistics on Income and Living Conditions (EU-SILC). The model yearly update is supported by the following Directorate-Generals of the European Commission: DG EMPL, DG ECFIN, DG TAXUD, DG REFORM, DG JRC, DG ESTAT.

Originally maintained, developed and managed by the Institute for Social and Economic Research (ISER), since 2021 these responsibilities are taken over by the Joint Research Centre (JRC) of the European Commission, in collaboration with Eurostat and 27 national teams from the EU countries.

The EUROMOD governance structure consists of a Steering Committee, allowing partner DGs to monitor the process of the EUROMOD update, and a Scientific Advisory Board to monitor and guide the scientific development of the model.

This report documents the work done in the most recent annual update for Hungary. This work was carried out by the EUROMOD core development team, based at the JRC in Seville, in collaboration with the national team.

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The results presented in this report are derived using EUROMOD version I4.0. EUROMOD is continually being improved and the results presented here may not match those that would be obtained with earlier or later versions of EUROMOD.

For more information see <https://euromod-web.jrc.ec.europa.eu/>

The information contained in this document does not reflect the position or opinion of the European Commission.

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1. BASIC INFORMATION

1.1 Basic information about the tax-benefit system, 2018-2021

- The Hungarian tax-benefit system is a unified national system where there are no policy differences across regions.
- In Hungary, the “tax year” runs from January 1 to December 31. The tax system generally changes in January each year. Mainly, benefits changes happen at the same time, but modifications may also occur during the year. In January of 2011 the personal income tax system was changed significantly (see page 21)
- Year by year, gradual increases on the old age pension’s age limit had been applied so that pension age raised to 65 years old for both men and women. (see Table 1.1.)
- The minimum school leaving age is 16; dependent children are defined as age under 16 or under 25 if the child is in full-time education and not married. The regulations exclude the people with their own children or cohabiting partner being a dependent child. In the case of the regular child protection benefit dependent children are defined in the tax unit as aged 17 or younger or 23 or younger if they are in full-time secondary education, not married and not cohabiting or 25 or younger if they are in full-time tertiary education, not married and not cohabiting.
- For benefit purposes a lone parent is not legally married to anyone and is a parent of a dependent child (regardless of cohabitation, if he/she declares him/herself alone). If the parent declares him/herself as not married, he/she has the right not to share child related tax credit with the other parent.
- The income tax system is an individual (personal) system.
- Income tax withholdings are collected on a cumulative basis, i.e., the system tries to ensure withholding the exact amount due in the financial year. Only individuals paying tax on trading income (e.g. self-employed people) or whose incomes come from different sources must file a tax return for income tax.
- The means-tested benefit system assesses entitlement according to benefit unit income. The benefit unit is the household - the couple (cohabiting or married) and other adult person(s) or single adult plus any dependent children.
- The monthly amounts of the minimum wage in the years of interest are:

2018	2019	2020	2021
138 000 HUF	149 000 HUF	161 000 HUF	167 400 HUF

1.1.1 Special support during the COVID pandemic from April 2020

1, Between March and June of 2020 the employer doesn't pay social contribution tax in 11 subsectors (like tourism, catering, event org., sport etc). In these sectors the employee doesn't pay contribution too, only 7710 HUF/month health insurance. In the case of self-employment: the itemised tax of small taxpayers don't pay tax in the same sectors.

2, if a company is unable to pay its employees because of the epidemic and choose to reduce their working hours (and salary accordingly) the state will pay subsidy of 70 percent of the wage loss compared to the original wage. The period is maximum 3 months

3, Companies working in engineering, research and development field receive a 40 percent wage subsidy over the next 3 months, which is not depended to part-time work. This is definitely a company support, however may ease labour market tension in those sub-sector. (Not simulated in EUROMOD)

1.2 Social Benefits

Old age benefits

The pension system was reformed in 1997, to establish three main pillars.

- First Pillar: mandatory, state pension, which is publicly-managed and financed on a PAYG basis. It is financed by employer and employee contributions, supplemented from state budget if needed.
- Second Pillar: mandatory, privately-run pension funds and fully funded. This compulsory pension scheme is administered by several independent pension funds, which are authorised and supervised by the state. It is financed by employer and employee contributions. This pillar was practically terminated in 2011, and cumulated funds were nationalised.
- Third pillar: voluntary, privately-run pension funds.

A significant reverse change happened in 2011, as the third pillar was de facto eliminated (around twenty thousand individuals remained in the system).

Table 1.1. Retirement age in the past and after 01/01/2010

Year of birth	Retirement age		Retirement year	
	Men	Women	Men	Women
1945	62	60	2007	2005
1946	62	61	2008	2007
1947		62		2009
1948		62		2010
1949		62		2011
1950		62		2012
1951		62		2013
1952		62,5		2014-2015
1953		63		2016
1954		63,5		2017-2018
1955		64		2019
1956		64,5		2020-2021
1957		65		2022
1958		65		2023
1959		65		2024
1960		65		2025

Source: Central Administration of National Pension Insurance; 2011

Old age benefit (*öregségi nyugdíj*): The amount of pension depends on the average monthly income and the insurance period. 20 years of contribution payment is required for a full old age pension, and 15-19 years for a partial pension. The monthly minimum pension amounts to 28,500 HUF in each year, it is frozen at that level.

In 2009 a measure was taken for further increase of age limits of both sexes up to 65 years in a mid-term period (see Table 1.1 above). The amount of the minimum pension is also a reference eligibility threshold for several social benefits (e.g. regular social support).

Early and Advanced Pension (*előrehozott, korkedvezményes nyugdíjak*): Early Retirement Pension (*korkedvezményes öregségi nyugdíj*) is available to those involved in jobs resulting in increased physical load or jobs implying hazardous (such as soldiers, policemen, fire-fighters, etc.) to health. Entitlement to pension starts 2 years earlier for

those who have worked in such activities for at least 10 years (men) or 8 years (women), and retirement age is further reduced by 1 year for every additional working period of 5 years (men) or 4 years (women) in such conditions. Advanced Pension (*előrehozott öregségi nyugdíj*) is paid no earlier than five years before the retirement age. Those who need no more than 5 years of service period are entitled to the Advanced pension at reduced rate (*csökkentett összegű előrehozott öregségi nyugdíj*) From January 1, 2012 all type of the early and advance pensions were terminated, instead of these the *early retirement benefits* were created.

Survivors benefits

Survivors benefits is paid to the surviving partner even if the couple was not married (either widowed, divorced or cohabitant), the surviving dependent children and other surviving persons (i.e. parents, grandparents, and foster parents). This is a not means tested benefit. It corresponds to 60% of the deceased person pension and it is paid even though the surviving spouse has a pension by his own. Therefore, the surviving spouse can be entitled for a permanent or a temporary widow(er)s pension if his/her deceased spouse was a receiver of old age or invalidity pension or got the necessary service period.

Temporary Widow(er)'s Pension (*ideiglenes özvegyi nyugdíj*) is paid to the surviving spouse for 12 months, or until the common child reaches 18 years of age. After the termination of the temporary widow(er)'s pension, the widow(er) is entitled to a Permanent Widow(er)'s Pension.

Permanent Widow(er)'s Pension (*özvegyi nyugdíj*): The surviving spouse/partner is entitled to a permanent widow pension if he/she is above retirement age, or invalid or has at least two minor children. The amount of the pension is 50% of the old age pension or 50% of the invalidity pension to which the deceased person would have been entitled to. This is reduced to 30% if the widow(er) receives old age or invalidity pension on his/her own right.

Parental Pension (*szülői nyugdíj*) is paid to those (grand)parents, who are disabled or 65 years old or more, who were dependent upon their (grand)child throughout the preceding year, and whose deceased (grand)child was entitled to old age or invalidity pension at the time of death. The amount of the parental pension is equal to the amount of the permanent widow(er)'s Pension.

Orphan's Allowance (*árvaellátás*): Orphans having lost one parent are entitled to 30% of the deceased parent's pension as Orphan's Allowance. Those orphans having lost both parents are entitled to 60% of the higher pension of the two parents. Survivors of a person died in a work-related accident are entitled to Work Accident-related Survivors' Benefits. They can be entitled to Temporary and Permanent Widow(er)'s Pension, Parental Pension and Orphan's Allowance according to the above rules with the exception that in this case the length of the deceased person's service period is not a condition.

Sickness benefits

Two kinds of sickness benefits are paid by social insurance.

Sick-leave (*betegszabadság*) is entitled to the sick employee for up to 15 working days per calendar year. The employer pays the expenses of sick-leave.

Sickness Benefit (*táppénz*) is paid by the Health Insurance Fund for a maximum of one year during employment or for 90 days after the termination of employment. If the previous insurance period is at least two years, the amount of sickness benefit is 70% of the daily average gross earning over the previous calendar year, while if the previous

insurance period is less than 2 years, the amount is 60% of the daily average earnings. (These rates were decreased to 60 and 50% on 01.08.2009)

Parents can be entitled for Sickness Benefit in order to nurse their children as follows:

- Until the child reaches 1 year of age,
- For 84 days per child if the child is between 1-3 years,
- For 42 days per child if the child is between 3-6 years and for 84 days for a lone parent,
- For 14 days per child if the child is between 6-12 years and for 28 days for a lone parent.

Disability benefits

In Hungary disability benefits are heterogeneous; there are both insurance-based and non-contributory benefits among them. The system of the disability benefits was changed at the end of 2011. Since 1st of January 2012, the disability benefit was introduced to replace the invalidity pension, the work Accident-related disability pension, the temporary invalidity annuity and the regular social annuity.

Invalidity Pension (*rokkantsági nyugdíj*) is due to those persons whose working capacity has been reduced by at least 67% and no improvement is expected in his/her health for at least 1 year, therefore the recipient does not work regularly or his/her wage is substantially lower than before becoming invalid.

There are three classes of invalidity pension:

- Class III: at least 67% reduction in working capacity but not totally incapacitated for work;
- Class II: 100% reduction of working capacity but no need of permanent care by others;
- Class I: 100% reduction of working capacity and need of permanent care by others.

Eligibility for invalidity pension starts from the day on which a medical committee diagnoses the invalidity. The invalidity pension is not replaced by an old age pension, but covers also the period after the retirement age. Eligibility terminates if the pensioner is no longer invalid, or works on a regular basis. Eligibility criteria for invalidity pension depend on the age and the length of the insurance period of the insured. The minimum invalidity pension for Class III is equal to the minimum old age pension.

From January 1 2012, the invalidity pension was terminated and replaced by the *invalidity benefit*. The transition between the Invalidity Pension system and the Invalidity Benefit system requires a revision of the process mainly based on a medical check-up. No data are available yet.

Other disability benefits are non-contributory benefits and paid by the central budget:

Invalidity Annuity (*rokkantsági járadék*) is paid to individuals above 18 years old who lose 80% of their working capacity before reaching the age of 25. (This 80% rate was changed to 70% from 1st of January 2016) Its monthly amount is 33,330 HUF. Those adult persons that are not eligible for invalidity annuity, but their working capacity has decreased under the minimum 67% and that get a Disability benefit or Annuity for the Blind, are eligible for Regular Social Support (*Rendszeres szociális segély*).

Temporary Invalidity Annuity (*átmeneti járadék*) and **Regular Social Annuity** (*Rendszeresszociális járadék*) are due to invalid persons, whose working capacity is reduced by 50%, who cannot find a rehabilitation workplace, and who are not entitled to old age, invalidity or work accident-related disability pension, nor to unemployment benefit, sickness benefit, work accident sick pay or maternity allowance. The Temporary Invalidity Annuity can be paid also to those people who are five years from retirement age and have completed the necessary contribution payment period. The annuity amounts to 75% of the old age pension that he/she would be entitled to upon reaching retirement

The Regular Social Annuity is paid to those people who are eligible and have not yet reached retirement age, but have contributed for at least half of the contribution payment periods necessary for receiving an invalidity pension. The Regular Social Annuity is 27,000 HUF per month in 2011. From January 1 2012, both of the temporary invalidity annuity and the regular social annuity were terminated, instead of these the invalidity benefit was introduced and linked to these.

Disability Benefit (*fogyatékosági támogatás*) is paid to those persons above the age of 18 whose severe disability (visual, hearing, mental, physical or multiple impairment or autism) is permanent and that are unable to live independently. It is a flat-rate benefit. It amounts to 80% of the minimum old age pension in case of multiple disadvantages or a severe disadvantage that makes any kind of self-help impossible; in any other cases it amounts to 65% of the minimum old age pension.

People with severe disabilities can also apply for specific transport allowances:

- Transportation support (*közlekedési támogatás*) for transportation costs of disabled people;
- Support for car purchase (*személygépkocsi szerzési támogatás*);
- And Support to make a car barrier-free (*személygépkocsi átalakítási támogatás*).

Employment injuries and occupational diseases

Contributory benefits for employed people in case of work-related injuries or occupational diseases.

Work Accident Sickness Benefit (*baleseti táppénz*) is payable for a maximum of one year with the possibility of an extension for a further year. Its amount is 100 per cent of the average income over the previous year.

Work Accident Annuity (*baleseti járadék*) is payable to a person who lost his/her working capacity by 15-67% as a consequence of an employment injury. Its amount depends on the degree of invalidity. Its amount is expressed as a percentage of monthly average. If the reduction of the working capacity does not exceed 25 per cent the annuity is payable for a maximum of two years, while if it exceeds 25 per cent then there is no time limit.

Work Accident-related Disability Pension (*baleseti rokkantsági nyugdíj*) is paid if the capacity for work is more than 67% reduced as a consequence of a work accident, or at least 50% reduced due to silicosis. It is paid according to the similar three classes used in the determination of Invalidity Pension. The Class I is the 70%; the Class II is the 65% and the Class III is the 60% of the monthly average earnings, and the minimum benefit amount is changed year by year. This pension was terminated from the beginning of 2012, and new special entitlement hasn't been designed for them yet. They are instead covered by invalidity benefit.

Unemployment benefits

Unemployment Benefit¹, Job-Seekers Benefit (*munkanélküli járadék; álláskeresési járadék*): Employees and self-employed persons having lost their job are entitled to Unemployment Benefit if they have been employed for at least 360 days during the previous 3 years, if they became involuntarily unemployed, have no entitlement for pension, get no sickness benefit and seek a job and co-operate with the labour centre. It is paid from employee and employer contributions paid to the Labour Market Fund. From 2012 the benefit entitlement lasts for a period of maximum 90 days, the amount is equal to the 60% of the previous wage and the maximum of the amount is the 100% of the minimum wage.

Table 1.2 Chararcetricistic of unemployment benefit

2018-2021		
Eligibility	Contribution period	Be employed for at least 360 days during the previous 3 years
	Other conditions	No entitlement for pension, get no sickness benefit and seek a job and co-operate with the labour centre
	Eligibility of self-employed	Yes
Payment	Contribution base	Previous income
	Amount	Equal to the 60% of the previous wage
	Maximum	The minimal wage
Duration	Maximum period	90 days
Subject to	Taxes	Yes
	SIC	Yes, but only the pension contribution (10%)

Pre-retirement Unemployment Assistance (*nyugdíj előtti álláskeresési segély*): Unemployed persons may apply if they are within five years of reaching retirement age, received unemployment benefit for at least 45 days and have exhausted the entitlement for unemployment benefit, have a sufficient contribution period for retirement (normally 20 years), have no prospect of finding a suitable job, and co-operate with the Labour Centre. The amount is the 40% of the minimum wage. If the entitled person's average wage is lower than this amount, the amount of the pre-retirement unemployment assistance is the 40% of the previous wage.

¹ After 1st of November 2005 the official name of unemployment benefit was changed to 'job-seekers benefit' (*álláskeresési járadék*)

Wage compensation scheme Covid-19

The wage compensation (EUROMOD variable *bwkmcee_s*) covers 70% of the worker's gross earnings as well as the statutory employer's social security contributions. A reduction of hours is also possible.

Wage substitution benefit (keresetpótló juttatás): Those employees participating in an intensive training course offered by the employment office are provided with a wage substitution benefit of an amount between the 60 and 100% of the public work income.

Public work, fostered workers (közfoglalkoztatás, közfoglalkozottak): After 90 days of unemployment, those able to work will lose their benefits unless they agree to do public works. Each unemployed who is able to work and is older than 16 can be a foster worker and registered job seeker. The amount of the public work income is 81 530 HUF from 2018 to 2020 and 85 000 HUF in 2021.

Benefits for parents, adoptive parents and foster parents

Maternity Allowance (terhességi-gyermekágyi segély): Mothers giving birth to a child are entitled to two types of benefits depending on their previous employment situation. If they are insured for at least 180 days during the last two years before delivery they are entitled to maternity allowance. It is paid for 24 weeks (4 weeks before and 20 weeks after the planned date of birth, or 24 weeks after the date of birth, depending on the mothers' choice) and its amount is 70% of the daily average gross earnings of the previous year.

Maternity Grant (anyasági támogatás): Resident women who give birth, had previously participated in prenatal care at least 4 times, and have no insurance are entitled to a one-off lump-sum payment of 225% of the minimum old age pension or 300% in case of twins (64,125 and 85,500 HUF from 2017 to 2020).

Child Care Allowance (gyermekgondozási segély): This is a universal entitlement financed by the state budget that provides a flat-rate benefit to parents who stay away from work to care for their children under the age of 3 (under age of 10 in case of permanently ill or severely disabled children) or for grandparents who care for their grandchildren aged between 1-3 years in the household of the parent. In case of twins the allowance is paid until the children reach the compulsory schooling age (usually 6 years). The monthly amount is equal to the minimum old age pension (28,500 HUF). In case of twins the amount is doubled. The mothers may have gainful activity after the 1st year of age of the child (She may have full time job as well).

Child Care Fee (gyermekgondozási díj): is a contributory benefit, which is paid after the expiry of Maternity Allowance until the child reaches 2 years of age. From 1st of January 2014 the mothers may have gainful activity after the 1st year of age of the child, and from 1st of January 2016 the mothers may have gainful activity without limitation (She may have full time job as well). The eligibility criterion is at least 180 days of insurance during the last two years before delivery of the parent who wants to take care of the child at home. Its amount is 70% of the daily average gross earnings of the previous year with a maximum of 70% of twice the minimum wage.

Child Raising Support (*Gyermeknevelési támogatás*): It is a universal benefit financed by the state budget for parents who raise three or more children in their own home, if the youngest child is between 3 and 7 years old. The monthly amount is equal to the minimum old age pension, irrespective of the number of children.

Family Protection Action Plan (*Családvédelmi akcióterv*) from 1st of July 2019:

The action plan includes: 1. interest-free, all-purpose loan; 2. extension of loan program to support home purchase; 3. subsidy for car purchase for large families; 4. mortgage reduction; 5. exemption from personal income tax; 6. 21,000 new crèche places will be established over three years; and 7. childcare leave allowance for grandparents.

Child benefits

In Hungary a well-developed child benefit system is in operation consisting of universal and means-tested benefits.

Family Allowance (*családi pótlék – nevelési támogatás, iskoláztatási támogatás*) is a universal benefit financed by the state budget. It is paid to the parent from the birth of the child to the termination of studies in the compulsory education system (usually 0-16 years), and then during secondary school education or vocational training of the child (up to 20 years of age). According to the provisions of the Act on National Public Education, a child becomes eligible for compulsory schooling in the year in which he or she reaches the age of six by 31 August of the following year at the latest. A child who is recommended by the expert committee is admitted to kindergarten for one additional year of education and then becomes compulsory. Its amount depends on the number of children in the family, whether a single-parent family or not and whether the child is disabled. In the month of July double amounts are paid in order to support schooling.

The monthly amounts of the family allowance differ by number of children and family composition as shown below. The amounts were the same for these years.

2018-2021:

1 child in the family: HUF 12,200,
1 child, single parent: HUF 13,700,
2 children in the family: HUF 13,300 per child,
2 children, single parent: HUF 14,800 per child,
3 or more children in the family: HUF 16,000 per child,
3 or more children, single parent: HUF 17,000 per child,
permanently ill or severely disabled child in the family: HUF 23,300,
permanently ill or severely disabled child, single parent: HUF 25,900,
child in foster home/at foster parent: HUF 14,800.

Regular child protection allowance (*rendszeres gyermekvédelmi kedvezmény*): From 2006 the local government provides regular benefit for the child if the per capita income of the family caring for him or her is less than the current minimum old age pension (this limit is 130% of the minimum old age pension from 2009) and remaining in the family is not against the interests of the child. From 2006 the regular child protection benefit was included into the family allowance. The entitlement for benefit in kind, related to the previous regular child protection benefit, has remained (free dining, free

school-books) but the name of support has changed to **regular child protection allowance**. For those who are entitled to this allowance it is granted a 5 800 HUF support in cash twice a year.

Social assistance

The specific forms of social allowances are means-tested. They are provided by local governments, which have some competence in specifying the eligibility criteria. The financing of these benefits comes from the central budget by 90%, while local authorities pay the rest.

Regular social benefit – Active age persons benefit from 2015 (rendszeres szociális segély, 2015-től aktív korúak ellátása): This is a social assistance scheme to ensure a minimum standard of living. The general regular social benefit was erased from 2015 and the main eligible regulation of the regular social benefit changed from 1st of 2015, If:

-the person is in active age and has low income (total family income < consumer unit * 92% of the minimum pension) and

-disabled

-or dependent child/ren in the household (younger than 14 years old).

Only one person in a family is entitled to this support. The assessing of the entitlement and the amount of the assistance are based on the income projected to the consumer unit instead of the previous income per capita. Each member of the consumer unit is weighted by a rate which shows the structure and consumption of a family: the first adult member of the family and the disabled child's rate is 1,0, the ratio of the spouse and other adults is 0.9 while each child is given a weight equal to 0.7. The amount of support is variable and supplements the family's effective total income to the limit of the entitlement (this limit is the 90% of the minimum public workers income). The maximum of the monthly support is 46 662 HUF in 2015.

The amount is equal with the consumer unit multiply 92% of the minimal pension minus the total income of the family. The maximum of the benefit is 46.662 HUF/month (equal of the 90% of the minimim public workers income). But if somebody in the family gets out-of-work assistance the maximum is the 46.662 HUF minus the amount of the assistance minus 22.800 HUF (22.800 HUF = 80% of the min.pension)"

Out-of-work allowance (foglalkozást helyettesítő támogatás): If the person doesn't fit the condition to get regular social benefit, but has no work, and is in working age. The amount is equal to the 80% of the minimum pension.

Nursing Fee (ápolási díj): Paid to people who provide permanent care to a disabled relative:

–severely disabled or permanently ill and under the age of 18. At least the minimum amount of old age pension is paid if the claim is based on the own right of the claimant. The amount paid is higher than the minimum old age pension: in 2018 – 32,600 HUF; 2019 – 37,490 HUF; 2020 – 39,365 HUF and 2021 – 41,335 HUF per month.

– Those nursing severely disabled person in need of increased care are provided with a higher amount of nursing allowance: normally higher by 30 per cent than the normal nursing allowance.

–In case of nursing a permanently ill person above 18 years of age, the nursing fee is provided by the local government on a discretionary basis. The amount is fully financed by the local government's budget and it corresponds to the 80% of the normal nursing fee allowance.

Old age Allowance (*időskorúak járadéka*): This is a social assistance scheme to ensure a minimum income during old age in the absence of an old age pension. The amount of the benefit is determined by the income of the person (and his/her partner or spouse).

Conditions of eligibility:

- Reaching retirement age and income combined with his/her spouse or partner is below 80% of the minimum old age pension,
- Single person, his/her income below 95% of the minimum old age pension,
- Single person, age above 75 years, his/her income below 130% of the minimum old age pension,

Home Maintenance Support (*lakásfenntartási támogatás*): This is a means-tested benefit provided by the local government for a family or individual who lives in a home not exceeding a specified size, provided that there is no income from the use of that home. People can be eligible to this benefit by three rights:

- a) Normative home maintenance support according to the rules of the Act on Social benefits;
- b) If they participate in a debt-management procedure;
- c) Local home maintenance support according to the conditions specified by the local authority in a local decree.

A normative home maintenance support is provided if:

- the monthly income per person in a household does not exceed 150% the minimum amount of the old age pension (this limit decreased to 250% of the minimum pension from September 1 2011); and
- the acknowledged costs of home maintenance are equal to 20% or more of the total monthly income of the household.

The acknowledged size of the flat is maximum

- 35 m² in case of one-person households,
- 45 m² in two-person households,
- 55 m² in three-person households,
- 65 m² in four-person households,
- if more than four people are living in the household then 65 m² plus 5 m² for each additional person but maximum the real size of the flat.

The minimum amount of the benefit is 2,500 HUF per month. The local authority can depart from these minimum rules and can specify more favourable conditions.

The regulation of this benefit changed at 1st of March 2015. Regarding this the local government declare the rules of this benefit (including the amount of the benefit) and

not the social act, hence the benefit can be different from local government to local government.

- **Further benefits (not simulated)**

Advance on maintenance payments (*tartásdíj megelőlegezése*): This benefit is paid to the parent who takes care of a child if the child maintenance is temporarily irrecoverable by/from the other parent obliged to maintain the child. If the person who takes care of the child cannot maintain the child and the income per person in the applicant's family does not exceed three times the current minimum amount of old age pension the caring parent is entitled to advance maintenance payment. Its amount is equal to the amount of child maintenance decided by the court.

Irregular Child Protection Benefit (*rendkívüli gyermekvédelmi támogatás*) is paid to families with temporarily cash flow problems or facing emergency situations that seriously threaten their standard of living. The amount is designated by decree of the respective local government.

Debt-management Benefit (*adósságcsökkentési támogatás*): beside the home maintenance support, people with overdue debts can receive a cash benefit, transferred by local governments to the creditor. The amount of debt-management benefit is the result of an agreement between the local authority, the creditor and the beneficiary. The other pillar is debt management counselling, which is mandatory for beneficiaries.

Public Health Benefit (*közgyógyellátás*): Socially disadvantaged people may receive a Public Health Card by which they can obtain specific medicine and therapies free of charge.

Temporary Benefit (*átmeneti segély*): This is a means-tested benefit provided by the local government and regulated by a local government decree. It can be provided to persons whose subsistence is occasionally or long-lastingly endangered. It can be provided occasionally or monthly. The local government can regulate the entitlement conditions, but the household income per person taken into account during the judgement of the claim cannot be lower than the old age pension minimum, or 150% of it in case of a one-person household

Funeral Support (*temetési segély*): This is a means-tested benefit provided by the local government and regulated by a local government decree. Somebody may receive a funeral support if he/she provided for the funeral of somebody although it was not his/her duty, or if it were his/her duty but bearing the funeral costs would endanger his/her existence. The local government can regulate the entitlement conditions, but the household income per person taken into account during the judgement of the claim cannot be lower than the old age pension minimum, or 150 per cent of it in case of a one-person household. The amount of the funeral benefit cannot be lower than 10 per cent of the locally usual cheapest funeral. The local authority, in its local decree, can complete the benefits defined in the Act on Social benefits or can define other kinds of cash benefits as well. The local authority, in its local decree, can complete the benefits defined in the Act on Social benefits or can define other kinds of cash benefits as well.

Examples of other social benefits provided by local governments:

- Home renting support (lakbértámogatás),
- Interest-free social loan (kamatmentes szociális kölcsön),
- Meals support (étkezési támogatás),
- Local transportation support (helyi utazási támogatás).

1.3 Social contributions

In Hungary, social insurance can be divided into two large categories: pension scheme and health insurance.

Since 1 January 1998, the Hungarian pension scheme has been financed jointly by the compulsory pension scheme of social insurance and, in addition, by private pension insurance (till 2011). It is also possible to complete a social insurance pension through voluntary pension funds. In the case of voluntary pension funds, payment is unsolicited, there are no provisions of the law concerning the minimum or maximum amount, and the minimum amount is defined by the statutes of the funds. Membership fees can be assumed by the employers.

In this sense, health insurance is not financed jointly, but through voluntary health funds, beside the compulsory social insurance, there is still an opportunity to obtain additional health provision.

Participation in the system of social insurance is compulsory, if legal relations provided by the law are established, the compulsory contractual insurance relations come into being. Both employers and employees, and also joint and private companies, and entrepreneurs have to make contributions both to the pension insurance and to the health insurance funds. The amount of contribution payable by both parties is calculated on the basis of the gross – before taxation – wages, income.

Employee social insurance contribution

The rate of contribution payable by employees, pension social insurance is 10%. The pensioners who have employee income at the same time have to pay pension insurance contribution too.

The health insurance contribution was separated to 'in-kind' and 'monetary' part. The monetary part of the employees' health insurance contribution is 3% and the in-kind part is 4 % from 2015 to 2018. The pensioners who were working and had old-age pensions too had to pay the in-kind part of the health insurance contributions.

Pensioners employed 'in their own right', pay neither pension nor health contribution. If a pensioner, apart from the pension, receives income subject to contribution payment (as an employee or an entrepreneur), contributions payable by employees do not need to be paid, but he/she is still obliged to fulfil obligations of employers. (Reasonably, as an employee the employer and as a partner or private entrepreneur, the entrepreneur.)

From 2014 a new SIC allowance was established. If the tax payer has lower income and can't use the whole amount of the family tax allowance (see below), she/he has a deduction in the amount of the SIC by the 16% (from 2015: 15%) of the remainder family tax allowance. First, the remainder tax allowance cuts down the health insurance contribution (7% of the income), and secondly this deducts the pensions insurance contribution (10% of the income). The family SIC allowance can be shared between the two parents (as the family tax allowance).

Employer social insurance contribution

From 2012 employer part of the health insurance and pension insurance (with the labour market contributions) were erased, instead of these 27 % social contribution tax was introduced, this rate was decreased in 2017 to 22%, to 19,5% in 2018; 17,5% in 2020 and 15,5% in 2021.

Self-employed social insurance contribution

Joint and private entrepreneurs are obliged to pay both the 27% social contribution tax (19,5% in 2018 and 2019, 17,5% in 2020 and 15,5% in 2021) by employers and the 10% pension contribution payable by employees. Joint and private entrepreneurs are also obliged to pay the employee’s part of the health insurance contribution.

In the case of joint businesses and entrepreneurs, health insurance contribution is calculated on the basis of the income paid to the entrepreneur as personal agency, but at least the amount of the minimum wage. In the case of private entrepreneurs, contribution is calculated on the basis of the entrepreneurial withdrawal, in the case of presumptive taxpayers, the presumptive income tax is based on at least the amount of the minimum wage.

For those who pay simplified business tax (EVA) contribution payable is calculated on the basis of the minimum wage, but they can choose to declare higher income. If apart from having a partnership or a private enterprise, someone has another legal relation providing social insurance (employee, full-time student etc.), social contribution is calculated on the basis of income actually received. In the case of EVA, contributions do not need to be paid. Joint and private entrepreneurs are exempt from paying contributions if they receive sick-pay, maternity allowance, child-care allowance, child rising support, child-care fee, nursing fee, except if they personally continue their activities during this time. Contributions are not to be paid for tax-exempt payment in kind.

The following table shows the changes of the pension and the health insurance contribution year by year.

Pension insurance contribution from 2018 to 2021

		2018	2019	2020	2021
Pension insurance contribution (nyugdíjjárulék)	Employees	10%	10%	10%	10%
	Employers	*	*	*	*
	Upper limit	**	**	**	**
	Self employment	10%+ *	10%+ *	10%+ *	10%+ *

* Replaced by the social contribution tax

** Upper limit erased at 1st of January 2013

Health insurance contribution from 2018 to 2021

			2018	2019	2020	2021
Health insurance contribution	Employees	In-kind	4%	4%	4%	4%

(egészségbiztosítási járulék)		Monetary	3%	3%	3%	3%
	Employers	In-kind	*	*	*	*
		Monetary	*	*	*	*
	Self employment			7% + *	7% + *	7% + *

*Replaced by the social contribution tax

Other income related contributions

Employee contribution is calculated on the basis of gross wages received from the employer. Exempted are those who receive or become entitled to receive old age pension, disability pension or pension for work accident related disability, while being in employment. Employees are obliged to pay the contribution. Its rate is 1,5% since 1st of September 2006. The pensioners who are employees at the same time do not have to pay this employee contribution.

Employer contribution is calculated on the basis of the gross wage – before taxation – accounted and paid to the employee with regard to his/her employment, including severance pay, jubilee reward, fees paid during the time of sick-leave, taxable payment in kind, meal contribution, holiday contribution and 25% of the tax payable for a company car provided with regard to employment. The employer contribution is payable by the employer.

Entrepreneurial contribution is paid by joint business on the basis of the income paid to the entrepreneur with regard to his/her personal assistance, by private entrepreneurs on the basis of the entrepreneurial withdrawal and by private entrepreneurs subject to presumptive taxation on the basis of the minimum wage. The minimum of the contribution base is always the amount of the minimum wage provided by the law. Exempted are those who receive or become entitled to receive old age pension, disability pension or pension for work accident related disability and those who are employed at the same time and work at least 36 hours a week.

From 2010 these separate contributions (the employee, the employer and the entrepreneurial) were erased; in place of them, employers pay 1%, employees pay 1,5% and the self-employed pay 2,5% of the contribution base; these contributions have been called '**labour market contribution**' (*munkaerő-piaci járulék*). From 2012 the employer part of the labour market contributions was erased, and this is now part of the 27 % social contribution tax (see above).

Vocational training contribution is payable by every economic society and private entrepreneur, except for those paying EVA or flat-rate tax. Contribution is calculated on the basis of expenditure on wages, its rate is 1.5%.

1.4 Taxes

Direct taxes

Personal income tax (személyi jövedelemadó): The system of personal income tax was introduced in 1988. The system in itself has basically remained unchanged but several simplifications were carried out over the years (out of the eleven originally introduced tax rates, by 2012 there remained only one). However, it is still typical of the system that types of incomes are differentiated in detail; there are tax credits of several kinds

and members of certain sectors, primarily those working in the field of agriculture (primary producers, small-scale producers, assisting family members) enjoy differential treatment.

The personal income tax is the second most important source of revenue for the budget. Every active citizen is obliged to file a tax return at the end of the tax year, which can be done in three different ways: either by self-assessment or, if one has a workplace and has other income only from very few and well-defined sources, one can ask the workplace to fill in and file a tax return for him/her, and thirdly tax authority fills the form. As it will turn out below, the Hungarian tax regulations are rather complex, so there is an option of filling in a detailed data sheet and asking the tax authorities to calculate the amount of tax to be paid. Small-scale producers who work in the field of agriculture and whose yearly revenue is between 600,000 and 3,000,000 HUF can also make a simplified declaration of tax return, which substitutes for the filing of the personal tax return.

Incomes to be consolidated are taxed according to the tax table. Tax credits are only demandable on the basis of the amount of tax calculated this way. Incomes taxed separately can be divided into two groups. In the first group there are income sources of different kinds, in this case separate tax rates apply. In the second group, we talk about flat rate taxation. This is only a choice in the case of certain activities and even then, there are further conditions to be fulfilled.

The simplified business tax (EVA), as a form of taxation was announced on 1 January 2003 and started from 2004. EVA addresses small-scale enterprises, not only with the aim of reducing tax burdens but also in order to simplify administration. This form of taxation provides an opportunity for the legal transformation of revenues into freely utilizable income, it is easy to calculate and there are relatively less rates and taxes to be paid. From 2013 a new form of tax was introduced for the smaller enterprises, this is the 'itemised tax of small taxpayers' (KATA), which one is more popular between the taxpayers year by year (about the EVA and KATA regulation, see the details below).

Income-types to be consolidated:

- Wage income from employment
- Social security benefits with regard to employment, like sick pay, child-care fee, maternity allowance
- Income originating from casual work
- Income received in return for foreign service
- Unemployment benefit, incentive benefit for job seekers, complementary wages, wage substituting benefit, work accident allowance, compensation substituting wage income from employment
- Income originating from being an elected functionary, a member of Parliament or a Local Government, subsidies received in connection with these activities (meal, clothing, holiday, housing contributions), taxable insurance fees due to these activities, income originating from securities.
- Income originating from refund of expenses above the amount of certified expenses.
- Part of severance pay (for the tax year or earlier) concerning the year 2005.
- Withdrawal of a private entrepreneur
- Income gained by an assisting family member in a joint business.
- Income originating from activity of agricultural primary producers. This kind of income needs to be declared only if it is more than 600,000 HUF.

- Income originating from intellectual activities; that is income received for a composition that enjoys legal protection of copyright and that was earned outside of employment or enterprise.
- Other income originating from independent activities (not carried out as a private entrepreneur), not intellectual income.

The tax base is made up of the incomes to be consolidated. Tax is calculated on the basis of the tax base. In 2013 a fixed flat tax system was introduced with a tax rate of 16% of the tax base, this rate was changed to 15% from 2016.

Tax credits:

Family tax allowance (from 2011) (*családi adókedvezmény*): In 2011 the regulation of the family tax credit was changed transforming the family tax credit into a family tax allowance. In practice, while until then the family tax credit was deducted from the income tax, from 2011 the tax base is reduced before calculating income tax. At the same time the amount of the tax allowance changed too, and amounts are: 62.500 HUF monthly per child if there are one or two dependent children in the family; and 206.250 HUF monthly per child if there are three or more dependent children in the family. In 2016 the amounts changed to 66.670 HUF monthly amount per child if there is one dependent child in the family; 83.330 HUF monthly amount per child if there are two and 220.000 HUF monthly amount per child if there are three or more dependent children in the family. In 2018 and 2019 only the ‘two children category’ changed to 116.670 HUF (2018) and 133.330 HUF (2019 - 2021) monthly amount per child if there are two dependent children in the family. From 2020 women with 4 children don't pay personal income tax.

No negative tax allowance is allowed. (The possibility of sharing between the parents remained.) From 2014 if the tax payer has lower income and can't use the whole amount of the family tax allowance, she/he has a deduction in the amount of the SIC by the 16% (15% from 2016) of the remainder family tax allowance.

Tax credit for serious disability: Persons with a disability level of at least 67% are eligible for tax credit for serious disability. The personal income tax amount to be deducted due to **serious disability** is the 5% of the minimum wage per month.

Non-simulated tax credits:

Although the detailed system of tax credits was considerably simplified at 2007, most of the items were terminated, but several allowances stay in the tax system. The most important are: allowance after the amount paid to a **voluntary health fund**; allowance after the income originating from **intellectual activities**; allowance for the amount spent on paying off a **loan for buying accommodation**; allowance for amounts paid towards **tuition fees** in higher and adult education; allowance for **primary producers** in agriculture: this allowance is the amount of tax payable for the income raised by way of primary production or small-scale production; allowance for **payments made towards public interest organisations**, the Church, with the aim of assumption of obligations for purposes of public interest, allowance **for payments made towards public interest organisations of high priority**.

Simplified Business Tax (*egyszerűsített vállalkozói adó*) erased in 1st of January 2020: The simplified business tax (EVA), as a form of taxation was announced on 1 January 2003. EVA addresses small-scale enterprises, not only with the aim of reducing tax burdens but also in order to simplify administration. This form of taxation provides an opportunity for the legal transformation of revenues into freely utilizable income, it is easy to calculate and there are relatively fewer rates and taxes to be paid.

The main characteristics of those belonging to EVA are made quite clear by the provisions of the law. EVA, as a form of taxation, can be chosen by private entrepreneurs, unlimited partnerships, deposit companies, limited liability companies, co-operatives, lawyers' offices etc., if the taxpayer carried out its activities in the previous tax year continuously, without transformation and its revenues in the two previous tax years and, it is reasonable to expect that also in the current tax year they will be no more than 30,000,000 HUF from 2012. Economic societies can choose this form of taxation, if every member of the society is a private person and the economic society does not have a share in another economic society. There are some further restrictions ordained by the law, for example, it is only possible to become subject to EVA if tax authorities have not previously imposed a fine due to negligence on the company, if the company does not produce and does not circulate products imposed by excise tax, does not carry out any activities that require the permission of the Hungarian Financial Supervisory Authority or the Gaming Board.

Calculation of EVA is based on the amount of total revenues including VAT. The tax rate is 37% from 2012. Those paying EVA are exempted from paying the VAT, they do not have to pay entrepreneurial personal income tax and if they have no other revenues, they do not have to file a personal income tax return.

From the above, it emerges that the choice of EVA is reasonable for those enterprises that obtain revenues without much expense, or in the case of which the expenses cover partly entrepreneurial and partly household demands. It cannot be precluded, especially within a couple of years of the introduction of a new method of taxation, that certain people chose this opportunity by mistake. Still, we can assume that, in the case of the majority of the companies, the results remaining after taxation can predominantly be considered as incomes of households and EVA can be regarded as a tax payable by households.

Itemised tax of small taxpayers (*kisadózó vállalkozások tételes adója*): This form of taxation was announced on 1st of January 2013. The itemised tax of small taxpayers (KATA) as a form of taxation, can be chosen by private entrepreneurs, limited liability companies, etc. when the taxpayer expected income does not exceed 6,000,000 HUF (12,000,000 HUF from 2017). If the weekly working hours is at least 36 hours, the tax amount is 50,000 HUF per months; if the self-employment works less than 36 hours per week, the tax amount is 25,000 HUF per months. From 2021 the tax changed significantly: Over net 3 million HUF income per year per 1 specific partner, the tax rate is charged to 40% tax of the net income.

Separately taxed income types are the following:

- Flat-rate taxation income of private entrepreneurs: In the case of flat-rate taxation, the accountable cost ratio is fixed, the ratio itself is defined by the law, depending on the type of activity and it varies between 40-87%. Tax is payable for the revenues remaining after the cost ratio was deducted.
- Income of private entrepreneurs, liable to entrepreneurial personal income tax and entrepreneurial dividend tax. The personal income tax of entrepreneurs is 16% of the entrepreneurial tax base. The entrepreneurial tax base basically means the

revenues remaining after costs were deducted but the exact system of rules is rather complex. The entrepreneurial dividend base is the entrepreneurial income remaining after taxation. Tax payable for the entrepreneurial dividend base is 20% up to 30% of entrepreneurial withdrawal; above that it is 35%.

- Flat-rate taxation income of small-scale agricultural producers. The accountable cost ratio is fixed, depending on the type of activity; it is between 80-94%. The amount of tax payable is the same as in the case of flat-rate tax of private entrepreneurs.
- Flat-rate taxation income of hosts receiving paying guests. The tax amounts to 32,000 HUF a year, out of which 80% is payable in the form of personal income tax and 20% as flat-rate health contribution. The amount of tax payable does not depend on whether guests were received throughout the year or only part of the year.
- Income originating from the sale of real-estate. Tax rate is 20% and it does not need to be declared, if the real-estate was obtained before 1988, or if there was no income originating from it. Allowance for getting an apartment is the duty of those who buy or build real-estate inland for themselves or for near relatives, either within 12 months before the sale or within 60 months afterwards. The amount spent for purchasing it can be deducted from the income originating from sale.
- Income originating from the sale of movable property. Tax rate is 20%, however, if the income originating from the sale of movable property is not more than 200 000 HUF, the sale is exempt from taxes. If it is more than 200 000 HUF, it needs to be declared but 40 000 HUF can be deducted from the tax.
- Income originating from life-annuity contract. Tax needs to be paid if the life-annuity contract was made after 1996 and life-annuity is received without compensation. The tax rate is 35%. It is tax-exempt: 1) if the contract ensuring support for life, the testamentary contract or the life-annuity contract was made with a private person; 2) if the contract ensuring support for life, the testamentary contract or the life-annuity contract was signed between a pensioner and an organisation financed by the state budget or a local government; 3) if life-annuity was received in return for real estate, right of property or movable property.
- Income originating from rate of exchange gain. Tax rate is 25%.
- Income originating from securities lending. Tax rate is 20%.
- Income raised by right of dividends. Tax rate is 20% up to 30% of the financial deposit of the person entitled to receive the dividend. Above that it is 35%.
- Income raised by right dividend, taxable abroad. Tax rate is 20%. Tax justifiably paid abroad can be deducted, but if Hungary does not have a convention ruling out double taxation, at least 5% of the tax has to be paid in Hungary. etc.

Tax liability is the total of the amount of tax payable for incomes to be consolidated reduced by allowances and the amount of tax payable for incomes taxed separately. Tax return does not need to be filed by those who only have tax-exempt income. Tax-exempt incomes are the following:

- pensions
- severance pay received with regard to the cessation of the right for widow's pension
- supplementary income
- income substitution for the unemployed
- subsidy received prior to beginning independent activities, joining an economic society or founding an economic society, based on provisions of the law or international contracts

- maternity benefit given by the state, regarding social considerations or within the system of social security
- social benefits
- temporary benefits
- funeral support given in accordance with the provisions of the social law by the local government, by an interest organisation or by the employer
- home maintenance support, subsidy for rental of accommodation
- orphans' allowance
- foster-parent fee, special provision due to foster parents
- after-care provision
- old age allowance
- personal allowance of the blind
- disability allowance, travelling support for seriously disabled private persons as provided by the law
- family aid for the relatives of conscripts and those carrying out civil service, monetary supply to disabled serviceman, national fee for care as provided by the law
- income of interest payment received from a private person or from a pay-office, if it is maximum 5% more than the base rate of the central bank interest
- debt management service

Among tax-exempt incomes, payment in kind supplementing wages also needs to be mentioned. One of the most frequently used forms is the provision of lunch on vouchers. The regulation of this was changed year by year. Another significant item is the provision of holiday contributions. These can be given for free, either in the form of holiday services or in the form of holiday checks and can also be used by close relatives, either together with or separately from the employee. Its limit is the amount of the minimum wage, in 2010 73,500 HUF. Schooling support can also be provided tax-exempt for the parents at the beginning of the school year, up to 22,500 HUF in 2010. Finally, so-called “presents of little value” can also be given to employees, up to 10% of the minimum wage.

Local taxes (*helyi adók*): Problems of local taxes are the result of territorial division. There are more than 3 100 local governments in Hungary, all of which might have their own provisions concerning tax types below. They have a legal right to levy taxes and even though there is a maximum limit, the actual regulations are framed by the local governments.

Indirect taxes

Value Added Tax: In Hungary, VAT was introduced in 1988. VAT is to be paid after each and every product and service sold inland and after the import of products. VAT is payable both by private persons and by legal entities, which means that there are only estimates available concerning the size of VAT paid by the population. VAT revenues form the major source of income for the state budget. The general rate of VAT is increased from 25 to 27% in 2012, with the exception of the products and services listed in the regulation (more details in the Feasibility Study).

There are further indirect taxes and levies collected by the National Tax and Customs Administration. They play a minor role relative to VAT, but as an example they are as follows: excise tax; environmental protection; charge for environmental load; gambling tax; registration tax; energy tax.

2. SIMULATION OF TAXES AND BENEFITS IN EUROMOD

2.1 Scope of simulation

Not all the taxes and benefits mentioned in the previous section are simulated by EUROMOD. Some are beyond its scope entirely and are neither included in the EUROMOD database nor in the output income variables (e.g. Value Added Tax). Others are not possible to simulate accurately with the available data (old age benefits and unemployment benefits). They are included in the database and may be chosen as components of output variables, but the rules governing them may not be changed in the model. Table 2.1 and Table 2.2 classifies each of the main tax-benefit instruments (and some minor ones introduced above) into one of these groups and provides a brief explanation as to why the instrument is not fully simulated if this is the case.

Table 2.1. Simulation of benefits in EUROMOD

	2018- 2021	2018- 2021	Why not fully simulated?
Old age benefit	POA	I	No data on contribution history
Early Retirement Pension	POA	I	No data on contribution history
Advanced Pension	POA	I	No data on contribution history
Temporary Widow(er)'s Pension	PSU	I	No data on contribution history
Permanent Widow(er)'s Pension	PSU	I	In the EU-SILC database if the survivor's benefits paid after the standard retirement age these benefits are included under the old age benefits.
Parental Pension	PSU	I	No data on contribution history
Orphan's Allowance	PSU	I	No information about the eligibility conditions
Absence Fee	BHL	I	Data available is not sufficient to simulate all eligibility conditions
Sickness Benefit	BHL	I	Data available is not sufficient to simulate all eligibility conditions
Invalidity Annuity	PDI	I	No information on disability
Temporary Invalidation Annuity	PDI	I	No information on disability
Disability Benefit	PDI	I	Data available is not sufficient to simulate all eligibility conditions
Work Accident Sickness Benefit	BHL	I	No information about the sickness
Work Accident Annuity	BHL	I	No information about the sickness
Work Accident-related Disability Pension	PDI	I	No information about the sickness
Unemployment Benefit	BUN	S	No data on contribution history (coded (PS) but currently switched off)
Pre-retirement Unemployment Assistance	BUN	I	No data on contribution history
Incentive Benefit for Job-seekers	BUN	I	No data on contribution history
Maternity Allowance	BMACT	I	No data on contribution history
Child Care Free Maternity Grant	BPLCT		
Child Care Allowance	BMANCc	S	
Child Raising Support	BCCNCc	S	
Family Allowance	BCCLT	S	
Regular Child Protection Allowance	BCHNM	S	
Old age allowance	BCHMT	S	
Regular benefit	POAMT	S	
Home maintenance support	BSA00	S	
Nursing fee	BSAHO	PS	No information about the size of flat
	-	I	No information about the eligibility conditions

Notes: "-": policy did not exist in that year; "E": *excluded* from the model as it is neither included in the micro-data nor simulated; "I": *included* in the micro-data but not simulated; "PS" *partially simulated* as some of its relevant rules are not simulated; "S" *simulated* although some minor or very specific rules may not be simulated.

Table 2.2 Simulation of taxes and social contributions in EUROMOD

2018-2021		Why not fully simulated?	
Personal income tax	tin PS		No information about all of the tax credits
Corporate tax	- E		No information available
Simplified business tax	tbs S	No information about the type of the self-employment, but we estimate the number of the tax payers. Every eighth self-employment chose this type of tax paying in 2006. (~100 000 person or firm)	
Local taxes	- E		No information available
Value Added Tax	- E		No information available
Excise tax	- E		No information available
Environmental protection fee	- E		No information available
Charge for environmental load	- E		No information available
Gambling tax	- E		No information available
Registration tax	- E		No information available
Energy tax	- E		No information available
Employee Social Insurance Contributions	tscee S		
Employer Social Insurance Contributions	tscer S		
Self-employed Social Insurance Contributions	tscse S		

Notes: “-” policy did not exist in that year; “E” policy is *excluded* from the model’s scope as it is neither included in the microdata nor simulated by Euromod; “PS” policy is *partially simulated* as some of its relevant rules are not simulated; “S” policy is *simulated* although some minor or very specific rules may not be simulated.

2.2 Simulated policies and order of simulation

2.2.1 Simulated policies

The model allows simulating changes in the tax rates and contribution rates, changes in tax deductions and allowances, family benefits, and major rules for social assistance benefit. The order of simulation is reported below.

2.2.2 Order of simulation and interdependencies

The following table shows the order in which policies of the Hungarian fiscal system are simulated.

Table 2.3. EUROMOD: order of simulation, 2018-2021

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Policy	HU_2018	HU_2019	HU_2020	HU_2021	Description of the instrument and main output
uprate_hu	on	on	on	on	DEF: UPRATING FACTORS
ConstDef_hu	on	on	on	on	DEF: CONSTANTS
InitVars_hu	on	on	on	on	DEF: Initialise variables
IIDef_hu	on	on	on	on	DEF: INCOME CONCEPTS
random_hu	n/a	n/a	n/a	on	DEF: Random assignment for covid WAGE COMPENSATION
TransLMA_hu	n/a	n/a	n/a	on	DEF: Select individuals that transit to unemployment and WC schemes (LMA)
TuDef_hu	on	on	on	on	DEF: ASSESSMENT UNITS
yem_hu	off	off	off	off	SWITCH - DEF: minimum wage
neg_hu	on	on	on	on	DEF: recode negative income from self-employment to zero
yemcomp_hu	n/a	n/a	n/a	on	BEN: Wage compensation scheme Covid-19
bun_hu	on	on	on	on	BEN: unemployment benefit (munkanélküli járadék)
bmanc_hu	on	on	on	on	BEN: Maternity Grant (Anyasági Támogatás)
bmact_hu	off	off	off	off	SWITCH - BEN: Maternity Allowance (csecsemőgondozási díj)
bpct_hu	off	off	off	off	SWITCH - BEN: Child Care Fee
bccnc_hu	on	on	on	on	BEN: Child Care Allowance (Gyermekgondozási Segély)
bcclt_hu	on	on	on	on	BEN: Child Raising Support (Gyermeknevelési Támogatás)
bchnm_hu	on	on	on	on	BEN: Family Allowance (Családi Pótlék Tartásdíj)
tscee_hu	on	on	on	on	SIC: Employee Social Insurance Contributions
tscer_hu	on	on	on	on	SIC: Employer Social Insurance Contributions
tscse_hu	on	on	on	on	SIC: Self-employed Social Insurance Contributions
tin_hu	on	on	on	on	TAX: Personal Income Tax (Személyi Jövedelemadó)
tbs_hu	on	on	on	on	TAX: Simplified Business Tax (Egyszerűsített Vállalkozói Adó)
bchmt_hu	on	on	on	on	BEN: Regular Child Protection Benefit (Rendszeres Gyermekvédelmi Támogatás)
bfa_hu	on	on	on	on	BEN: Family Benefit
bsa_hu	on	on	on	on	BEN: Social Assistance (Szociális Segélyek)
output_std_hu	on	on	on	on	DEF: STANDARD OUTPUT INDIVIDUAL LEVEL
output_std_hh_hu	off	off	off	off	DEF: STANDARD OUTPUT HH LEVEL

In the Hungarian system there are four means-tested benefits that can be simulated. Their amounts are calculated within two policies: regular child protection allowance and social assistance (including old age allowance, regular benefit and home maintenance support). They all depend on income after income tax and employee and self-employed contributions have been deducted. They are therefore simulated after the simulation of income taxes and social insurance contributions.

The other four simulated benefits are non means-tested benefits. These are: maternity or child related benefits that depend on the age of the child or the number of the dependent children in the household. These non-means-tested benefits must be simulated first, because they are considered incomes by the means-tested income criteria.

2.3 Policy switches

There is one switch used in the Hungarian model² controlling **minimum wage modelling** (*yem_hu*). If the switch is set to *on* then minimum wage hourly rate is applied for anyone reporting lower hourly rate than the official national minimum wage, otherwise (*off*) hourly rates are taken as reported from the original dataset. Minimum wage adjustment switch is set *off* by default in Hungary.

2.4 Social benefits

2.4.1 Maternity grant (*Bmanc_hu*)

Resident women who give birth, having previously participated in pre-natal care at least 4 times and having no insurance, are entitled to a one-off lump-sum payment of 225% of the minimum old age pension or 300% in case of twins. (In EUROMOD the twins regulation is not implemented because of the lack of data.)

- **Definitions**

The unit of analysis is the family. This comprises the head, his spouse or partner and their own children. Dependent children are defined in the tax unit as aged 16 or younger or 24 or younger if they are in full-time secondary education, not married and not cohabiting.

- **Eligibility conditions**

This benefit is paid if at least one one-year old child lives in the family.

- **Income test**

This benefit does not depend on other incomes. Income test is not necessary.

- **Benefit amount**

The maternity grant is a lump-sum payment of 225% of the minimum old-age pension. In order to obtain average monthly amounts, Euromod output is divided by 12.

2.4.2 Maternity allowance (*Bmact_hu*)

Mothers giving birth to a child are entitled to maternity allowance if they are insured for at least 180 days during the last two years before delivery they are entitled to maternity allowance.

- **Definitions**

The unit of analysis is the family. It is paid for 24 weeks (4 weeks before and 20 weeks after the planned date of birth, or 24 weeks after the date of birth, depending on the mothers' choice) and its amount is 70% of the daily average gross earnings of the previous year.

- **Eligibility conditions**

This benefit is paid if at least one child lives in the family under one-year old.

- **Income test**

This benefit does not depend on other incomes. Income test is not necessary.

² Policy switches are denoted with 'switch' in the policy spine (for a given policy year), while their default values (*on* or *off*) are set in a separate dialogue box in the model, accessed via Country Tools > Set Switches in the EUROMOD User Interface (UI).

- **Benefit amount**

Its amount is 70% of the daily average gross earnings of the previous year.

2.4.3 Child care fee (*Bplct_hu*)

Child care fee is a contributory benefit, which is paid after the expiry of Maternity Allowance until the child reaches 2 years of age. From 1st of January 2014 the mothers may have gainful activity after the 1st year of age of the child, and from 1st of January 2016 the mothers may have gainful activity without limitation

- **Definitions**

The unit of analysis is the family. This comprises the head, his spouse or partner and their own children. The eligibility criterion is at least 180 days of insurance during the last two years before delivery of the parent who wants to take care of the child at home.

- **Eligibility conditions**

This benefit is paid if at least one one-year old child lives in the family.

- **Income test**

This benefit does not depend on other incomes. Income test is not necessary.

- **Benefit amount**

Its amount is 70% of the daily average gross earnings of the previous year with a maximum of 70% of twice the minimum wage.

2.4.4 Child care allowance (*Bccnc_hu*)

A flat-rate benefit to parents who stay away from work to care for their children under the age of 3 (under age of 10 in case of permanently ill or severely disabled children) or for grandparents who care for their grandchildren aged between 1-3 years in the household of the parent. The monthly amount is equal to the minimum old age pension.

- **Definitions**

The unit of analysis is the family. This comprises the head, his spouse or partner, grandparents and their own children. Dependent children are defined in the tax unit as age \leq 2 or age \leq 9 if disabled, grandparents are defined as parents of the child's mother or father.

- **Eligibility conditions**

Eligible are units where at least one adult person is caring for a 0-2 years old child if the person is the parent, or a 1-2 years old child if the person is the grandparent.

Since 2008, the caring parent of children under 1 year of age cannot pursue a gainful activity, while parents of children older than 1 year of age can pursue a gainful activity without restriction.

- **Income test**

Income test is not applicable

- **Benefit amount**

The monthly amount is equal to the minimum old age pension.

2.4.5 Child raising support (*Bcclt_hu*)

Benefit for parents who raise three or more children in their own home, if the youngest child is between 3 and 8 years old. The monthly amount is equal to the minimum old age pension, irrespective of the number of children.

- **Definitions**

The unit of analysis is the family. This comprises the head, his spouse or partner and their own children. Dependent children are defined in the tax unit as aged 16 or younger

or 24 or younger if they are in full-time secondary education, not married and not cohabiting.

- **Eligibility conditions**

Eligible are families where parent(s) work maximum 4 hrs per week in order to take care of at least 3 dependent children where there is at least one child age between 3 and 7 years-old (included) and no child age 0 to 2 (i.e. a 3-7 years old child is the youngest).

- **Income test**

Income test is not applicable

- **Benefit amount**

The monthly amount is equal to the minimum old age pension.

2.4.6 Family allowance (*Bchnm_hu*)

Family allowance is mainly meant to support families with schooling costs. It is paid to the parent from the birth of the child to the termination of compulsory education studies (usually 0-16 years); it may be paid also during secondary school education or vocational training (up to 20 years of age). Its amount depends on the number of children in the family, household type (e.g. single-parent family) and whether the child is disabled. In order to support families with schooling costs, in July the amount of the family allowance is double.

- **Definitions**

The unit of analysis is the family. This comprises the head, his spouse or partner and their own children.

Dependent children are defined in the tax unit as aged younger than 16; or 24 if they are in full-time secondary education, not married and not cohabiting

- **Eligibility conditions**

Family Allowance is a universal benefit. This benefit is paid if at least one dependent child lives in the family.

- **Income test**

Income test is not necessary

- **Benefit amount**

The monthly amount for lone parents depends on number of children living in the family:

1 child: HUF 13,700,

2 children: HUF 14,800 per child,

3 or more children: HUF 17,000 per child,

If the child is permanently ill or severely disabled: HUF 25,900.

The monthly amounts for other families are:

1 child: HUF 12,200,

2 children: HUF 13,300 per child,

3 or more children: HUF 16,000 per child,

If the child is permanently ill or severely disabled: HUF 23,300.

The amounts paid by the family allowance have not changed since 2009:

1 child in the family	12,200,
1 child, single parent	13,700,
2 children in the family	13,300
2 children, single parent	14,800
3 or more children in the family	16,000
3 or more children, single parent	17,000
permanently ill or severely disabled child in the family	23,300,

permanently ill or severely disabled child, 25,900,
single parent

In EUROMOD, the double amount paid in July and special amount for foster children cannot be simulated.

2.4.7 Regular child protection allowance (*Bchmt_hu*)

- **Definitions**

This benefit is paid to the family if the income per person in the family does not exceed the amount of the defined percentage of the minimum old age pension. It is meant to support low income families with children.

The unit of analysis is the family. It comprises of the head, his spouse or partner and their own children.

Dependent children are defined in the tax unit as aged 17 or younger, or under age 23 (included) if they are in full-time secondary education, not married and not cohabiting or 25 or younger if they are in full-time tertiary education, not married and not cohabiting.

- **Eligibility conditions**

Eligible are families with children where per capita monthly household income (as defined in `il_meanstestY`) is below 130% of the minimum old age pension.

- **Income test**

The income test is based on per capita monthly household income defined as disposable income (excluding regular child protection allowance - this benefit - and social assistance (as they are not yet calculated)).

- **Benefit amount**

The benefit is paid in a fixed amount per year to families with children (independently from the number of children). It amounts to 11 600 HUF per year.

2.4.8 Social assistance (*BSA_HU*)

2.4.8.1 Old age allowance

This is a social assistance scheme to ensure a minimum income during old age in the absence of an old age pension. The amount of the benefit is determined by the income of the person (and his/her partner or spouse).

- **Definitions**

The unit of analysis is the 'couple'. This comprises the head, his spouse or partner. Tax unit comprises only head and his/her partner, i.e. income of other household members is not taken into account.

- **Eligibility conditions**

Eligible are people who have reached the pension age or those living in a couple where at least one person is older than the pension age.

- **Income test**

Old age allowance is a means-tested benefit based on `il_meanstestY` which is defined as disposable income with the exception of regular child protection benefit (`bchmt_s`) and social assistance (`bsa_s`) (as they are not yet calculated).

- **Benefit amount**

For couples the maximum benefit amounts to 80% of the minimum old age pension per person.

For singles the maximum benefit amounts to 95% of the minimum old age pension or 130% if the person is older than 75 years old. Income of the couple/single (as defined in `il_meanstestY`) is withdrawn in full from maximum benefit.

2.4.8.2 Regular benefit

This is a social assistance scheme to ensure a minimum standard of living. From 2006 to 2010 the assessing of the entitlement and the amount of the assistance based on the income projected to the consumer unit instead of the previous income per capita. The consumer unit is the rate which shows the structure of consumption within a family. The first major member of the family and the disabled child's rate is 1,0 while the ratio of the companion (spouse) and a child is lower (0,9-0,7). From 2009 it was replaced by the stand-by allowance for people over 55.

- **Definitions**

The unit of analysis is the household, which includes all individuals in the household as members of the same unit. Only one person in a family is entitled to this support.

Dependent children are defined in the tax unit as children under 16 or children under 21 not in work or children under 25 in full time education and not working, not married nor cohabiting.

- **Eligibility conditions**

Eligible are persons who are 18 years or older who have a disability degree of at least 67% or are non-employed, i.e. unemployed and their income is lower than the 90% of the minimum pension.

In 2009 the regular benefit was replaced by the stand-by allowance. The eligibility conditions were changed: People age 18-55 with children or those age over 56 (up to pension age) are eligible if they are disable or not entitled to unemployment benefit and they have low income (as defined by `il_sareexclY` in the income list).

- **Income test**

`il_meanstestY` is defined as disposable income with the exception of regular child protection benefit and social assistance.

- **Benefit amount**

From 2006 to 2009 the maximum amount of the benefit is 90% of the minimum old age pension. The payable amount is the difference between the means-tested income and the income calculated with the per consumer unit. The lower and upper limit of the benefit are respectively 0 and the minimum wage.

2.4.8.3 Stand-by allowance (from the year 2009)

This is a social assistance scheme to ensure a minimum standard of living. The assessing of the entitlement and the amount of the assistance based on the income projected to the consumer unit instead of the previous income per capita. The consumer unit is the rate which shows the structure of consumption within a family. The first major member of the family and the disabled child's rate is 1,0 while the ratio of the companion (spouse) and a child is lower (0,9-0,7).

- **Definitions**

The unit of analysis is the household, i.e. all individuals in the household are members of the same unit.

Dependent children are defined in the tax unit as household members 15 or younger or, if in education and not working, 24 or younger.

- **Eligibility conditions**

Eligible are persons who are younger than 55 and older than 18 years old and have a disability degree of at least 67% or do not receive unemployment benefit and are non-employed, i.e. unemployed and do not have income as defined in `il_sareexclY` and do not received regular social benefit.

- **Income test**

`il_meanstestY` is defined as disposables income with the exception of regular child protection benefit and social assistance (as they are not yet calculated).

- **Benefit amount**

The maximum amount of the benefit is the minimum old age pension.

2.4.8.4 Home maintenance support (currently not simulate)

This is a means-tested benefit provided by the local government for a family or individual who lives in a home not exceeding a specified size, provided that there is no income from the use of that home.

- **Definitions**

The unit of analysis is the household (all individuals in the household are members of the same unit).

- **Eligibility conditions**

Eligible are households where per consumer unit income does not exceed 150% of the minimum old age pension (in 2012 this increased to 250%).

- **Income test**

Household income test is based on the per consumption unit household income ($i_{l_meanstestY}$). The consumer unit is the rate which shows the structure of consumption within a family. However, this is different from that used for social assistance: the first adult of the household has a rate of 1,0, the second adult has a rate of 0,9, other adults weight 0,8, first and second child also weight 0,8, other children have a rate of 0,7. Extra weight (0,2) is given to the household if it is a lone parent household.

- **Benefit amount**

The home maintenance supports maximum 30% of recognized housing costs.

The maximum amount of the benefit depends on household size. For each recognized squared meter, it pays 450HUF:

30% of the maximum amount of the benefit is paid to household with per capita income lower than 50% of minimum pension; for households with per-capita income between 50% and 150% (250% from 2012) of minimum pension, the amount of the benefit is reduced and the new rate is calculated as follows $(0.3 - (((i_{hhpercapitaY1} - \$MinPension_m * 50\%) / \$MinPension_m) * 0.15))$

The regulation of this benefit changed at 1st of March 2015. Regarding this the local government declair the rules of this benefit and not the social act.

2.5 Social contributions

In Hungary, the social insurance system has two large parts: the pension scheme and health insurance.

2.5.1 Employee social contributions (Tscee_hu)

Employees pay 7% for health insurance contribution and 10% pension insurance contribution. The general employee insurance contributions amounts to 1,5% of employment income in all investigated years. No employee social insurance contributions are payed if in receipt of old age pension. The assessment unit is the individual.

COVID: In 11 sectors (such as tourism, catering, event org., sport etc) the employee doesn't pay contribution too, only 7710 HUF/month health insurance. Off in baseline due to missing granularity of sectoral information.

2.5.2 Employer social contributions (Tscer_hu)

- *Liability for contributions*

Employers have to pay Pension and Health insurance contribution for each of their employees

- *Thresholds and rates*

From 2012 the health insurance, pension insurance and the general insurance contributions were erased. Instead of these, 27% social contribution tax was introduced in 2016, (reduced to 22% from 2017 and to 19,5% in 2018. The assessment unit is the individual.

COVID: Between March and June 2020 the employer doesn't pay social contribution tax in 11 subsectors (like tourism, catering, event org., sport etc). Off in baseline due to missing granularity of sectoral information.

2.5.3 Self-employed social contributions

Entrepreneurs (those with no zero self-employment income) and EVA (simplified business tax) payers (`lse00 = 1`) pay self-employed contributions.

The contribution base for entrepreneurs is the highest between minimum wage and self-employment income. In the case of EVA payers the contribution base is the amount of the minimum wage. EVA payers do not pay self-employed health insurance contributions if they are at the same time employees.

The `lse00` variable has been generated to identify the EVA payers (`lse00=1`). This variable is created from the self-employment income variable based on the following criteria: for example, if self-employment income, (`py050g`) < 30 000 000 HUF then `lse00=1`. Because of the low estimate of self-employment income this causes a very large number of individuals in the sample to be classified as EVA payers.

From 2012 the self-employment social income contribution has 4 part: 27 % social contribution tax (reduced to 22% from 2017, 19,5% in 2018); 7% health insurance contribution; 10% pension insurance contribution; 1,5% labour market contribution.

2.6 Personal income tax (tin_hu)

The main tax simulated for Hungary is personal income tax. Every citizen is obliged to file a tax return at the end of the tax year if their annual income comprises taxable income.

2.6.1 Tax Unit

Personal income tax is individual. However, there is a partial exception to this rule: family tax credit is jointly assessed. In this case the unit of analysis is the family. This comprises the head, his/her spouse or partner and their own dependent children. Dependent children are defined as aged 16 or younger or aged 24 or younger if they are in full-time secondary education. Children cannot be married or cohabiting.

2.6.2 Exemptions

Some income components do not have to be declared to the tax authorities, and thus are not included in the concept of taxable income (pensions, child and family benefits).

2.6.3 Tax base

The tax base is defined as taxable income excluding EVA payers' ($\{l_{se00}=1\}$) self-employment income. Their self-employment income is stored in y_{se} and used for calculating SIC, but not for tax calculation.

Taxable income includes all sources of income. More specifically, the definition of taxable income is as follows:

```
IL: taxableY
taxableY= child raising support (gyermeknevelési támogatás, bcclt) + child
care allowance (gyermekgondozási segély, bccnc) + child care fee
(gyermekgondozási díj, BCCCT) + sickness benefits (táppénz, távolléti díj,
BHL) + maternity allowance (terhességi-gyermekágyi segély, BMACT) +
unemployment benefits (munkanélküli ellátások, BUN) + employment income, YEM)
+ property income (YPR) + self-employment income (YSE)+ old-age income (poa)
```

2.6.4 Tax schedule

In 2013 and 2014 a fixed flat tax system was introduced where the tax rate is 16% for everyone. In 2016 this rate was decreased to 15%.

2.6.5 Tax credits

Tax credits are defined as deductions from tax due. These tax credits are non-refundable. In other words, final tax is calculated as the amount of tax resulting from the tax schedule minus the sum of all tax credits, subject to a minimum of zero.

A considerable number of tax credits cannot be simulated, because of the missing variables or missing relevant information in the original EU-SILC database. The model contains most of these tax credits but some of these are switched off. In this chapter we listed only the simulated tax credits.

2.5.6.1. Tax credit on income from wages

The tax credit on income from wages was eliminated from the tax system in 2012.

2.5.6.2. Tax credit for serious disability

Eligible are people with a disability level of at least 67%. The tax credit amounts to changed to the 5% of the minimum wage from 2010.

2.5.6.3. Family tax credit

From 2011 the family tax credit was deducted from the tax base (becoming effectively a tax allowance) and not from the tax due. The amount are: $\{nDepChInTU=1\}=66670\#m$ or $\{nDepChInTU=2\}=83330\#m*2$ or $\{nDepChInTU>=3\}=220000\#m$

The tax credit is shared (proportionally to tax after deduction of other tax credits) among parents to make the maximum use of it.

2.7 Simplified Business Tax (tbs_hu) 2017-2019

Calculation of EVA (Egyszerűsített Vállalkozói Adó – Simplified Business Tax) is based on the amount of total revenues including VAT. The tax rate is 37% from 2012. Those paying EVA are exempted from paying the VAT, they do not have to pay entrepreneurial personal income tax and if they have no other revenues, they do not have to file a personal income tax return.

2.8 Wage compensation scheme in response to Covid-19 (random_hu, yemcomptime_hu, yemcomp_hu, yemadj_hu, yemmyadj_hu)

2.8.1 Assessment unit

The unit of analysis is the individual (tu_individual_bg).

2.8.2 Eligibility conditions

If a company is unable to pay its employees because of the epidemic and choose to reduce their working hours (and salary accordingly).

2.8.3 Wage compensation level paid by the state

The wage compensation (EUROMOD variable *bwkmcee_s*) covers 70% of the worker's gross earnings as well as the statutory employer's social security contributions. A reduction of hours is also possible.

2.8.4 Duration of scheme

The support is simulated for a three months (EUROMOD variable *bwkmceemy_s*). At the time of writing, this was the maximum duration

2.8.5 EUROMOD Notes

This policy can only produce results if the model is run in combination with the LMA add-on. The individuals that are selected to undergo transitions to monetary compensation schemes are defined in the TransLMA_hu policy, which is switched on automatically by the add-on. For more information about the modelling of labour market transitions please consult the '*Simulating labour market transitions in EUROMOD*' document.

3. DATA

3.1 General description

The Hungarian database is drawn from the Community Statistics on Income and Living Conditions (EU-SILC) as provided by Eurostat (UDB_cHU18). EU-SILC is expected to become the EU reference source for comparative statistics on income distribution and social exclusion at European level, particularly in the context of the 'Programme of Community action to encourage cooperation between Member States to combat social exclusion' and for producing structural indicators on social cohesion for the annual spring report to the European Council.

The instrument aims to provide two types of data:

- Cross-sectional data pertaining to a given time or a certain time period with variables on income, poverty, social exclusion and other living conditions

- Longitudinal data pertaining to individual-level changes over time, observed periodically over, typically, a four years period.

Social exclusion and housing condition information is collected at household level while labour, education and health information are obtained for persons aged 16 and over. The core of the instrument, income at very detailed component level, is mainly collected at personal level but a few components are included in the household part of SILC.

The Statistics on Income and Living Conditions is conducted by the Central Statistics Office (HCSO).

The 2017 EU-SILC sample in Hungary was selected by a stratified two-stage sampling design in a part of the population and by stratified one-stage design in the other part. The final sampling units are the dwellings and, in each of them, every household is observed.

Localities were stratified by General Election Districts and size (in terms of number of dwellings). In the first part, one locality was selected with probability proportional to the number of dwellings. Within each selected locality, a systematic selection of dwellings was done. As for the other part of the population, a systematic selection of dwellings was done in each stratum.

Table 3.1 EUROMOD database description

2019	
EUROMOD database	HU_2019_a1.txt
Original name	UDB_cHU19
Provider	HCSO; EUROSÍAT
Year of collection	2020
Period of collection	01/03/2019-01/05/2019
Income reference period	01/01/ to 31/12/ previous year to fieldwork
Unit of assessment	Households*
Coverage	Private household
Sample size	Ind: 12,980 HH: 6,911
Response rate	n.a (household level; HY010)

*Notes: Persons living in collective households and in institutions are generally excluded from the target population. Refers to a non-institutional collective dwelling such as a boarding house, dormitory in an educational establishment or other living quarters shared by more than five persons without sharing household expenses.

3.2 Data adjustment

Generally we try to keep the original EU-SILC dataset and no further adjustments to variables have been made. Eurostat applies several processes to validate the database. The validation process includes syntax and a logical check audit, for example, on the structural coherence of the files (household register, personal register, household data, personal data) and the coherency between different variables of the same record and other records.

In order to guarantee consistency between demographic variables and income variables, which refer to the previous year (and on which EUROMOD simulation are based), all children born between the end of the income reference period and the date of interview have been dropped from the sample. The final sample includes 18 591 individuals in 8 142 households.

3.3 EUROMOD SILC Database (EMSD)

From 2021 onwards, a new database prepared by Eurostat - EUROMOD SILC database (EMSD) is used to derive the EUROMOD input dataset. The EMSD includes:

- all UDB (User Database) variables (each variable is described in the doc 65 available online);
- national SILC data supplied by the National Statistical Institute (NSI);
- EUROMOD variables created and imputed by Eurostat because of restricted data access or knowledge in-house.

Based on the EMSD, the national team derives additional variables requiring a deep understanding of country specificities (for instance national tax-benefit rules). The final EUROMOD input dataset is therefore made of variables created by both Eurostat and national team.

Some of the EUROMOD variables produced by Eurostat are created and/or imputed with PDB (Production Database) variables. The reason being that the modalities of the PDB variables are more detailed than in UDB. According to the agreement between the NSI and Eurostat, the national team was allowed to use the more detailed information coming from the PDB to derive some EUROMOD variables or to use them as intermediate variable to impute other EUROMOD variables.

However, in the final EUROMOD input dataset, same disclosure rules as in the UDB are applied. Nevertheless, when imputing variables, disclosure rules are not applied, so the values might still differ from the one that a user could obtain when replicating the imputation based on the UDB data set.

3.4 Imputations and assumptions

3.4.1 Time period

In the SILC user database, the income reference period is a 12-month period. Information on earnings refers to the last tax year. Similarly, information about pensions and benefits refers to the calendar year before the interview. Self-employment income is based on this reference period too.

In general: “The interval between the end of the income reference period and the time of the interview for the respondent concerned shall be limited to 8 months as far as possible. This applies both to the household and personal samples, and irrespective of whether the reference period used is fixed in terms of calendar dates for the whole

sample or is a moving reference period determined according to the timing of the interview for the household or person concerned.”³

All monetary amounts in the SILC are expressed in annual terms. These are converted into average monthly terms (dividing by 12) for the EUROMOD database.

3.4.2 Gross incomes

The Hungarian SILC data include variables on income tax, employee social insurance contributions and other deductions from gross earnings. In general, “gross income means the total monetary and non-monetary income received by the household over a specified 'income reference period', before deduction of income tax, regular taxes on wealth, employees', self-employed and unemployed (if applicable) compulsory social insurance contributions and employers' social insurance contributions, but after including inter-household transfers received.”⁴

3.4.3 Disaggregation of harmonized variables

Information on simplify taxation for self-employed is not reported in the original SILC UDB. Therefore, we impute whether self-employed workers are subject to simplify or full taxation base on whether their annual self-employment income is less than 30,000,000 HUF. In this case the variable lse00 is set to be 1 to indicate that the person is classified as an EVA payer. However, controlling only for income it is not enough to identify the all EVA payers in Hungary because most of the self-employed in the sample satisfy the income criteria. Hence, to reflect the proportion of EVA payers in the population, one in eighth self-employed are randomly selected to be EVA payers. The others are subject to ‘normal’ taxation.

3.5 Updating

To account for any time inconsistencies between the input dataset and the policy year, updating factors are used. Each monetary variable (i.e. each income component) is updated so as to account for changes in the non-simulated variables that have taken place between the year of the data and the year of the simulated tax-benefit system. Updating factors are generally based on changes in the average value of an income component between the year of the data and the policy year. For detailed information about the construction of each updating factor as well as the sources that have been used, see Annex 1.

As a rule, updating factors are provided both for simulated and non-simulated income components present in the input dataset. Note however that in the case of simulated variables, the actual simulated amounts are used in the baseline rather than the updated original variables in the dataset. Updating factors for simulated variables are provided so as to facilitate the use of the model in cases when the user wishes to turn off the simulation of a particular variable. The list of updating factors as well as the sources used to derive them can be found in Annex 1

³ SILC UDB description

⁴ SILC UDB description

4. VALIDATION

4.1 Aggregate Validation

EUROMOD results are validated against external benchmarks. Detailed comparisons of the number of people receiving a given income component and total yearly amounts are shown in Annex 3. Both market incomes and non-simulated taxes and benefits in the input dataset as well as simulated taxes and benefits are validated against external official data. The main discrepancies between EUROMOD results and external benchmarks are discussed in the following subsections. Factors that may explain the observed differences are also discussed.

4.1.1 Components of disposable income

In this section, the main differences between the definition of disposable income in EUROMOD and EU-SILC are presented.

Table 4.1 Components of disposable income

	EUROMOD 2018-2021	EU-SILC 2019
	ils_dispy	HY020
Employee cash or near cash income	+	+
Employer's social insurance contribution	0	0
Company car	0	+
Contributions to individual private pension plans	0	0
Cash benefits or losses from self-employment	+	+
Pension from individual private plans	0	0
<i>Unemployment benefits</i>	+	+
<i>Old-age benefits</i>	+	+
<i>Survivor' benefits</i>	+	+
Sickness benefits	+	+
Disability benefits	+	+
Education-related allowances	+	+
Income from rental of a property or land	+	+
<i>Family/children related allowances</i>	+	+
Social exclusion not elsewhere classified	+	+
Housing allowances	+	+
Regular inter-household cash transfer received	+	+
Interests, dividends, etc.	+	+
Income received by people aged under 16	+	+
Regular taxes on wealth	-	-
<i>Regular inter-household cash transfer paid</i>	-	-
<i>Tax on income and social contributions</i>	-	-
<i>Repayments/receipts for tax adjustment</i>	0	+

4.1.2 Validation of incomes inputted into the simulation

Table 4.3 shows market income in Euromod. The table reports an estimation for employment and self-employment income. The employment income is well estimated in all of the 4 years, the differences between the Euromod results and the external statistic numbers are minors. The number of self-employed is over-reported compare to the official statistics, the difference of the grouping causes this variance: the Euromod results cover with all the self-employments income, while the external statistic calculate with only the persons with self-employed activity. Although the total amount of earnings from self-employment activities is under-reported by 9% in 2018 (Table 4.4)

what means the respondents under reported their self employment income amounts significantly. This under reporting appears in the employment income amounts too (Table 4.4). Unfortunately, in the case of two others market income, as the rent income and the investment income, the significant official statistics are not available.

Table 4.5 and 4.6 (Annex 3) show the benefits that cannot be simulated in EUROMOD and compares them with external statistics provided by the Hungarian Central Statistical Office. In the case of the disability benefits, the external source amount includes the disability pension below retirement age, miners' and early retirement pension, benefits to persons with reduced capacity to work, accident benefits and the disability benefit. The coverage of the SILC and the external data is similar, but not the same. This causes an overestimate effect in the number of recipients (2018-2020) and a small underestimate in the expenditure amounts.

The number of old age income recipients in EUROMOD is similar to the external statistics, but the number of pensioners is a little bit oversimulated and expenditures are undersimulated. Most likely the EU-SILC over-reported the old age income recipients if they have other kind of pensions (for example if the person has disability or survivor pensions). We think the over-reporting cause the overestimate effect in the survivor benefit number of recipients, more person calculate these benefits as some kind of pensions as the official statistic shows.

In the case of the home maintenance support, EUROMOD identifies eligible households only based on low income criteria, household composition and characteristics related to housing costs based on the recognized size of the house. However, the assignment of this benefit also involves decisions by local government administrations. The fact that we are not able to capture completely the eligibility criteria for this benefit (the differences between central and local government regulations) helps to explain the underestimation of the number of recipients and expenditures in each year. Because of these differences (i.e. in the cover of the benefit recipients) we haven't signed the official numbers.

4.1.3 Validation of outputted (simulated) incomes

Table 4.7 and Table 4.8 (Annex 3) show the validation of child and family related benefits. These benefits are usually well estimated in the model, in particularly those cases where the regulations are clear and all the recipients get these supports (e.g. family allowance). Because of the regulation the maternity grant is not well simulated, and there are some small deviations in the child care allowance. EUROMOD allocates this amount where a less than 3 years old child is in the family, but in reality more of these families get this benefit (i.e. it may be a problem of identification of who can apply for the benefit: for example, grandparents can be entitled to this benefit if parents do not apply), and the model cannot properly control for this effect. This deviation is much larger in the case of the child raising support for which both recipients (and likely expenditures for which we do not have official statistics to compare to) are oversimulated by about 50%.

The simulation of the regular child protection allowance is underestimating the actual take-up of the benefit. EUROMOD underestimate both the recipients and the expenditure of this allowance of a similar magnitude (~20%). This allowance is not a universal allowance and it is not available to everybody, so there may be some problem

of take-up that the model is not accounting for. Moreover, the number of recipients depends on the budget of the local governments, which adds another unknown effect; and the official statistics coverage includes an in-kind part of the benefit that EUROMOD cannot control for.

All of the social allowance benefits have complicated regulations which are difficult to simulate fully. Moreover there are many missing information in this section that makes the implementation of these benefits challenging. In Hungary the assembly of the local government provides these allowances, and the amount and the number of recipients depend on the budget of the local government and the number of the entitled persons.

Table 4.7 shows numbers of taxpayers simulated by EUROMOD, while the total amount of the personal income tax is reported by Table 4.8. The aggregate amount is underestimated by 20% in average from 2018 to 2020.

The simplified business tax results picture shows a small overestimation in the number of simplified business taxpayers, and an overestimation in the revenue amount. The reason that could help explaining this differences is the lack of information about who the simplified business taxpayers are in the SILC UDB. Indeed, because of this, we have imputed who are these tax payers among those self-employed included in EU-SILC. But the number of tax payers who chose the simplified business tax has decreased over time (in 2010 there were approx. 100,000 tax payers, in 2016 they are less than half compared to the 2010 number). Because of the static modelling of EUROMOD, the simulation is not able to capture these changes. On the other hand, the revenue is underestimated, suggesting that methods used to identify such tax payers might not be working properly and should be revised in the future. A new self-employment tax became popular instead of the simplified business tax since 2015 this is the itemised tax of small taxpayers. From 2020 version, EUROMOD simulates this tax too. Number of tax payers are significantly overestimated as is the total aggregate income tax collected by it. This indicates that the allocation methodology used to identified who pays the itemized tax is not capturing well the tax base or that some of those allocated to pay the itemized tax in reality have been paying the simplified business tax (which is instead undersimulated in amount). The simplified business tax was erased from the beginning of 2020.

Both of the employee and the employer social insurance aggregate amounts of contributors are well represented in EUROMOD. The revenue from the employees are somewhat underestimated in these years, and the employer revenue is underestimated too. One of the reasons of this deviation is the double activity economic status. In Hungary there are big differences between the persons who have only one economic status (e.g. employee, self-employment) and the workers who have more than one status (e.g. pensioner and employee; student and employee, etc.) regarding the social contributions paid. Not all the respondents in the sample mention the double work status, which causes a relative large difference with the external statistics. The other reason is that the Hungarian official statistics do not collect information that is directly comparable to the number of payers and amounts produced by EUROMOD for self-employment social contributions. Indeed, the National Accounts calculations use different classification for self-employment social insurance contributions revenues.

From 2010 the whole unemployment benefit system was changed. As a consequence, the social basic unemployment supports (like the regular social benefit and the stand-by allowance) were transformed. The key of the new system is its link with the public employment and public works (It is known as public work or fostered workers – see page 11 for more details). According to the new system, after 90 days of unemployment, those able to work will lose their benefits unless they agree to do public works. The simulation of this condition can be challenging for two main reasons. The first is related to the input data. In the EU SILC the economic status of public workers is ‘employee’ and not ‘unemployed’ (this is coherent with the principle that public workers have a regular job). So we cannot identify the unemployed among public workers and we cannot separate them from ‘normal’ employees. Moreover, the number of public workers has significantly increased from 2010, but the numbers of public workers was a little bit decreased from 2018.

The unemployment benefits statistics provided by EU-SILC to EUROMOD contains not all, but most of the ESSPROS elements, such as the early retirement for labour market reasons, vocational training allowance, etc. the main reason is the increasing number of public workers (as explained above). Furthermore, the number of recipients is expected to be overestimated because of the criteria that EUROMOD uses to simulate unemployment. In fact, a person is considered as receiving unemployment benefits even if he/she was unemployed just for one month in the whole year. In fact, EUROMOD produces the average amount of a benefit received in a month, while the external statistics represent the average number of the recipients in one month and the corresponding expenditures. Unfortunately, there is no available information directly comparable with our results.

Indeed, following the economic crisis, the unemployment benefit system was changed significantly as mentioned above. However, this change is difficult to be captured by EUROMOD because the public work benefit (a specific part of unemployment benefit) is not simulated. Therefore, the number of recipients remains constant over time because people observed out of work remain the same (we do not change the input data to take into account demographic variations in the population or changes in labour market behaviours), expenditures change as an effect of updating monetary values of the benefits which are taken forward over time. Although in previous years comparisons to external statistics produced by the Hungarian Central Statistical Office suggested that this is not enough alone to capture the changes introduced within this part of the benefit system, there are no external statistics available for the years examined in this report. Because EUROMOD estimates remain in line with previous years, we suspect that the issue remains, but we are not able to test the simulation further.

4.2 Income distribution

All income distribution results presented here are computed for individuals according to their household disposable income (HDI) equalized by the “modified OECD” equivalence scale. HDI are calculated as the sum of all income sources of all household members net of income tax and social insurance contributions. The weights in the OECD equivalence are: first adult=1; additional people aged 14+ = 0.5; additional people aged under 14 = 0.3.

4.2.1 Income inequality

Table 4.9 in Annex 3 presents two main inequality indicators (Gini Index, and interquartile ratio S80/S20) and the income distribution for each year analysed in this report. EUROMOD's indicators do not differ significantly from the Eurostat figures calculated on the basis of EU-SILC data on disposable income of the calendar year in question. Given that the data sources are the same, it is encouraging that the distributions of measured and simulated income do not differ very much. As far as the income shares are concerned, the biggest difference is found in share of the first decile, which EUROMOD underestimates by 22% in the year 2018 and 29% in 2020. It is likely that this is mainly caused by the fact that EUROMOD assumes 100% take-up of benefits such as social assistance on the one hand, and 100% entitlement to (and take-up of) the state pension on the other. The biggest overestimation, 7 % in 2018 is in the 5th and 8% in the 6th deciles in 2018. EUROMOD overestimated the median in 2018 and 2019 but underestimate the mean income a little bit. The Gini indicator is overestimated by 5-8%, and the S80/S20 indicators are overestimated by 30%, respectively. In summary, the results regarding income inequality indicators show that differences between EUROMOD and Eurostat figures are in general small.

4.2.2 Poverty rates

Table 4.10 in Annex 3 shows poverty rates, calculated at the 40%, 50%, 60% and 70% of the median equivalent household income. Comparing poverty rates produced by EUROMOD and Eurostat figures (Table 4.10 in Annex 3), we find that in 2018, 2019 and 2020 EUROMOD overestimates significantly poverty at each poverty line. However, as far as the poverty rates calculated at the 60% and 70% of median equivalised income are concerned, EUROMOD poverty estimates are slightly closer to Eurostat estimates such that the ratio to the official external statistics equals ~1.70 and ~1.20 respectively. One of the reasons for overestimating the poorest poor might be the substantial undersimulation of various social benefits which would affect specifically the lower part of the income distribution (i.e regular benefit and regular child protection allowance). Further, overestimation of child raising support benefit might add to similar effects.

Finally, looking at poverty rates by age groups, we find that EUROMOD significantly overestimates poverty (with 60% of median equivalised income as the poverty line) for both 2017 and 2018 for youth (aged 16-24) and prime age (25-49), and the eldest two categories (50-64 and 65+) poverty from 2018 to 2020.

4.3 Summary of “health warnings”

- The sample size is relatively big but in the case of very detailed analysis the number of cases may be little.
- Possible underestimation of the self-employment incomes should be taken into consideration
- The introduction of “public work benefit” which allows unemployed people to keep their unemployment benefits after the standard period of payment of this benefit if they enrol in some public work implies that they would be observed in SILC as “employees/active”. It is not possible to distinguish this group from other workers and therefore the users should take this into consideration when using the model.
- Simulation of special tax for self employed are significantly oversimulated due to the high number of EU-SILC respondent reporting very low self-employed income. This should be kept in mind when using the model.
- Tax evasion and non-take up problems are present but it is difficult to assess exactly the size of the phenomena.
- Poverty rates by age groups are significantly oversimulated and users should aware of this when using the model for poverty analysis.
- The original dataset contains very few people among the very *low* and the very *high* earners, therefore the model is likely to underestimate overall income inequality

5. REFERENCES

National Accounts Hungary 2018-2020. Hungarian Central Statistical Office; Budapest, 2014.

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EU-SILC User Database Description. EUROSTAT, Luxembourg, 2018.

Eurostat portal: <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/>

- *Sources for tax-benefit descriptions/rules*

General sources for tax-benefit descriptions/rules/regulations:

<http://www.magyarorszag.hu>

ANNEX 1. UPDATING FACTORS

Table 1. Updating factors

Variable	Factor reference name	2018	2019	2020	2021	Source and explanation
HICP (2015 = 100, yearly average index)	\$HICP	158.7	164.1	169.5	169.5	EUROSTAT website: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=prc_hicp_aind&lang=en Value for 2017 from here http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=prc_hicp_midx&lang=en)
Consumer price index	\$f_cpi	261.6	289.5	289.5	289.5	Fogyasztói árindex Source: STADAT table 3.6.1.
upr_xch	\$f_xch	123.6	123.7	123.7	123.7	Child care fee Source: Yearbook of Social Statistics, Table 3.3
upr_bmana	\$f_bmana	226.4	252.2	252.2	252.2	Maternity allowance Source: Yearbook of Social Statistics 2013, Table 3.2
yem	\$f_yem	188.6	196.2	196.2	196.2	Wages and salaries. Source: HCSO, Stadat table 2.1.35
yse	\$f_yse	192.3	202.5	202.5	202.5	Self-employment income Source: National Accounts, calculation with the Eurostat table by the number of self-employment by A10 industry and the 'Generation of income in the household sector by industries' table from the official National Account publication
poa	\$f_poa	163.7	168.4	168.4	168.4	Old age income Source: HCSO, Pensions and other benefits 2014 (pdf file)
psu	\$f_psu	174.2	179.4	179.4	179.4	Survivor benefits Source: HCSO Publication tables (survivor pension)
bfa	\$f_bfa	213.6	220.9	220.9	220.9	Total family benefits Source: Yearbook of Social statistics, chapter 3
bun	\$f_bun	180.9	203.7	203.7	203.7	Unemployment benefits Source: NFSZ yearly report1. (pdf file) Estimation in 2011
bhl	\$f_bhl	191.2	198.8	198.8	198.8	Source: Yearbook of Social statistics 2013, Table 10.1;10.2
pdi	\$f_pdi	148.0	147.9	147.9	147.9	Source: HCSO Publication tables: Disability pensions and disability benefit (rokkantsági nyugdíj (2011-től rokkantsági járadék) és megváltozott munkaképességük járadéka)
bsa	\$f_bsa	158.7	164.1	169.5	169.5	Social assistance Source: Yearbook of Social statistics, chapter 6, table 6.1;6.5;6.16

Note: * The 2021 updating factors are estimations (except in the cases of CPI). The base of the estimations is the AMECO database.

ANNEX 2. POLICY EFFECTS IN 2020 –2021

Table 1 and Figure 1 show the effect of 2020 policies on mean equivalized household disposable income by income component and income decile group. This effect is estimated as the difference between simulated household net income under the 2020 tax-benefit policies (deflating monetary parameters by Eurostat’s Harmonized Index of Consumer Prices, HICP) and net incomes simulated under 2019 policies, as a percentage of mean equivalized household disposable income in 2019.

The analysis shows that changes in the tax-benefits system between 2020 and 2021 yield an average overall negative effect of 0.16% in equivalised disposable income. This was driven by reductions in real term of non-means tested (0.13%), public pensions (0.19%), an increase of self-employed social insurance contribution (SIC) (0.18%) and a growth of direct taxes (0.05%).

Overall the largest contribution to the decrease in disposable income is due to public pensions (-0,19%), the reason of this is the CPI, the uprating factor of the consumption price index is larger than the indices of the public pension. The non means tested benefits decrease the results too, respectively -0.18%, although there were no structural changes to benefits calculations between 2020 and 2021, amounts of non means-tested benefits - such as social assistance for old age, the regular social assistance benefit and the stand-by allowance – and amounts of non means-tested benefits - such as child care allowance, child raising support, family allowance and maternity grant - depend on the National Minimum Pension value. National Minimum Pension has remained unchanged in nominal terms over time, resulting in a cut in real terms of any benefit linked to it (although almost negligible considering the very small changes in the price index). On the other hand, the National Minimum Wage, used as a base value for the calculation of selected benefits - such as unemployment benefits and job seekers allowance – has increased. Such increase is much higher than the increase registered by the consumer price index, hence balancing out the negative effects due to freezing of National Minimum Pension. On the other hand, this also means that self-employed SIC for those on National Minimum Wage (or under) increase faster than inflation, hence the negative effect on household income observed between 2020 to 2021.

Across the income distribution the effect is the most negative in the 5th and 6th groups (-0.33%) – mainly driven by public pensions relative change (-0.25 and -0.16%) - whilst other decile groups gradually lose less of their income.

The above mentioned minor policy changes implemented between 2020 and 2021 have positive effects only for the 1st and 10th income decile groups who gain respectively 0.31% and 0.02% on average. Other income groups loss gradually in a range varying between -0.10% and -0.29%.

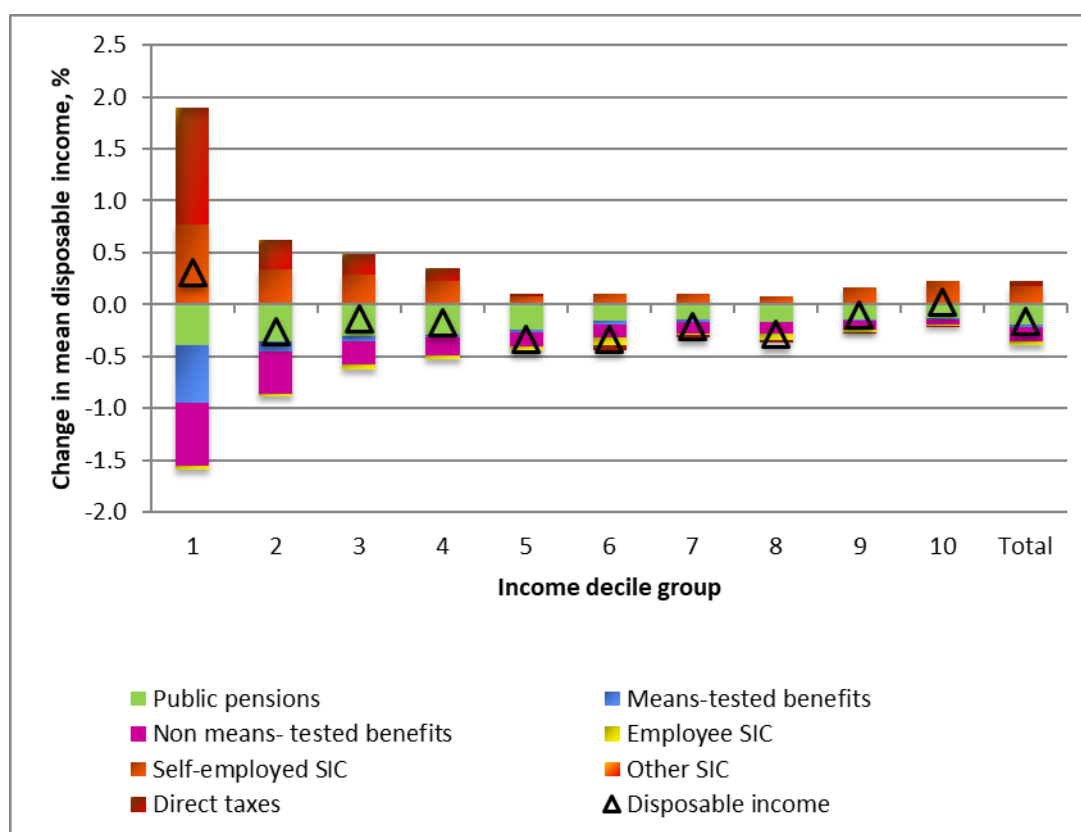
In summary, on average not all income groups were net losers, but the poorest benefitted more than the richest from the policy changes. The top decile in fact gains on average a very small positive change of their disposable income against the more than 0.31% gain by the bottom decile. However, middle-income earners lose disposable income, leaving them worse off than those in the top decile.

Table 1 Policy Effects 2020-21, using CPI indexation, %

Decile	Original income	Public pensions	Means-tested benefits	Non means-tested benefits	Employee SIC	Self-employed SIC	Other SIC	Direct taxes	Disposable income
1	0,00	-0,39	-0,56	-0,60	-0,04	0,78	0,00	1,12	0,31
2	0,00	-0,35	-0,10	-0,41	-0,02	0,34	0,00	0,28	-0,27
3	0,00	-0,31	-0,04	-0,22	-0,05	0,28	0,00	0,20	-0,14
4	0,00	-0,29	-0,02	-0,17	-0,04	0,23	0,00	0,12	-0,17
5	0,00	-0,25	-0,02	-0,14	-0,04	0,07	0,00	0,03	-0,33
6	0,00	-0,16	-0,03	-0,13	-0,07	0,10	0,00	-0,05	-0,33
7	0,00	-0,15	-0,02	-0,11	-0,02	0,10	0,00	-0,02	-0,22
8	0,00	-0,17	-0,01	-0,11	-0,06	0,07	0,00	-0,02	-0,29
9	0,00	-0,14	-0,01	-0,09	-0,03	0,17	0,00	0,00	-0,10
10	0,00	-0,14	0,00	-0,05	-0,01	0,23	0,00	0,00	0,02
Total	0,00	-0,19	-0,03	-0,13	-0,03	0,18	0,00	0,05	-0,16

Notes: shown as a percentage change in mean equalized household disposable income by income component and income decile group. Income decile groups are based on equalized household disposable income in 2019, using the modified OECD equivalence scale. Each policy system has been applied to the same input data, deflating monetary parameters of 2020 policies by Eurostat’s Harmonized Index of Consumer Prices (HICP).

Figure 1: Policy Effects 2020-21, with alpha: CPI [1.03994697304463] on dataset HU_2019_b2



ANNEX 3. VALIDATION TABLES

Table 4.2 Number of employed and unemployed

	EUROMOD	External				Ratio			
	2018	2018	2019	2020	2021	2018	2019	2020	2021
Number of employed	4 455 587	4 469 500	4 512 100	4 518 600	N/A	1,00	0,99	0,99	N/A
Number of unemployed	192 840	172 100	159 700	196 100	N/A	1,12	1,21	0,98	N/A

Source: Hungarian Statistical Office - Long time series tables (STADAT 2.1.2) - The labour market in Hungary, Economic activity of population aged 15–74

Table 4.3 Market income in EUROMOD – Number of recipients (in thousands)

	EUROMOD	External				Ratio			
	2018	2018	2019	2020	2021	2018	2019	2020	2021
Employment income	5 020	4 208	4 355	4 443	N/A	1,19	1,15	1,13	N/A
Self-employment income	2 140	494	532	556	N/A	4,33	4,03	3,85	N/A
Rent income	37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Investment income	305	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: EUROSTAT home page - http://epp.eurostat.ec.europa.eu/portal/page/portal/government_finance_statistics/data/main_tables Employment by A*10 industry breakdowns [nama_10_a10_e] and http://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_qvd010.html

Table 4.4-Market income in EUROMOD -Annual amounts (in mld.)

	EUROMOD				External				Ratio			
	2018	2019	2020	2021	2018	2019	2020	2021	2018	2019	2020	2021
Average employment income (net yearly HUF)	2 274 751	2 533 976	2 533 976	2 274 751	2 632 944	2 935 308	3 220 860	N/A	0,86	0,86	0,79	N/A
Employment income	11 400 000	12 700 000	12 700 000	11 400 000	19 077 100	20 265 700	20 507 006	N/A	0,60	0,63	0,62	N/A
Self-employment income	1 397 037	1 453 333	1 453 333	1 397 037	1 539 107	N/A	N/A	N/A	0,91	N/A	N/A	N/A
Rent income	114 242	118 129	122 016	114 242	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Investment income	51 695	53 454	55 213	51 695	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source:

 Average employment income: HCSO, Stadta table, Average employed net income: https://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_qli030.html A-S

 Employment income: HCSO, Stadat tables: https://www.ksh.hu/docs/hun/xstadat/xstadat_hosszu/int2012c.html?down=585 D1 Households

 Self-employment income: HCSO National Accounts: <https://www.ksh.hu/docs/hun/xftp/idoszaki/monsz/monsz9514/t510.xls>

Total mixed income minus A and F

Table 4.5-Tax benefit instruments included but not simulated in EUROMOD -Number of recipients/ payers

	EUROMOD	External				Ratio			
	2018	2018	2019	2020	2021	2018	2019	2020	2021
Benefits									
Sickness benefits	224 467	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Old-age pensions	2 190 408	2 031 674	2 054 000	2 029 000	N/A	1,08	1,07	1,08	N/A
Disability benefits	353 578	314 570	293 755	281 840	N/A	1,12	1,20	1,25	N/A
Survivor benefits	124 820	124 948	116 763	109 198	N/A	1,00	1,07	1,14	N/A
Home maintenance	384 025	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes: The Hungarian EU-SILC sickness benefit variable contains only the sick leave recipients.

Source: Online Statdat table from the Yearbook of Welfare Statistics 2018. HCSO 2019.

Table 4.6-Tax benefit instruments included but not simulated in EUROMOD -Monthly amounts (in mld.)

	EUROMOD				External				Ratio			
	2018	2019	2020	2021	2018	2019	2020	2021	2018	2019	2020	2021
Benefits												
Sickness benefits	1 885	2 122	2 122	1 885	6 160	N/A	N/A	N/A	0,31	N/A	N/A	N/A
Old-age pensions	267 078	281 244	281 244	267 078	312 483	324 050	339 525	N/A	0,85	0,87	0,83	N/A
Disability benefits	19 850	20 639	20 639	19 850	23 886	N/A	N/A	N/A	0,83	N/A	N/A	N/A
Survivor benefits	5 255	5 406	5 406	5 255	2 506	N/A	N/A	N/A	2,10	N/A	N/A	N/A
Home maintenance	1 008	1 007	1 007	1 008	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: Online Statdat table from the Yearbook of Welfare Statistics 2019. HCSO 2020.

Table 4.7-Tax benefit instruments simulated in EUROMOD -Number of recipients/ payers

	EUROMOD				External				Ratio			
	2018	2019	2020	2021	2018	2019	2020	2021	2018	2019	2020	2021
Benefits												
Maternity grant	43 450	43 450	43 450	43 450	88 972	90 218	102 440	N/A	0,49	0,48	0,42	N/A
Child care allowance	120 783	120 783	120 783	120 783	159 226	155 954	150 669	N/A	0,76	0,77	0,80	N/A
Child raising support	62 147	62 147	62 147	62 147	32 607	32 698	32 445	N/A	1,91	1,90	1,92	N/A
Family allowance	1 081 438	1 081 438	1 081 438	1 081 438	1 082 791	1 077 010	1 073 101	N/A	1,00	1,00	1,01	N/A
Regular child protection allowance	232 572	216 847	207 007	223 059	298 203	263 216	242 025	N/A	0,78	0,82	0,86	N/A
SA - old age	49 178	40 696	39 171	41 179	6 757	6 825	6 727	N/A	7,28	5,96	5,82	N/A
SA_ stand-by allowance	109 639	110 887	110 887	110 887	86 109	79 344	79 327	N/A	1,27	1,40	1,40	N/A
Unemployment benefit	138 072	138 072	138 072	138 072	108 500	102 728	112 923	N/A	1,27	1,34	1,22	N/A

Source: Yearbook of Welfare Statistics 2020. HCSO 2019.

Table 4.7 (continued). Tax benefit instruments simulated in EUROMOD -Number of recipients/ payers

	EUROMOD				External				Ratio			
	2018	2019	2020	2021	2018	2019	2020	2021	2018	2019	2020	2021
Taxes and Social Insurance contributions												
Income tax	5 641 448	5 644 437	5 630 590	5 621 302	4 773 055	4 800 644	N/A	N/A	1,18	1,18	N/A	N/A
Simplified business tax	58 440	58 440	N/A	N/A	36 139	N/A	N/A	N/A	1,62	N/A	N/A	N/A
Employee social ins. contributions	5 017 225	5 017 225	5 017 225	5 017 225	4 647 280	5 026 310	4 953 350	N/A	1,08	1,00	1,01	N/A
Self-employed social ins. contributions*	445 313	445 313	445 313	445 313	702 614	700 742	692 863	N/A	0,63	0,64	0,64	N/A
Employee + employer soc. ins. contr.	5 020 287	5 020 287	5 020 287	5 020 287	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes: These amounts are not part of the official social statistics. The coverage of the external statistic is different from what we use in the Euromod model.

Table 4.8-Tax benefit instruments simulated in EUROMOD -Monthly amounts (Mld.)

	EUROMOD				External				Ratio			
	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020
Benefits												
Maternity grant	232	232	232	232	489	497	564	N/A	0,47	0,47	0,41	N/A
Child care allowance	3 442	3 442	3 442	3 442	4 975	4 862	4 753	N/A	0,69	0,71	0,72	N/A
Child raising support	1 771	1 771	1 771	1 771	919	921	918	N/A	1,93	1,92	1,93	N/A
Family allowance	24 544	24 544	24 544	24 544	25 642	25 456	25 407	N/A	0,96	0,96	0,97	N/A
Regular child protection allowance	225	210	200	216	315	279	257	N/A	0,71	0,75	0,78	N/A
SA - old age	1 256	1 030	965	1 062	198	206	209	N/A	6,35	5,00	4,63	N/A
SA - stand-by allowance	2 361	2 407	2 407	2 415	1 984	1 829	1 823	N/A	1,19	1,32	1,32	N/A
Unemployment benefit	3 117	3 373	3 620	3 708	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: National Accounts Hungary 2018-2020, HCSO 2020; Yearbook of Welfare Statistics 2019. HCSO 2020.

Table 4.8-(continued) Tax benefit instruments simulated in EUROMOD -Monthly amounts (Mld.)

	EUROMOD				External				Ratio			
	2018	2019	2020	2021	2018	2019	2020	2021	2018	2019	2020	2021
Taxes and Social Insurance contributions												
Income tax	1 914 272	2 122 287	2 121 384	1 905 618	2 612 904	2 424 565	2 527 742	N/A	0,73	0,88	0,84	N/A
Simplified business tax	52 767	55 254	57 859	60 587	38 778	43 364	1 691	0	1,36	1,27	34,22	N/A
Employee social insurance contributions	2 053 970	2 294 452	2 294 467	2 050 733	2 729 014	2 424 565	2 527 742	N/A	0,75	0,95	0,91	N/A
Self-employed social insurance contributions	391 642	409 094	391 597	361 787	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Employer social insurance contributions	2 226 881	2 480 651	2 226 225	1 770 085	2 499 631	2 738 799	N/A	N/A	0,89	0,91	N/A	N/A

Source: National Accounts Hungary 2018-2020, HCSO Online Statdat table 2020: https://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_qp001y.html?down=550; Yearbook of Welfare Statistics 2019. HCSO 2020.

Table 4.9-Distribution of equivalised disposable income

	EUROMOD				External				Ratio			
	2018	2019	2020	2021	2018	2019	2020	2021	2018	2019	2020	2021
D1	2,2	2,2	2,2	2,2	3,20	3,20	3,10	N/A	0,68	0,67	0,71	N/A
D2	4,5	4,5	4,5	4,5	5,40	5,50	5,40	N/A	0,83	0,81	0,83	N/A
D2	4,5	4,5	4,5	4,5	5,40	5,50	5,40	N/A	0,83	0,81	0,83	N/A
D3	6,2	6,1	6,2	6,2	6,40	6,50	6,50	N/A	0,96	0,94	0,95	N/A
D4	7,7	7,7	7,8	7,8	7,30	7,40	7,40	N/A	1,06	1,05	1,05	N/A
D5	9,0	9,0	9,0	9,0	8,40	8,40	8,40	N/A	1,07	1,07	1,07	N/A
D6	10,1	10,1	10,1	10,0	9,30	9,40	9,50	N/A	1,08	1,07	1,06	N/A
D7	11,1	11,1	11,1	11,1	10,50	10,60	10,80	N/A	1,06	1,05	1,03	N/A
D8	12,3	12,4	12,3	12,3	12,00	12,00	12,20	N/A	1,03	1,03	1,01	N/A
D9	14,6	14,6	14,6	14,7	14,20	14,40	14,20	N/A	1,03	1,01	1,03	N/A
D10	22,3	22,3	22,3	22,2	23,20	22,40	22,60	N/A	0,96	1,00	0,99	N/A
Median	1 796 967	1 962 066	1 967 552	1 814 373	1 677 081	1 866 253	2 107 383	N/A	1,07	1,05	0,93	N/A
Mean	1 876 658	2 045 596	2 058 276	1 893 538	1 893 318	2 094 591	2 361 172	N/A	0,99	0,98	0,87	N/A
Gini	30,0	30,2	30,0	29,9	28,70	28,00	28,30	N/A	1,05	1,08	1,06	N/A
S80/S20	5,5	5,6	5,5	5,5	4,35	4,23	4,30	N/A	1,27	1,32	1,29	N/A

 External statistic source: EUROSTAT home page - <https://ec.europa.eu/eurostat/web/main/data/database>

Table 4.10-Poverty rates by gender and age

	EUROMOD				External				Ratio			
	2018	2019	2020	2021	2018	2019	2020	2021	2018	2019	2020	2021
40% median HDI												
Total	11,0	11,6	11,2	10,7	5,0	5,3	6,6	N/A	2,20	2,18	1,70	N/A
Males	10,7	11,1	10,9	10,4	5,0	5,5	6,7	N/A	2,14	2,02	1,62	N/A
Females	11,2	11,9	11,6	10,9	4,9	5,1	6,6	N/A	2,30	2,34	1,75	N/A
50% median HDI												
Total	16,7	17,2	16,9	16,4	8,0	8,6	8,6	N/A	2,09	2,00	1,97	N/A
Males	16,5	17,0	16,7	16,3	7,9	8,9	8,7	N/A	2,09	1,91	1,92	N/A
Females	16,9	17,4	17,1	16,5	8,1	8,4	8,5	N/A	2,09	2,07	2,01	N/A
60% median HDI												
Total	22,7	22,5	22,1	22,5	12,8	12,3	12,3	N/A	1,77	1,83	1,79	N/A
Males	22,3	22,2	21,8	22,2	11,9	11,7	12,4	N/A	1,87	1,90	1,76	N/A
Females	23,0	22,7	22,2	22,7	13,6	12,8	12,1	N/A	1,69	1,78	1,84	N/A
70% median HDI												
Total	28,1	28,5	28,2	27,7	23,0	22,2	22,3	N/A	1,22	1,28	1,26	N/A
Males	27,4	27,5	27,3	27,1	21,9	21,2	21,4	N/A	1,25	1,30	1,27	N/A
Females	28,8	29,3	29,0	28,3	24,0	23,0	23,1	N/A	1,20	1,28	1,26	N/A
60% median HDI												
0-15 years	25,6	25,7	25,0	25,4	12,8	12,3	12,3	N/A	2,00	2,09	2,04	N/A
16-24 years	24,2	23,6	22,9	24,1	12,9	10,3	9,5	N/A	1,88	2,29	2,41	N/A
25-49 years	19,6	19,5	18,9	19,5	18,0	16,1	12,3	N/A	1,09	1,21	1,54	N/A
50-64 years	24,0	23,6	23,1	23,6	11,4	11,1	10,0	N/A	2,11	2,12	2,31	N/A
65+ years	22,5	22,9	22,9	22,8	14,5	14,4	14,8	N/A	1,55	1,59	1,55	N/A

 External statistic source: EUROSTAT home page - <https://ec.europa.eu/eurostat/web/main/data/database>