

EUROMOD

COUNTRY REPORT

DENMARK (DK)
2020-2023

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EUROMOD version 16.0+

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 Denmark. 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 I6.0+. 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

- + Overall policies are uniform across regions and municipalities, with a few differences arising from some discretionary benefits within the social assistance area. There can be differences in access to services, but the user charges are in principle the same for all, except in the case of day care for children where they can vary among municipalities. Municipalities, but not regions, have a possibility of setting the local income and property tax. Property tax within boundaries are set by the state.
- + The Fiscal Year follows the calendar year, e.g. from the 1st of January to the 31st of December.
- + The right to state pension is at the age of 66.5 for those born until the 1.7.1955 and 67 for those born since the 1st of July 1955. It is possible for individuals to postpone the age of retirement and then acquire a higher level of state pension. It is possible from 2020 to get a pension for seniors (senior pension) who has reduced physical capacity and only or able to work up to 15 hours per week. There is from 2022 an early pension (tidlig pension) for persons who has worked at least 42 years between the age of 16 and 61.
- + There is no minimum school leaving age, however children are obliged to 10 years of schooling (at a public school or at an equivalent level at home, private schools etc.), typically starting in August the (calendar) year the child turns 6 years.
- + Both adults and children are taxed individually, as a starting point. However, minor incomes for children from e.g. help at home or at parents' company are disregarded. Child benefits are paid to the person having custody and if split custody, where the child is staying the most, and if this is even, where the child has the address.
- + The tax system is mainly based on individual personal taxation, although there are a few possibilities for married spouses to, for instance, transfer redundant deductions in the different tax bases.
- + A lone parent is defined as a person living alone (neither with a spouse nor with a partner) taking care of a child below the age of 18. The definition of living alone is not always clear. Children are always defined as being below the age of 18.
- + Denmark to some degree has a dual tax system, where private capital incomes are taxed at a different rate than labour and transfer incomes. Both labour, transfer and capital incomes however are part of a comprehensive personal income tax system and enter alongside into various tax bases. Share income is taxed fully separately.
- + Taxes on labour and transfer incomes are withheld at source, through third-party reporting and payment by employers etc. The tax assessment is based on a preliminary assessment of income, which can be changed by the taxpayer. After the end of an income year a final tax return has to be filled in and/or confirmed by all taxpayers using a web-based solution, but most items are filled in already through the third-party reporting system. Payment of taxes might be changed during the year in order to increase the likelihood that people's actual income tax payments reflect what they should actually pay during the year.
- + Benefits and deductions are both indexed automatically through an adjustment of rates signed into law, according to which the indexation follows wage inflation (slightly less so for benefits). Means-tested benefits are typically held up against incomes from the most recent tax annual statement. However, there is an obligation to inform the authorities if there are substantial changes in income in order to change the benefit level during the year.

1.2 Social Benefits

Social assistance (*Kontanthjælp*): Social Assistance is the basic income maintenance instrument in the event of unemployment, long-term illness, etc. The benefit level varies with age, provider status, by whether recipient is living with parents and whether or not having a formal education. It is means-tested against both own and spouse's income and wealth. Since the 1st of October 2016, a ceiling of benefits was introduced which includes social assistance but also other benefits. However, the benefit level is never below the calculated social assistance. See more details in Section 2.3.2.

Self- and home-travel benefit (*Selvforsørgelse og hjemrejseydelse*): People who have not lived in Denmark in 9 out of the last 10 years will be given an integration benefit. The amount is at the level of the educational benefit with possible activity support. However, in so far as EU-citizens have the rights to benefits according to EU rules on free movement they will be given social assistance.

Unemployment benefits (*Arbejdsløshedsdagpenge*): UB are insurance-based, but subsidized. Set at 90 % of previous labour income, but with an upper threshold. This is restricted to 2 out of 3 years in a running 3 years period. The full right can be re-established by 52 weeks of full-time work within 3 years running time. The employer pays the first two days of unemployment. Since 2017 a new system was implemented especially with regard to how to re-establish the right to benefit, but also including a possibility of three days within a year without benefit for those not having any work during the year, and, lowering of the benefits for newly graduated without children, see further details in Section 2.3.1.

Sickness benefits (*Sygedagpenge*): After two weeks of illness the municipality ascertains the ability to work and eligibility for sickness benefits. Benefit levels vary by number of pre-illness working hours (full time/part time), but also the option of working a reduced number of hours and receiving sickness benefits for other remaining hours. The maximum duration of sickness benefit is 22 weeks within a period of 9 months after which a benefit at the level of social assistance is paid. However, in contrast to social assistance it does not depend on spouse or cohabitant person's income and wealth and an increased effort is made to assess how the recipient may be reintegrated into the labour market. Receiving the benefit can be prolonged in case of a life-threatening disease and in a few other cases¹.

Maternity (*Graviditets- og Barselsorlov*) and paternity leave benefit (*Fædreorlov*): Mothers are entitled to a leave 4 weeks prior to the expected time of birth and 14 weeks after giving birth. Fathers are entitled to 2 weeks after the birth. Hereafter there is a parental leave of 32 weeks, which can be shared among the parents. Between 8 to 13 weeks of this leave can be postponed until the child reaches the age of 9, although only one of the parents has the right to do it, the other might go on leave too if the employer agrees to it. Wage-earner, self-employed and students are entitled to the leave benefit but the size of the benefit differs between the three groups. No income test applies. From 1st of July 2022 there will be, beside the four weeks before expected time of birth, and the two weeks after birth to both father and mothers, 24 weeks to each parent, of which 9 weeks can't be shared among the parents.

Education grant (*Statens Uddannelsesstøtte, SU*): Given to students in validated branches of study. Benefit levels vary by age, type of education and by whether living with parents or by oneself. Furthermore, students have to prove that they are active students by passing exams.

Child family grant (*Børnefamilieydelse*): Families with children below 18 are paid a tax-free child family grant, with benefit level varying with the age of the child. The grant is automatically

¹ In the Danish welfare state model many will during sickness and leave have full wage income from the employer for up to 26 weeks due to the collective agreements. This is not modelled in Euromod.

paid from 2022 and it is split in half between the two parents, unless the child after a divorce is more than 9 days by one of the parents where it then will be paid to this person.

Child benefits (*Børnetilskud*): A number of different tax-free child benefits are paid to families/children in special circumstances, such as single parents/providers, pensioners or student parents, twins etc.

Child support (*Børnebidrag*): After divorce, separation or out-of-wedlock birth, parents are obliged to pay child support/alimony to the child (that is, in practice to the upbringing parent). The amount depends on the income of the person who has to pay within certain brackets.

Housing benefit (*Boligsikring*): Tax-free benefits for tenants who are not old-age pensioners. Given as a function of the rent (excl. costs for heating) and family composition, etc. Phased out, based on household income and wealth.

Housing grant (*Boligydelse*): Tax-free benefits for tenants who are old-age pensioners. Given as a function of the rent (excl. costs for heating) and family composition, etc. Phased out, based on household income and wealth.

Disability pension (*Førtidspension*): Given to persons below retirement age with permanently reduced ability to work after all other possibilities to be or become self-supporting have been discarded. The benefit is taxable. Benefit level varies with marital status. Phased out against own and spouse's income.

Early retirement pension (*Efterløn*): Full or partial retirement by choice from the age of 64 years. It can be received until the standard retirement age for the age cohort. It is conditional upon previous unemployment insurance and pension contributions. If retirement is postponed 2 years the individual receives higher benefits according to rules that have been in place until the 1st of July, 2022.²

Old-age pension (*Folkepension*): Given from age 67. Benefit level varies with marital status. The benefit is phased out against own labour income.

Old-age pension supplement (*Pensionstillæg*): Given from age of eligibility for old-age pension. Benefit level varies with marital status. The benefit is phased out against both own and a spouse's income.

Heating subsidy (*Varmetillæg*): Old-age and disability pensioners can apply for a heating subsidy to cover parts of their costs for heating fuel. Phased-out against income and wealth.

Survivors benefits (*Efterlevelsespension*): Old-age or disability pensioners can receive a survivors benefit when the partner dies for a period of 3 months. The monthly benefit is equal to the couple's combined pension payment.

Survivors help (*Efterlevelseshjælp*): A person, whose partner (married or cohabitant) dies, can receive a lump-sum taxable benefit.

Old-age supplementary benefit (*Ældrecheck*): Annual taxable benefit paid out to all old-age pensioners with liquid financial assets below a certain threshold.

² The increase in early retirement pension age is currently not taken into account in EUROMOD simulations, as a relatively small number of people were affected by the policy change in 2014 and 2015. This is also due to a declining number of members of the early retirement scheme.

Green check (*Grøn check*): A tax-free lump sum benefit to compensate for the increase in environmental and energy taxes, with rates varying between adults and children. It will be reduced and phased out. This started in 2018.

Resource activity benefit (*Ressourceforløbsydelse*): it is a social assistance benefit, but it is not means tested according to spouse income and wealth. It aims to support individuals who do not have any work-ability left who might be entitled to disability pension.

- *Not strictly benefits*

Flex-job benefit (*Fleksjobsydelse*): It may be granted to employees with permanent lack of abilities to work an ordinary full-time job. The recipient works an agreed number of hours which is paid by the employer. This salary will be supplemented with an unemployment benefit for up to 37 hours per week. Unemployed and early retirees may also have access to flex-job benefits – and it is referred to as *ledighedsydelse* for unemployed and *fleksydelse* for early retirees.

1.3 Social contributions

Denmark has a number of contributory payments for the accrual of unemployment benefits and old-age pensions. However, the major part of transfer benefits is financed through the general tax system.

Supplementary labour market pension (*Arbejdsmarkedets tillægspension, ATP*): Mandatory old-age pension contribution, paid with a fixed rate that varies with the length of employment contract (e.g. monthly) and the extent of work (full-/part-time). Paid by employee (one-third of rate) and employer (two-third of rate). There can be slightly different levels among sectors.

Unemployment benefit contribution (*A-kasse-bidrag*): Required for eligibility to unemployment benefits (see above). Rates vary across unemployment insurance funds due to differences in the cost of administration as the payment otherwise reflects the level of unemployment benefit set by the state. Deductible in taxable income.

Payment for membership of trade unions: Deductible in taxable income with a maximum of 6,000 DKK in 2022.

Early retirement pension scheme contribution (*Efterlønsbidrag*): Required for eligibility for early retirement pension scheme (see above). Conditional upon unemployment insurance membership in a number of years. Deductible in taxable income.

1.4 Taxes

Labour market contribution (*Arbejdsmarkedsbidrag*): A tax of 8 % levied upon gross labour income, with deduction of the employee-paid part of the supplementary labour market pension contributions.

Earned income tax credit (*Beskæftigelsesfradrag*): Negative marginal tax rate on labour income of 10.65 % in 2023, with a maximum allowance of 45,600 DKK in 2023. For single income earners there is a supplementary of 6.25 % with a maximum allowance of 24,400 DKK. Finally, there is a job tax-credit (*jobfradrag*) of 4.5 % above labour income of 208,200 with a maximum of 2,700 DKK in 2023.

Municipality tax (*Kommuneskat*): The tax rate is determined individually by the 98 municipalities, but collected through the state's tax system and levied upon the taxable income

base after a personal allowance. However, overall the average municipality tax shall in principle not increase.

Church tax (*Kirkeskat*): A voluntary contribution collected through the tax system, if the individual tax payer does not opt out. The rate is based upon budget from the church and is determined individually by the 98 municipalities and is on average 0.87 per cent.

Bottom-bracket tax (*Bundskat*): The lowest of the three progressive state taxes. Tax rate is 12.09 % in 2023. Levied upon the sum of the personal income tax base and net capital income, with the general personal allowance subtracted. Spouses can transfer negative net capital income and any unused personal allowance between them for the calculation of the bottom-bracket tax.

Top-bracket tax (*Topskat*): The highest-level of the three progressive state taxes. Tax rate of 15%. Levied upon the sum of the personal income tax base, positive net capital income and contribution to capital pension schemes, with the top-bracket tax allowance of 568,900 DKK in 2023 subtracted. There is a yearly allowance in 2023 of 48,800 DKK for the inclusion of positive net capital income.

Tax ceiling (*Skatteloft*): A ceiling at the level of 52.07% in 2023 on the aggregate (nominal) tax rate is implemented by reducing the tax rate on the top-bracket tax by the difference between the tax ceiling and the sum of the municipal and state taxes, excluding the church tax.

Free telephone tax (*Fri telefon-skat*): All tax payers, who have an employer-provided telephone at their disposal. This was abolished in 2018-2019. In 2023 it is the income-tax of an amount of 3,100 DKK per year.

Shares tax (*Aktieskat*): Net income from shares (share profits, dividends and premiums, minus losses) is taxed progressively below/above 57,200 DKK in 2022 with 27/42 %.

Property value tax (*Ejendomsværdiskat*): A progressive state tax on the overall value of property, based on the official property value estimate. Both this tax base and the threshold for the progressivity have been frozen nominally since 2002.

Land value tax (*Grundskyld*): A municipal tax on the land value of residential property with tax rates set by the municipalities varying between 1.6 % and 3.4 %.

Value-added tax (*Moms*): Tax rate of 25 %. It is levied uniformly upon all transactions with only exceptions of those areas identified by the EU directives and newspapers.

Excise duties (*Punktafgifter*): Various excise taxes with varying tax rates or duties are levied upon goods such as cigarettes, energy use, and environmentally hazardous goods.

Inheritance tax (*Boafgift*): The estate is taxed with 0 %, 15 % or 36.25 % for a spouse, near relatives or more distant relatives as heirs above a threshold of 321,700 DKK in 2023.

Gift tax (*Gaveafgift*): Gifts are taxed with 0 %, 15 % or 36.25 % for a spouse, near relatives or more distant relatives as recipients. With a threshold for near relatives of 71,500 DKK in 2023.

Pension saving reduction (*Ekstra pensionsfradrag*): 15 years before pension age it is 12 % of pension saving (with a maximum of 9,348 DKK) and 5 years before it is 32 % (with a maximum of 24,928 DKK) of savings for pension purposes.

2. SIMULATION OF TAXES, SOCIAL INSURANCE CONTRIBUTIONS AND BENEFITS IN EUROMOD

2.1 Scope of simulation

Tables 2.1 and 2.2 present an overview over the simulated benefits and taxes and social contributions, respectively.

Table 2.1 Simulation of benefits in EUROMOD

	Variable name	Why not fully simulated?				
		2020	2021	2022	2023	
Unemployment benefits	bunct_s	PS	PS	PS	PS	No data on unemployment history; Previous earnings inferred from unemployment benefit received.
Benefits for partially disabled waiting for subsidized work or after flex job	bunot	I	I	I	I	No data on disabled waiting for subsidized work or flexjob.
Sickness benefits	bhl	I	I	I	I	No data on health status connected to use of sickness benefit and further also occupational based topping up.
Social Assistance Integration benefit	bsa_s -	S E	S E	S E	S E	No data on length of stay in Denmark (part of bsa_s).
Resource activity benefit	Bsaot	I	I	I	I	Includes also other social assistance benefits.
Education grant	Bed	I	I	I	I	
Maternity/paternity leave	-	I	I	I	I	Benefit included in employment income (yem) for public servants, students and self-employed incl. in other child benefits (bfachot).
Child Family Grant	bfachnm_s	S	S	S	S	
Ordinary Child Benefit & supplement	bfach00_s	S	S	S	S	
Child benefit for student parents	bfached_s	S	S	S	S	
Child benefits for twins etc. & adoptions	bfachot	I	I	I	I	Rare benefit. No information on adoption.
Child support	bfachot	E	E	E	E	No information on parents outside household.
Disability pension	pdi	I	I	I	I	No impartial information on ability to work.
Housing benefit	bho01_s	S	S	S	S	
Housing grant	bho02_s	S	S	S	S	
Heating benefit	poaot	I	I	I	I	
Early retirement pension	-	E	E	E	E	
Old-age pension	poa00_s	S	S	S	S	
Old-age pension supplement	poa01_s	S	S	S	S	

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Old-age supplementary benefit	poa02_s	S	S	S	S	
Survivors benefits	psu	I	I	I	I	No information on death of partner.
Green check	bhtuc_s	S	S	S	S	
Employee compensation scheme COVID-19	bwkmcee_s	-	-	PS	PS	No data on employees entering in compensation scheme
Self-employed compensation scheme COVID-19	bwkmcse_s	-	-	PS	PS	No data on self-employed entering in compensation scheme

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

	Variable name	Why not fully simulated?				
		2019	2020	2021	2022	
Labour market contribution	txc_s	S	S	S	S	-
Supplementary labour market contribution	tscpi_s	S	S	S	S	-
Contributions to unemployment insurance scheme & early retirement pension scheme	tyrui_s	PS	PS	PS	PS	No individual data on contribution => randomly assigned from population data.
Earned Income Tax Credit	tintc_s	S	S	S	S	-
Municipality tax	tmu_s	S	S	S	S	-
Church tax	tcr_s	S	S	S	S	-
Health contribution	thl_s	S	S	S	S	Abolished from 2020
Bottom-bracket tax	tinbt_s	S	S	S	S	-
Top-bracket tax	tinto_s	S	S	S	S	-
Multimedia tax (now tax on free telephone)	-	E	E	E	E	No information on the tax base.
Shares tax	-	E	E	E	E	No isolated data on share income
Property value tax	tpr_s	PS	PS	PS	PS	Tax base derived from tax payment.
Land value tax	-	I	I	I	I	No isolated data on the tax payment or on the land value.
Inheritance tax	-	E	E	E	E	No information on inheritance
Gift tax	-	E	E	E	E	No information on gifts
Value-added tax	-	E	E	E	E	No information on total consumption expenditures

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.

2.1.1 Part-simulated tax-benefit components

Some benefits use eligibility information from the data due to lack of information in the data to simulate all eligibility rules. This is the case for the unemployment insurance benefit (bunct_s). The benefit is only simulated for those who receives the benefit as indicated in the data. A similar case is the property value tax (tpr_s) which is imputed from the paid property tax. The imputed value of property is used to simulate the property tax. Also the contribution to unemployment insurance (tyrui_s) is part-simulated as information on the participation to the unemployment insurance is not available. This information (lrg) is simulated through a discrete model based on national administrative register data.

2.2 Main policy changes

This section show the main changes of policy, whereas minor adjustment of, for example, income brackets in line with the rules for adjustment can be found in the sections of the individual changes. For 2020-2022 the main change has been regarding wage compensation schemes, see more details below. In 2023 change in rules related to the impact of wages income on pensions has been abolished related to the spouse income. This will presumably be changed from 1st of January 2024 so that in general wage income do not have an impact on the basic state pension, whereas other types of income still can have.

Policies	2020-2021	2022	2023
Benefits	<p>Extraordinary wage-compensation scheme.</p> <p>Senior pension for persons having worked at least 20-25 years full time and only able to work more in present occupation of 15 hours, at the earliest six years before pension age.</p>	<p>Early pension (Tidlig pension) started from 1st of January 2022 based upon having at least 42 years of work after the age of 16 and until 61 years of age.</p> <p>Unemployed insured taking a vocational training can get 10 % higher level of benefit</p>	<p>Basic state pension for a person is not influenced by wage income from a spouse.</p>
Social insurance contributions			
Direct taxes			Abolished for the first 5 months of duties on electricity.
Other		<p>Child benefit is paid with half to each parent, with a few exceptions in case of divorce.</p> <p>A temporary support of up to 6000 kroner for those with high increase in heating cost (using gas or other heating with an increase in cost of more than 65 %) and an income below 706,000 Danish kroner before labour market contribution.</p>	<p>A one-time payment of 5000 D.Kr. to old age pensioners if they have a total amount of wealth below 95.500 D. Kr.</p>

		There has further been cap on increase in rent and lump sum payment to pensioners receiving the supplementary pension of 2.500 D.Kr., most students and other outside the labour market 2000 D.Kr. as well as a higher employment allowance.	
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Note: Some changes enacted in a year might be decided in a previous year as implementation of, for example, change in the tax-structure often takes time.

2.3 Order of simulation and interdependencies

The following table shows the order in which the main elements of the Danish system in 2020-2023 are simulated. The labour market contribution and the supplementary labour market pension contribution are the first instruments to be simulated, as both are functions of only gross employment incomes.

Taxable benefits such as the unemployment benefit and social assistance are simulated before the simulation of taxes, as they enter the tax bases. Likewise, for the earned income tax credit, which is a function of gross employment income and both the labour market contribution and the supplementary labour market pension contribution.

Table 2.3 EUROMOD Spine: order of simulation, 2019-2022

Policy	Description	Main output
xpp00_dk	Contribution to private pensions that can be deducted from personal income	xpp00_s
ysecomp	Self-employed compensation scheme COVID-19	bwkmcse_s
txc_dk	Labour Market Contribution, a gross tax on all employment income	txcee_s, txcese_s, txc_s
tscpi_dk	Supplementary labour market pension contribution, a mandatory pension contribution	tscpiee_s, tscpier_s
tinta0x_dk	Additional deduction	tinta0x_s
tyrui_dk	Unemployment benefit contribution and early retirement pension contribution, voluntary contribution to individual unemployment benefit insurance/early retirement accounts	tyrui_s
bunct_dk	Unemployment benefits and similar benefits	bunct_s
bma_dk ^S	Mother's component of maternity and parental leave	bma_s
bpa_dk ^S	Father's component of paternity and parental leave	bpa_s
tintc_dk	Earned Income Tax Credit	tintc_s
poa_dk	Old age pension benefits(basic amount) supplement pension and old-age supplementary benefit	poa00_s, poa01_s, poa02_s
bsa_dk	Social Assistance	bsa_s
tmu_dk	Municipality Tax	tmu_s
tcr_dk	Church Tax	tcr_s
thl_dk	Health Contribution, a tax	thl_s
tinbt_dk	Bottom Bracket Tax	tinbt_s
tinmd_dk	Medium Bracket Tax	tinmd_s
tinto_dk	Top-bracket tax	tinto_s
tpr_dk	Property Tax	tpr_s
bfachnm_dk	Child Family Grant	bfachnm_s
bfach00_dk	Ordinary child benefit & Supplementary child benefit	bfach00_s
bfached_dk	Child benefit for student parents	bfached_s
bho01_dk	Housing Benefit	bho1_s
bho02_dk	Housing Grant	bho2_s
bhtuc_dk	Green check	bhtuc_s
bfachxp_dk	Extra child benefit	bfachxp_s
yemcomp	Employee compensation scheme COVID-19	bwkmcee_s

^S Switched off in the baseline

COVID-19 policies are not included in the baseline even if they are “on” in the spine given that they only work when labour market transitions (TransLMA) are switched on.

2.4 Policy Extensions

There is no minimum wage extension.

2.5 Benefits

2.5.1 Unemployment benefit (Arbejdsløshedsdagpenge og andre A-kasse-ydelser, *bunct_s*)

Table 2.1: Characteristics of the unemployment benefit

		2020	2021	2022	2023
Eligibility	Contribution period	1,924 hours during the last 3 years			
	Other conditions	Member of unemployment insurance fund for at least 12 months prior to unemployment unless having participated in education for at least 18 months or served military service.			
	Eligibility of self-employed	Yes	Yes	Yes	Yes
Payment	Contribution base	Average employment income of the 12 highest income months out of the last 24 months prior to unemployment.			
	Basic amount	90% of the contribution base (different for those in education or military service, see below)			
	Additional amount	No additional amount.			
	Floor	No minimum amount.			
	Ceiling	228,996	231,864	232,212	236,736
Duration	Standard (in months)	24 months			
	Special cases (in month)	Possibility to extend for another 12 months if working a limited number of hours while unemployed. Every hour in employment increases the duration by 2 hours (up to 1,924 hours). The hourly wage must be above 132,19 DKK in 2023. The duration may also be reduced by 1 day if the unemployed person works less than 148 hours during 4 months of unemployment. For students/conscripts without from the 1 st of May 2023 a maximum of 12 months of benefits is available.			
Subject to	Taxes	Yes	Yes	Yes	Yes
	Social Insurance Contribution	No	No	No	No

- **Definitions**

The unit of analysis is the individual (tu_individual_dk).

- **Eligibility conditions**

For members of an unemployment insurance fund (member for at least one year) experiencing unemployment. Benefit is paid for a maximum of 2 years within a three-year time-period. Beneficiaries need to be in work for a minimum of 1,924 hours during the last three years. Having been conscript as well as having had an education

of at least 18 months also gives right to be member of an unemployment insurance fund (and even without a one-year membership have the right to receive benefits). Since 1st of January 2017 the duration of receiving the benefit can be prolonged from 2 to up to 3 years if the unemployed person is working for a limited number of hours while unemployed. This measure has been implemented in order to encourage participation in the labour market even if the unemployed person cannot find full-time employment. If a person, even if unemployed, can get work for just a few hours, a week or so the rule is that for every hour worked while actually unemployed, the unemployed person can prolong receipt of the benefit for two more hours with a total maximum of 1,924 hours (which represents one full year of employment) of extra unemployment benefits. This means that the unemployed person has to work on average 9.3 hours per week for two years in order to receive the unemployment benefit for an additional year. Only hours reported to the central tax-system by the employer are counted as working hours and the hourly wage may not be lower than 132.19 DKK in 2023. Unemployed persons can gain extra hours of unemployment benefit but also face the risk of losing benefit if they are not employed. Those who do not work 148 hours (which is equivalent to 9.3 hours per week) during 4 months of unemployment will lose one day of the benefit. This is repeated for every four months a person is unemployed. Since 1st of July 2017 unemployment benefit was paid per hour and not per day.

In 2022 unemployed insured person participating in vocational training the benefit was raised to 255,432 Kroner (e.g. 10 percentages points higher).

- **Income test**

Upper limit on the received benefit, see below.

- **Benefit amount**

90 per cent of the previous employment income (yempv), with an upper limit of 236,736 DKK per year in 2023. For conscripts and those having had education of at least 18 months the ceiling will be 82 % of the maximum benefit for those being providers and 71.5 % for those not being providers. Since 2017 the calculation of the 90 % with the upper limit will be based upon the highest income in 12 months out of the last 24 months. The calculation used to be based on the wage of the last 3 months prior to unemployment in previous years. The upper limit varied across years according to the table below:

Table 2.5 Upper limits for unemployment benefits per year (DKK)

	2020	2021	2022	2023
Upper limit	228,996	231,864	232,212	236,736
Students/Conscripts				
With dependent child	187,776	190,121	190,416	194,124
Without dependent child	163,728	165,780	166,037	169,272

Source: www.borger.dk and www.bm.dk/satser

Note: From the first of May 2023 the upper limit will be higher for the first three months (281,388), and it will be lower students/conscripts without children (116,400).

EUROMOD modelling:

1) Membership of an unemployment fund (lrg=1) is simulated through a discrete model based on national register data.

2) The maximum amount of benefit that can be received varies according to the insurance status of the recipient, e.g. part-time insured vs. full-time insured. Only full time insurance is assumed in the EUROMOD simulation. The maximum amount for part-time insured people is equal to 2/3 of the full time maximum. The

upper limit for conscripts and students is not taken into account due to missing information on the previous labour market status.

3) Previous employment income is not recorded by EU-SILC. For this reason, starting from the benefit amount, the previous employment income is calculated for those receiving the benefit by reversing the benefit rule. The unemployment benefit is then simulated using the simulated previous earnings.

4) The new reform that requires unemployed to be employed is not implemented given the availability of data.

5) The additional benefit for unemployed participating in vocational training is not simulated due to data availability.

2.5.2 Social assistance (**Kontanthjælp; Aktivering af kontanthjælpsmodtagere; Integrationsydelse, bsa_s**)

- **Definitions**

The unit of analysis is the individual (tu_individual_dk), although married partner's income, wealth and the presence of dependent children enter in the simulation (tu_bsa_dk). Children are defined as younger than 18 years.

- **Eligibility conditions**

Eligibility is conditional upon:

- + The person has experienced a change in the living situation (e.g. unemployment, divorce, etc.) and the person is not able to maintain a living
- + Economic needs cannot be fulfilled by other means, including wealth
- + The person is an EU citizen or has stayed in Denmark for 9 out of the last 10 years
- + No other income (il_bsa=0).

- **Income test**

The income test is satisfied if the recipient does not have any income and any financial wealth left. Financial assets less than 10,000 DKK (20,000 DKK) for single (married) recipients are disregarded from the income test.

Married persons are obliged to support each other. For this reason, incomes of the married partner are withdrawn from the amount received by the person entitled. The benefit withdrawal starts in principle from the earned income albeit with a reduction in 2023 of 29.43 DKK per worked hour.

Income included in the income test:

- + (Self-)Employment income
- + Pension related benefits
- + Disability benefits
- + Unemployment related benefits
- + Net capital income
- + Wealth (above the threshold)

- **Benefit amount**

The tables below describe the benefit amount for entitled individuals. Differences in amounts arise with respect to the age of the claimant, her/his provider status, whether she/he lives with her parents. The provider status is simulated in EUROMOD by controlling for the presence of children in the family.

Since 2014 social assistance has in principle been abolished for those below the age of 30 who do not provide for a child and whose highest education is primary or lower. The benefit is substituted by an education grant if they participate in vocational training and, under certain conditions, by an activity grant. The table below illustrates benefit entitlement.

Table 2.6. Social assistance benefits, per month per person. DKK

	2020	2021	2022	2023
Provider (over 30 or under 30 and not married)	15,355	15,547	15,570	15874
Provider (under 30 and married)	10,268	10,396	10,412	10615
Non provider over 30 or over 25 with more than primary education	11,554	11,698	11,716	11944
Non provider between 25 and 30 with primary education or less	6,331	6,410	6,420	6545
Non-provider younger than 25 with more than primary education				
- living by oneself	7,448	7,541	7,552	7699
- living with parents	3,594	3,639	3,644	3715
Non-provider younger than 25 with primary education or less (education grant)				
- living by oneself	6,331	6,410	6,420	6545
- living with parents	2,728	2,762	2,766	2820

Source: www.bm.dk and www.borger.dk

Benefit amounts received by providers are subject to a reduction if the child is not living in Denmark. This rule does not apply if the child lives in an EU/EEA country or in other countries where specific agreements are in place. Before making reduction in social assistance when working, a certain amount of employment income is disregarded. In 2023, benefit recipients are allowed to earn 29.43 DKK per hour for a maximum of 160 hours per month.

Social assistance inflation compensation (Kontanthjælp inflations compensation, bsaxp_s). For families on social assistance and with children under 18 years old there will be an inflation compensation in 2023 with the following yearly amounts:

1 child	7500
2 children	11250
3 children and more	13500

The amount is tax free and do not have any impact on other benefits.

Table 2.7. Deduction of employment income, amount per working hour (DKK)

	2020	2021	2022	2023
Hourly income	27.84	28.04	28.46	29,43

A benefit ceiling for receiving social assistance and other benefits, as described in the next sentence, exists. It includes the following benefits: social assistance, integration benefit, educational allowance and specific means tested benefits, such as housing benefit, housing grant, support for payment of day-care. It cannot be

reduced to be below the level of social assistance and not reduced with more than the sum of specific support and housing benefits.

Table 2.8. Ceiling per month and household before tax (Danish Kroner)

	2020		2021		2022		2023	
	Standard	Reduced	Standard	Reduced	Standard	Reduced	Standard	Reduced
Single without children	13,975	5,539	14,150	5,608	14,171	5,616	14,447	5,726
Single provider with one child	16,009	7,499	16,209	7,664	16,233	7,675	16,550	7,752
Single provider with two or more children	16,387	7,569	16,592	7,664	16,617	7,675	16,941	7,825
Married/Cohabiting without children	11,554	5,539	11,698	5,608	11,716	5,6016	11,994	5,726
Married/Cohabiting with 1 child	15,308	7,499	15,547	7,664	15,570	7,675	15,570	7,752
Married/Cohabiting with 2 children or more	16,387	7,569	16,592	7,664	16,617	7,675	16,617	7,825

Source: www.bm.dk and www.borger.dk

The ceiling only applies to those who have not worked for at least 225 hours of ordinary unsupported work within a time period of 12 months prior to receiving the benefit. Persons with disabilities living in specific housing types (e.g. institutional homes) are not affected. Social assistance recipients are furthermore expected to work for at least 225 hours a year. If they do not fulfil this requirement, the ceiling is reduced. It depends on whether the person is single or married/co-habiting as well as on the number of children, see Table 2.8.

EUROMOD modelling:

- 1) The conditions regarding having experienced an exogenous shock and citizenship are not simulated.
- 2) The income test is performed using the income list `il_bsa`. Its components are: Earnings, Old age pensions, Disability Pensions, Survivor Pensions, Early Retirement Pensions, Private Pensions, and Unemployment Benefits. Plus, wealth above a certain threshold.
- 3) We assume that all the individuals below age 30 qualify for the education grant if they have achieved primary education or less. We do not simulate the activation grant because of a relatively small number of recipients (around 6,000 people in the whole country).

4) We only take social assistance, housing benefit, housing grant and educational allowance into account for the ceiling as information on other specific means tested benefits as well as the integration benefit is not available.

5) Information on the hours of ordinary unsupported work previous to benefit receipt is not available. We assume that everyone with less than 1 working month in the current year is subject to the benefit ceiling. (1 month refers to 225 divided by 37 weekly working hours divided by 4 weeks per month).

6) The reduced ceiling is not taken into account as it only affects the ceiling after the first year of receiving social assistance benefit.

2.5.3 Child family grant (*Børne- og ungeydelse, bfachnm_s*)

- *Definitions*

The Child family grant is a benefit that is given to the families with child(ren) under 18 years old. The amount depends on the age of the child (ren) and can be reduced if you exceed a certain income threshold.

- *Eligibility conditions*

The unit of analysis is a family formed by parents and dependent children (tu_bfa_dk).

The eligibility condition is to have child (ren) aged 0-17 years.

For migrants from outside the EU there has since 1st of September 2015 been a rule that they should have had lived in Denmark at least two out of the last 10 years. After 6 months with permanent residence or work they will have the right to 25 %, after 1 year 50 % and after 1½ year 75 %. This is still the rule for those who have received the benefit before the 1st of January, 2018. Since then the rule has been six out of ten years. With an increase in benefit of 8.3 % for every six months living in Denmark.

The grant is from 2022 automatically paid and shared with a half to each parent, unless the child after a divorce is more than 9 days by one of the parents where it will be paid to this person.

The amount of the benefit is reduced if the reference income is above a specific threshold (in 2023 the threshold is 852,600). Up to 2022 the reference income was at the household level, while from 2022 it is at the individual level.

- *Income tested*

The concept of income used for the test is the one used for the calculation of the top-income tax (see section 2.5.8). Withdrawal rate is 2% for parental income above a threshold of 852,600 DKK in 2023. The income test follows the following rules:

- a) If parents are unmarried, the mother's income is used. In absence of the mother, the father's income is used.
- b) If parents live together, and only one parent has income above the threshold, then the income of this person is used for the income test for that person benefit. Thus the income of the cohabiting partner is not taken into account. His or her half of the benefit will not be reduced.
- c) If parents live together and both have income above the threshold, the withdrawal rate is applied to the income of each partner which is above the threshold.

The benefit varies for 0-2 year olds, 3-6 year olds and 7-17 years old children, see table 2.9. The amount is paid out quarterly, although for those between 15-17 years it is a monthly payment. In 2023 due to the inflation an extra amount of 600 D.Kr. is paid out per child. This extra amount is not subject to reduction even if the income is above the threshold.

The total amount is split among parents unless the child lives mainly by one parent.

Table 2.9. Child family grant, per child per year, (Danish Kroner).

Age of the child	2020	2021	2022	2023	Extra in 2023
0-2 years	18,384	18,516	18,612	18,984	600
3-6 years	14,556	14,664	14,724	15024	600
7-17 years	11,448	11,532	11,592	11,820	600

Source: www.skm.dk, www.borger.dk,

EUROMOD modelling: In EUROMOD the benefit is assigned to the child. We assume that children with migration background have lived at least two/six out of the last 10 years in Denmark and thus, are eligible to the full amount of the benefit.

2.5.4 Ordinary child benefit and supplement (Ordinært børnetilskud and ekstra børnetilskud, *bfach00_s*)

- *Definitions*

The unit of analysis is a family formed by parents and own dependent children (tu_bfa_dk).

- *Eligibility conditions*

Lone parent, or both parents are old-age pensioners, or both parents are disability pensioners.

- *Income test*

With an individual income (not household income) above 852,600 in 2023 the benefit (at the individual level) will be reduced with 2 % for the part of income above the threshold.

Income included in the income test:

- + (Self-)Employment income and non-cash employee income
- + Unemployment related benefits
- + Social assistance related benefit
- + Education related allowances
- + Pension related benefits
- + Sickness and disability related benefits
- + Regular inter-household cash transfer
- + Positive net capital income
- Employee/self-employed/supplementary labour market contribution

- *Benefit amount*

6,232 DKK per child in ordinary child benefit plus a supplement of 6,352 DKK per benefit unit for lone providers, see table 2.10, in 2023.

Table 2.10. Ordinary child benefit rates, per. year, (DKK)

	Basic (per child)	Supplement (per unit)
2020	5,880	5,992
2021	5,996	6,112
2022	6,068	6,184
2023	6,232	6,352

Source: www.borger.dk

2.5.5 Child benefit for student parents (*Særligt børnetilskud til uddannelsessøgende forældre, bfached_s*)

- *Definitions*

The unit of analysis is a family formed by parent(s) and own dependent children (tu_bfa_dk).

- *Eligibility conditions*

Being in tertiary education and having child(ren) and being

- + lone parent not receiving education grant (benefit for all children), or
- + living with partner, but only one receives education grant (benefit for all children), or
- + living with partner, and both receive education grant (benefit for children beyond the first)

- *Income test*

If a single person has an income above 163,900 DKK in 2023 and a couple above 245,700 DKK in 2023 then 10% of the income above the threshold is subtracted from the benefit amount.

Income included in the income test:

- + (Self-)Employment income
- + Disability related benefits
- + Unemployment related benefits
- + Net capital income

- *Benefit amount*

8,188 DKK per child per year in 2023 Exception: only one benefit if living with partner and both receive education grant. In 2020 7,720 DKK, in 2021 7,876 and in 2022 7,972.

2.5.6 Extra temporary child benefit (midlertidig børnefamilieydelse, *bfachxp_s*)

From 2020-2022 there is an extra child benefit for those who receive reduced benefits due to the ceiling of total benefits, such as housing benefit. In 2023 the last payment will be done in the month of February.

- **Definitions**

The unit of analysis is a family formed by parent and own dependent children (tu_bfa_dk).

- **Eligibility conditions**

Receiving reduced benefits due to the ceiling on total benefits (see table 2.8).

- **Benefit amount**

The benefit is 616 DKK in 2023 per month for those single providers on educational support or social assistance, 718 DKK in 2023 for single providers with self- and home travel benefits, and 564 DKK in 2023 for a parent who is married or co-habiting. There will be one supplementary benefit of 666 DKK in 2023 independent on the number of children. In total it cannot exceed the amount the benefit due to the ceiling has been reduced with.

Table 2.11. Extra temporary child benefit, (Danish Kroner)

	2020	2021	2022	2023 (only for two months)
Single providers on educational support or social assistance	600	615	616	616
Single providers with self- and home travel benefits	700	717	718	718
Parent who is married or co-habiting	550	563	564	564
Supplementary benefit	650	665	666	666

EUROMOD modelling: The benefit for single providers with self and home travel benefits is not simulated due to lack of information. Abolished in February 2023.

2.5.7 Maternity (Graviditets- og Barselsorlov, bma_s), paternity (Fædreorlov, bpa_s) and Parental leave (Forældreorlov, bma_s and bpa_s)

- **Definitions**

This is a benefit for the period of maternity leave, available to mothers, who have given birth, or the father of a child.

- **Eligibility conditions**

Leave benefits for parents in Denmark depends on whether they are wage earners, students or self-employed. The difference is mainly related to the size of the benefit and the way it is calculated.

The core conditions are:

- Giving birth or being a father
- Having job, being working at least 18.5 hours per week in own company, being in job besides education, being unemployed, including when newly educated.
- Daily physical contact with the child (implying that the child can't be in day-care while receiving leave benefits)
- Permanent residence in Denmark, although if living in Denmark and working in another EU-country it is the rule in this country deciding the right to benefits.

- **Income test**

None.

- **Benefit duration**

The maternity leave for the mother starts 4 weeks before expected birth and 14 weeks after birth, of which the first 2 weeks are compulsory. The paternity leave for the father is 2 weeks within the 14 weeks following birth.

In addition, mothers and fathers can share a parental leave of up to 32 weeks after the 14th week. This period of 32 weeks can be split up or postponed, but must be taken before the 9th birthday of the child. It can furthermore be extended proportionally if the parent returns to part-time work.

From 2nd of August 2022 there will be, beside the four weeks before expected time of birth maternity leave, and the two weeks after birth to both father and mothers, 24 weeks to each parent, of which 9 weeks can't be shared among the parents.

- **Benefit amount**

The benefit amount for wage-earner is calculated based on their hourly wage and the number of hours worked, with a maximum of 4,550 DKK/week, or 122.97 DKK/hour in 2023. Earnings after deducting the 8% contribution are considered.

For the self-employed the yearly income should have been at least 236,736 DKK in 2023. The same maximum benefit levels apply as for wage earners

Students receive 3,255 DKK per week before birth of the child if there are no other dependent children and 3,735 if they have other dependent children and after given birth to the child.

Table 2.12. Parental leave rates, (Danish Kroner)

	2020	2021	2022	2023
Maximum/week	4,405	4,460	4,465	4,550
Maximum/hour	119.05	120.54	120.68	122.97
Self-employed income	229,060	231,920	232,212	236,736
Students before birth	3,150	3,190	3,195	3,255
Students after birth	3,615	3,660	3,665	3,735

Source: www.borger.dk Note: In most collective agreements there is normal wage paid out for up to 26 weeks of parental leave.

Subject to taxes/SIC

The benefit is subject to income tax.

- *Take up*

Nearly all mothers take maternity leave, and fathers at least the 14 days. Is from 2023 expected to increase for most fathers to at least the 9 weeks that can't be shared among the parents.

EUROMOD modelling: We assume that duration of the maternity leave depends on the month of birth of a child.

The month of birth is assumed to be equal to the middle month of the quarter of birth reported in SILC. If child's month of birth is unavailable, the assumption is that the child is born on June 30 (6th month of the year). Where mothers are absent, fathers are assumed to receive the allowance for the same number of weeks as mothers, hence in those families we might be overestimating the total amount of allowance.

We assume that all women with children aged less than 1 year have taken 4 weeks of maternity leave before childbirth and 18 weeks of maternity leave after childbirth;

while all fathers with children aged less than 1 year have taken 2 weeks of paternity leave. The duration of shared parental leave (32 weeks) is split between the mother and the father in proportion to their average shares for all couples in the table above (90.5% for women and 9.5% for men). This adds up to the maximum of 47 weeks of total paid leave for coupled women (or 50 weeks of paid leave for single parents) and 5 weeks of total paid leave for coupled men that can be taken in a given year. We assume that all the leave is spent in the first year after the childbirth. The rules changed the 2nd August 2022, see description on the previous page. The total duration of leave pertaining to a mother is modelled in policy bma_s. The total duration for a father is modelled in bpa_s.

2.5.8 Green check (Grøn check, *bhtuc_s*)

- **Definitions**

The unit of analysis is the adult individual, but the number of dependent children is relevant for the simulation (tu_bhtuc_dk). A child is considered as dependant if younger than 18 years.

- **Eligibility conditions**

All persons liable to pay taxes aged 18 or older, albeit from 2023 only for pensioners

- **Income and wealth test**

The green check is phased out with 7.5 per cent against income above a threshold of 441,900 DKK in 2023, where the relevant income is the tax base for the top bracket tax (without taking into account the deduction of contributions to capital pension schemes).

Income included in the income test:

- + (Self-)Employment income and non-cash employee income
- + Unemployment related benefits
- + Social assistance related benefit
- + Education related allowances
- + Pension related benefits
- + Sickness and disability related benefits
- + Regular inter-household cash transfer
- + Positive net capital income
- Employee/self-employed/supplementary labour market contribution

- **Benefit amount**

The annual benefit amounts to 875 DKK for adults (only pensioners) in 2023. Benefits for children are given to the mother, however from 2022 will be split between the parents. There is an extra amount of 120 DKK per person for pensioners with children. Additionally there is an extra amount of 280 DKK per person for low income earners that is reduced by 7.5 % if the income exceeds 258,300 DKK in 2023.

Table 2.13 Green check compensations scheme per year

	2020	2021	2022	2023
Per person	525	525	263	0
In case of pensioners	875	875	875	875
Per child non-pensioners (max two)	120	120	120	0
Per child of pensioners	200	200	200	120
Extra amount (low-income earners)	280	280	280	280
pensioner				
Non-pensioners	280	280	140	0

Source: www.skm.dk

2.5.9 Housing Allowance

Housing allowance is the comprehensive term for the housing benefit for tenants and the housing grant for pensioners. Both forms of housing allowances are tax-free. The following only deals with the most important rules, as the housing allowance even according to official documentation is very complex.

A common term for the housing allowance is the housing cost, which is defined as the pure rent for the tenancy, excluding costs for heating, electricity etc. However, under some circumstances related both to characteristics of the dwelling and of the tenancy, the housing cost is augmented. The impossibility to fully simulate these circumstances obliged us to derive the housing cost reversing the rule for the calculation of the housing allowance. Then a regression analysis has been performed at the household level to impute a value of housing cost of households not receiving housing allowances. The derived variable is called xivhc.

2.5.10 Housing Benefit (Boligsikring, *bho01_s*)

- *Definitions*

The unit of analysis is the household (tu_bho_dk).

- *Eligibility conditions*

Tenants who are not pensioners (poa00=0 at the household level).

- *Income and wealth test*

The benefit is phased-out against the total incomes of all household members, and wealth, except income from children. Personal income base (il_PersIncome) is taken into account.

<u>Income of all household members (except income from children (since 2019)) included in the income test:</u>
--

- | |
|--|
| <ul style="list-style-type: none">+ (Self-)Employment income and non-cash employee income+ Unemployment related benefits+ Social assistance related benefit+ Education related allowances+ Pension related benefits+ Sickness und disability benefits- Contributions to private pension plans that can be deducted from personal income- Employee/self-employed labour market contribution+ Wealth |
|--|

The household income is augmented to take account of financial wealth (see table below).

Table 2.14. Income augmentation with wealth for calculation of housing benefit, (DKK).

%	2020	2021	2022	2023
0	<770,500	< 779,800	< 779,800	< 739,100
10	770,500-1,541,200	779,800-1,559,700	779,800-1,559,700	739,100-1,586,200
20	>1,541,200	> 1,559,700	> 1,559,700	> 1,586,200

Source: www.borger.dk

The benefit amounts to 60 per cent of the housing costs, which maximum can be 84,500 in 2023. From this, 18 per cent of the income that exceeds 150,600 DKK (in 2023) is subtracted. This income threshold is augmented by 39,700 DKK (in 2023) for each child beyond the first in the household, to a maximum of 4 children, see table 2.15 below. For households without children the housing benefit can at most constitute 15 per cent of the housing cost. Regardless of the income correction etc. the recipient of the housing benefit always has to pay a minimum of 25,400 DKK in rents him/herself. Households with children can at most receive a housing grant of 44592 DKK per year.

Table 2.15. Various limits etc. for housing benefit, per year. DKK

	2020	2021	2022	2023
Lower income deduction	146,400	148,000	148,100	150,600
Deduction increase per child (2 nd -4 th)	38,600	39,000	39,000	39,700
Own minimum payment	24,700	25,000	25,000	25,400
Maximum benefit, households	43,332	43,848	43,848	44,592
Maximum yearly rent	82,100	83,000	83,100	84,500

Source: www.bm.dk

2.5.11 Housing grant (Boligstøtte, *bho02_s*)

- **Definitions**

The unit of analysis is the household (tu_bho_dk).

- **Eligibility conditions**

Tenants who are pensioners (poa00>0 at the household level).

- **Income and wealth test**

The benefit is phased-out against total household income and wealth. The relevant incomes are the same as the one defined in the housing benefit section.

The household income for the calculation of the housing grant is augmented to take account of financial wealth (see table below).

Table 2.16. Income augmentation with wealth for calculation of housing grant,

%	2020	2021	2022	2023
0	<882,300	< 902,600	< 913,400	< 940,800
10	882,300-1,764,800	902,600 – 1,805,400	913,400 – 1,805,400	940,800 – 1,805,400
20	>1,764,800	> 1,805,400	> 1,827,000	> 1,881,800

Source: www.bm.dk

The housing grant corresponds as a rule to 75 per cent of the housing cost with a supplement of 7,500 DKK (in 2023). 22.5 per cent of the income exceeding 178,700 DKK (in 2023) is subtracted from this. This income threshold is augmented with 47,100 DKK (in 2023) from 2nd-4th child. The recipient of the housing benefit has to pay a minimum 11 per cent of the income or at least 18,900 DKK (in 2023). Households can at most receive a housing grant of 52,908 DKK per year. The maximum benefit is defined independent from the number of children in the household.

Table 2.17. Various limits etc. for housing grant, per year, (DKK).

	2020	2021	2022	2023
Supplement	7,100	7,200	7,300	7,500
Lower income deduction	167,600	171,500	173,500	178,700
Deduction increase per 2 nd -4 th	44,200	45,200	45,700	47,100
Own minimum payment	17,700	18,100	18,300	18,900
Maximum benefit	49,608	50,760	51,360	52,908

Source: <https://www.bm.dk/ydelsers-satser>, different years

2.5.12 Basic old age pension (Folkepension, poa00_s)

- **Definitions**

The unit of analysis is the individual (tu_individual_dk).

- **Eligibility conditions**

All persons from the age from 1st of July 2022 67 conditional on citizenship and time of residence in Denmark or legal residence as EU-citizens.

- **Income test**

Above a threshold of 359,200 DKK per year in her/his own wage earnings income, the benefit is withdrawn with 30 per cent, see table below.

Income included in the income test:

- + (Self-)Employment income and non-cash employee income
- Contributions to private pension plans that can be deducted from personal income
- Employee/self-employed labour market contribution

- **Benefit amount**

80328 DKK per year in 2023, see also table below.

Table 2.18. Income threshold and benefit amount for basic old-age pension, per year (DKK)

	2020	2021	2022	2023
Benefit amount	77,028	78,216	78,564	80,328
Income threshold	336,000	344,600	348,700	359,200

Source: www.borger.dk: Folkepension, www.bm.dk

EUROMOD modelling: The citizenship and length of residence rules are not implemented in EUROMOD.

2.5.13 Old-age pension supplement (Pensionstillæg, *poa01_s*)

- *Definitions*

The unit of analysis is the individual (tu_individual_dk).

- *Eligibility conditions*

All persons from the age of 67 from 1st of July 2022 conditional on citizenship and time of residence in Denmark or legal residence as EU-citizen.

- *Income test*

The relevant income concept for both own and spouse's income is earnings minus the labour market contribution. The rules differentiate between singles and couples and for the latter whether one or both partners are old-age pensioners. The rules do not distinguish between married and cohabitating couples. Wage income from a spouse/cohabiting partner below pension age do not influence benefits from the 1st of January 2023. Income from self-employment do not influence under the condition that the person is actively working in the company.

Income included in the income test:

- + (Self-)Employment income
- Employee/self-employed labour market contribution
- + Capital Income

For a single pensioner in 2023 the pension supplement is phased out against own (labour) income (after deduction of the labour market contribution, 8%) with 30.9 per cent, once the income surpasses a basic deduction of 122,004 DKK. See also table below for other years.

For couples the incomes of both partners are taken into account. The relevant income measure for own income is total income after labour market contribution.

For couples, income above a combined basic deduction of 182,900 DKK (2023) is set off against the pension supplement with 16 per cent for two pensioner-couples and with 32 percent for one-pensioner couples.

Table 2.19. Income dependence parameters for old-age pension supplement, per year.

	2020	2021	2022	2023
Singles				
Deduction, own income (DKK)	122,004	122,004	122,004	122,004
Phase-out rate (%)	30.9	30.9	30.9	30.9
Couples				
Limit for calc. of spouse-income	311,800	318,700	318,700	331,500
Deduction, income (DKK) except	149,100	179,700	179,700	182,900
Phase-out rate (%)				
<i>Couples, 1 old-age pensioner</i>	32	32	32	32
<i>Couples, 2 old-age pensioners</i>	16	16	16	16

Source: www.bm.dk, agreement for Finance bill, 2019, www.borger.dk

- **Benefit amount**

47,556 DKK for married/cohabitants and 92,940 DKK for singles (in 2023).

Table 2.20. Benefits for old-age pension supplement, per year (DKK).

	2020	2021	2022	2023
Married/cohabitants	42,912	44,484	45,600	47,556
Singles	85,464	88,020	89,664	92,940

Source: www.borger.dk.

2.5.14 Supplementary pension (ældrecheck/ supplerende pensionsydelse, *poa02_s*)

- **Definitions**

The unit of analysis is the individual (tu_individual_dk).

- **Eligibility conditions**

All reached the age limit for receiving old-age pensions.

- **Income test**

The benefit is reserved for pensioners with liquid financial assets of less than 95,000 DKK (see table below) and is phased-out against labour income above a basic deduction (see personal supplement rate). In 2022 and 2023 an extra amount of 5000 D. Kr. has been paid out.

Income included in the income test:

+ Wealth

- **Benefit amount**

19,200 DKK per year (see table below).

Table 2.21. Benefit and asset test for supplementary pension, per year, (DKK).

	2020	2021	2022	2023
Benefit	18,000	18,400	18,600	19,200
Asset threshold	89,800	91,900	93,000	95,500
Extra			5,000	5,000

Source: www.borger.dk.

2.5.15 Personal Supplement rate (Tillægsprocent, *poa02_s*)

The supplementary pension is also phased-out against incomes other than old-age incomes, such as labour income, using the personal supplement rate, which is calculated for all old-age pensioners based on their own and a possible spouse's income beyond the old-age pension.

Income included in the income test:

- + (Self-)Employment income above the threshold and non-cash employee income
- + Pension from the labour market contribution scheme
- + Early retirement, private, sickness and disability pension
- + Net capital income

As a default the supplement rate is 100 per cent (e.g. 100% of the benefit is paid), which is reduced for incomes above 35,000 DKK (in 2023 for singles and above 69,200 DKK for married cohabitant couples by 1 percentage point for every 563 DKK (1,137 DKK for couples) of other income. See also table below.

Table 2.22. Benefit test for personal supplement rate, per year (DKK).

	2020	2021	2022	2023
Basic deduction threshold				
Singles	35,800	35,600	35,000	35,000
Couples	71,000	70,600	69,300	69,200
Phase-out				
Singles	529	541	547	563
Couples	1,067	1,091	1,091	1,137

Source: www.bm.dk, www.borger.dk

2.5.16 Wage Compensation Schemes (yemcomp_dk, ysecomp_dk)

In 2020 a number of schemes was introduced in order to compensate the loss of income due to the period of the lock-down in Denmark. They were for a limited time extended in 2021 and early 2022 until the 15th February 2022. In line with traditions on the Danish labour market, there was a tri-partite agreement. Thus for 2023 no longer relevant.

- *Eligibility conditions*

The agreement applies to employees of all private companies who are affected exceptionally hard financially by COVID-19 and therefore have to notify redundancies for at least 30 per cent of or for more than 50 employees. For self-employed and free-lance workers there has also been decided a government compensation strategy.

- *Benefit amount*

The company receives a state salary compensation of 75 per cent of the salaries of the employees concerned, but with a maximum of DKK 23,000 per employee per month if they do not implement layoffs. For hourly wage earners, state wage compensation amounts to 90 per cent, but with a maximum of DKK 26,000 per month. From 11th of March 2021 the maximum has been increased to DKK 30,000, which is also the case for 2022. In other words, companies keeping labour employed instead of making them redundant get an economic compensation since they will only have to pay the remaining part of the wage costs, i.e. the wage earner will keep the existing wage. The employed will have to give up 5 holidays/overtime work, and if there are no days left then either from the next year's holidays or 5 days without wage-income. This agreement and the state support will be in force, for the time being, from the 9th of March to the 8th of August, and for a few within tourism further. It has later from 1st of May, 2020 been extended to apprentices as well. In December 2020 it has been extended for those branches where there is lock-down.

For self-employed, state compensation is 75 per cent of the loss of revenue, but with a maximum of DKK 23,000 per month corresponding to the rates in the wage compensation scheme for salaried employees agreed with the labour market partners in the tri-partite agreement. The compensation can reach to up to DKK 46,000 per person per month if the self-employed has a spouse as employee.³ The compensation has been increased to 30,000 DKK and also prolonged. For self-employed where there has been declared a close-down during these times to 100 % of the loss of revenue. Free-lancers should have had an income as free-lancer at a minimum of 180,000 DKK in 2019, and, so far in 2020 have not had an income above 0.8 mill. DKK.

EUROMOD modelling:

- 1) Wage compensation schemes for hourly wage earners and free lancers are not implemented in EUROMOD.
- 2) Both for employees and self-employed, we consider the maximum compensation amount to be DKK 30,000 per month.

³ The Ministry of Finance: <https://www.fm.dk/nyheder/pressemeddelelser/2020/03/regeringen-og-partier-enige-om-hjaelpapakke>, accessed the 26th of March.

2.6 Social insurance contributions

Most Danish transfers are financed through either the tax system, or through fully privately organized schemes. Below the three partly public social security schemes are described.

2.6.1 Supplementary labour market pension (ATP-bidrag, *tscpier_s*, *tscpiee_s*)

All employees and employers pay contributions to a supplementary labour market pension scheme (ATP), with fixed contributions that vary by type of employment contract – monthly, fortnightly, weekly or hourly – and number of hours worked – full-time, part-time or less, see table below. The income level is not taken into account. Employers pay two-thirds of the contribution (*tscpier_s*), while employees pay one-third (*tscpiee_s*). Self-employed can opt to pay the supplementary labour market pension as well. There are also contributions with a monthly payment of 284 DKK for self-employed.

Table 2.23. Supplementary labour market pension contributions,

	2020-2023
Monthly contract	
Full time (117h-)	284
Part time (78-116h)	189.35
Part time (39-77h)	94.65
< 39 hours	0
Fortnightly contract	
Full time (54h-)	149.40
Part time (36-53h)	99.60
Part time (18-36h)	49.80
< 18hours	0
Weekly contract	
Full time (27h-)	74.4
Part time (18-26h)	49.8
Part time (9-17h)	24.90
< 9 hours	0
Hourly paid	
Per hour	2.01

Source: <https://www.borger.dk/pension-og-efterloen/ATP-Livslang-pension-oversigt/ATP-Livslang-Pension>

EUROMOD modelling: Only monthly contracts are simulated in Euromod, as the majority of contracts in Denmark are monthly. We only simulate contribution for employed because information on voluntary contribution of self-employed is not available.

2.6.2 Contribution to unemployment insurance scheme and early retirement scheme (A-kassebidrag and Efterlønsbidrag, *tyrui_s*)

Unemployment insurance is voluntary and organised through typically trade-specific insurance schemes with monthly contributions, see table below. Early retirement is conditional upon long-term membership of an unemployment insurance scheme, and contribution to early retirement is therefore modelled alongside contributions to unemployment insurance schemes with a total contribution (*tyrui_s*). It is possible only to be member of unemployment insurance and thus not an early retirement benefit scheme. This is increasingly the case.

Table 2.24. Voluntary monthly contribution to unemployment insurance and early retirement scheme, for full time insured. (DKK)

	2020	2021	2022	2023
Contribution to unemployment insurance	352	357	357	364
Contribution to early retirement scheme	514	520	521	531
Sum	866	877	878	895

Source: www.bm.dk

- *Random assignment*

Participation in unemployment insurance scheme is imputed in the input dataset using national register data.

EUROMOD modelling: The wage compensation for self-employed is not taken into account when calculating the contribution to the unemployment insurance scheme. If wage compensation policies are switched on, a reduction of income (also in case this was replaced by a wage compensation) can lead to a lower number of people paying this contribution.

2.7 Direct Taxes

The Danish tax system contains a gross flat tax levied on all labour income, municipal and county taxes levied on the taxable income base and a progressive tax rate at the national level levied on the personal income base. The tax system is mainly based on individual personal taxation, although there are a few possibilities for married couples to transfer redundant deductions in the different tax bases.

Two main income concepts used in this context are the Personal Income and Taxable Income, which are calculated as shown in the table below.

Table 2.25 Calculation of the Personal Income and Taxable Income tax bases

<p>(1) Gross labour income</p> <ul style="list-style-type: none"> - Contributions to occupational based agreed obligatory supplementary pension scheme (<i>Arbejdsmarkedspension</i>) + All Transfers <ul style="list-style-type: none"> Education grant (<i>Statens Uddannelsesstøtte</i>) Unemployment benefits (<i>A-Dagpenge</i>), Early retirement pensions (<i>Efterløn og Engangsydelse</i>), Social assistance (<i>Kontanthjælp og integrationsydelse</i>), Severance pay (<i>Fratrædelsesgodtgørelse</i>) Sickness benefits (<i>Sygedagpenge mv.</i>) Benefits to pensioners, including old-age pension (<i>Folkepension</i>); pensions from the labour market contribution scheme (<i>ATP-pensioner</i>); civil servant pensions, incl. pensions to wife and children (<i>Tjenestemandspension</i>); pension payments from privately held pension plans in pension funds, banks or insurance companies with regular payments; capital pensions; pension payments from previous employers; foreign pensions Survivors benefits (<i>Efterladtepension</i>) Disability pension (<i>Førtidspensione mv.</i>) + Other incomes + Gifts + Alimony received + Life insurance premiums, fringe benefits - Labour market contribution (txc_s) - Supplementary labour market contribution (tscpiee_s) - Contributions to private pension plans with a ceiling of 117,000 DKK in 2023 (xpp00_s) - Additional deduction of 12% (if more than 15 years to retirement) or 32% (if less than 15 years to retirement) of pension contributions (public and private) up to 77,900 DKK in 2023 (tintaox_s) <hr/> <p>(2) Personal income (il_PersIncome)</p> <ul style="list-style-type: none"> + Net capital income - Work-related deductions <ul style="list-style-type: none"> Earned income tax credit Transport allowance Payments to unemployment funds, unions & early retirement scheme Alimony/payments to divorcee's children and ex-partner Special occupational deductions (fishermen, etc.) Deposit on (company) start-up account Gift deductions Other employee expenses (over 6,700 DKK in 2023) <hr/> <p>(3) Taxable income (il_tin)</p>

Another important feature of the tax system is the General Personal Allowance (GenPersAllowance), used for the simulation of several of the instruments described below.

Table 2.26 General Personal Allowance, (DKK).

	2020	2021	2022	2023
For persons below 18 years	36,100	36,900	37,300	38,400
For all other tax payers	46,500	46,700	46,600	48,000

Source: www.skm.dk

EUROMOD modelling:

- 1) It has not been possible to identify some of the components of these income concepts. Please have a look at the component of the income lists for more information.
- 2) The Danish tax system uses a concept of capital income, which incorporates interest payments on loans, mortgages etc. No fully comparable variable is found in the SILC-data, where the closest variable – investment income *y_{iy}* – also includes a long range of positive incomes.
- 3) For commuting distances (forth and back) above 24 km, tax payers can deduct standardized expenses (per km and work day). This is not implemented.
- 4) Due to the scarce practical relevance, the distinction between younger and older than 18 years old is not implemented in the current version of EUROMOD.

2.7.1 Earned Income Tax Credit (*Beskæftigelsesfradrag, tintc_dk*):

- *Tax unit*

Tax unit is the individual.

- *Tax Allowances*

Contribution to private pension schemes and contribution to supplementary labour market pension schemes needs to be deducted from the tax base.

- *Tax Base*

The tax base is the gross labour income after the deduction of the tax allowances, albeit from 2018 changed so that it is gross-labour income.

- *Tax Schedule*

In 2022 the earned income tax credit rate is 10.6 %. The maximum value of tax credit is 45,600 DKK per year. There is an extra earned income tax-credit for single providers with a percentage of 6,25 in 2022 and a maximum value of 24,400 DKK. The definition of single provider is the same as the one used for the simulation of the child benefit supplement. Rate and maximum amount for supplementary earned income tax credit is reported in the table below. Finally, there is an additional credit for incomes above 208,700 DKK with a maximum credit of 2,700 DKK.

Table 2.27. Earned income tax-credit, per year, (*Beskæftigelsesfradrag*)

		2020	2021	2022	2023
General credit	Rate (%)	10.5	10.6	10.65	10.65
	Maximum value (DKK)	39,400	40,600	43,500	45,600
Single provider	Sup. Rate (%)	6.25	6.25	6.25	6.25
	Sup. Max (%)	22,900	23,400	23,700	24,400
Additional rate	Income above (DKK)	195,800	200,300	202,700	208,700
	Rate (%)	4.5	4.5	4.5	4.5
	Maximum value (DKK)	2,600	2,600	2,700	2,700

Source : www.borger.dk and Beskæftigelses- og jobfradrag - Skat.dk

2.7.2 Labour Market Contributions (*Arbejdsmarkedsbidrag, txc_dk*)

- **Tax unit**

The tax unit is the individual.

- **Tax Base**

The tax base is the gross labour market income from employment and self-employment.

- **Tax Schedule**

The labour market contribution (LMC) is a gross tax of 8 per cent levied upon gross labour income.

2.7.3 Municipality Tax (*Kommuneskat, tmu_dk*):

- **Tax unit**

The tax unit is the individual.

- **Tax Base**

The tax base is the taxable income base after the deduction of the general personal allowance. Unused allowance can be transferred between spouses.

- **Tax Schedule**

Tax rates vary across municipalities, see table below.

Table 2.28. Distribution of municipality tax rates (%), (*kommuneskat*)

	2020	2021	2022	2023
Average	25.0	25.0	25.0	25.0

Source: <http://www.skm.dk>

EUROMOD modelling: Since it is not possible to distinguish among municipalities in the EU-SILC, the average tax rate is applied.

2.7.4 Church Tax (Kirkeskat, *tr_dk*):

- *Tax unit*

The tax unit is the individual.

- *Tax Base*

The tax base is the taxable income base after the deduction of the general personal allowance. Unused allowance can be transferred between spouses.

- *Tax Schedule*

Tax rates vary across municipalities, see table below.

Table 2.29. Municipal average church tax rates, (%)

	2020	2021	2022	2023
Average rate	0.87	0.87	0.87	0.87

Source: www.dst.dk/PSKAT

EUROMOD modelling: The church tax is a voluntary contribution. In EUROMOD entitlement is randomly assigned to 80% of the population. Since it is not possible to distinguish among municipalities in the EU-SILC, the average tax rate is applied.

2.7.5 Bottom Bracket Income Tax (Bundskat, *tinbt_dk*):

- *Tax unit*

The tax unit is the individual.

- *Tax Base*

The tax base is the personal income base and net capital income, with the general personal allowance subtracted. Spouses can transfer negative net capital income and any unused personal allowance between them for the calculation of the bottom bracket tax.

- *Tax Schedule*

The tax rate is 12.09 per cent in 2023.

Table 2.30. Bottom bracket tax rates (%), (bundskat).

	2020	2021	2022	2023
Bottom	12.11	12.09	12.09	12.09

Source: Danish Ministry of Taxation

2.7.6 Top Bracket Tax (Topskat, *tinto_dk*):

- *Tax unit*

The tax unit is the individual.

- *Tax Base*

The top-bracket tax is the highest-level of the progressive state taxes and is levied upon the sum of the personal income tax base, positive net capital income and contribution to capital pension schemes, with the top-bracket tax allowance subtracted.

The positive net capital income for spouses for the calculation of the top-bracket tax is computed jointly and taxed for the spouse with the highest basis of calculation, i.e. the spouse with the highest sum of the personal income base and the contributions to private capital pensions.

Income included in the income test:

- + (Self-)Employment income and non-cash employee income
- + Unemployment related benefits
- + Social assistance related benefit
- + Education related allowances
- + Pension related benefits
- + Sickness and disability related benefits
- + Regular inter-household cash transfer
- + Contributions to private pension plans
- + Positive net capital income
- Employee/self-employed/supplementary labour market contribution

There is a basic yearly allowance of 48,800 in 2023 for the inclusion of positive net capital income in the tax base for the top-bracket tax. The allowance can be transferred between spouses. This means that for two spouses only positive capital incomes above 97,600 DKK (in 2023) are taxed with the top-bracket tax rate.

- *Tax Schedule*

Table 2.31. Top bracket tax rates and allowances,

	2020	2021	2022	2023
Top bracket tax rate (%)	15.0	15.0	15.0	15.0
Top bracket tax allowance	531,000	544,800	552,500	568,900
Allowance in positive net	45,800	46,800	47,400	48,800

Source: Danish Ministry of Taxation. Allowance in positive net income is for unmarried individuals (double for married couple).

The sum of municipal, health, bottom and top tax cannot exceed 52.07 % tax ceiling in 2023. If the tax ceiling is reached, the top bracket income tax is reduced accordingly.

Table 2.32. Tax ceiling,

	2020	2021	2022	2023
Tax ceiling	52.06	52.06	52.07	52.07

2.7.7 Property tax (tpr_s)

- *Tax unit*

The tax unit is the household.

- *Tax Base*

The tax base is the property value.

- *Tax Schedule*

The tax rate is 0,92% on property value of up to 3,040,000 DKK and a tax rate of 3 percent above that threshold. The threshold has been frozen nominally since 2002. Pensioners can have the payment reduced with 0.37 % of the property value with a maximum of 6.000 D.Kr. This is reduced with 5 % for single person with an income above 217.700 in 2023(206.200 in 2022) and for a couple 327.200 in 2023 (317.800 in 2022)

EUROMOD modelling: In order to simulate this instrument, the tax rule has been reversed and the property value derived. This has then been used in the simulation.

3. DATA

3.1 General description

From 2023 onwards, the database prepared by Eurostat - EUROMOD SILC database (EMSD), has been enriched with several national SILC variables provided by the National Statistical Office. In addition to these, the archive also includes:

- all UDB (User Database) variables;
- 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.

Table 3.1 EUROMOD database description

EUROMOD database	DK_2021_c1
Original name	DK_EMSD2_2021
Provider	Statistics Denmark
Year of collection	2021
Period of collection	March-June (interview part)
Income reference period	2020 (calendar year)
Sampling	Random probability sampling
Unit of assessment	Households
Coverage	Private households
Sample size	7,836 households (15,616 individuals)

The data sample is a representative sample of persons aged 16 years or older. From this sample the households are defined as persons who share expenses for daily living or share meals regularly. The data contains information on both the households and its members.

The data are compiled by Statistics Denmark. While information on the composition of the households, their living conditions, their view on their economic stance, their labour market status and their health status is collected through an interview survey (conducted between March and June), further information on income, education and housing are added from official registry data.

While incomes in the EU-SILC are recorded in EUR and yearly, the derived EUROMOD data are stated in Danish kroner (DKK) in (mostly) monthly terms.

3.2 Sample quality and weights

As EU-SILC is based on a sample of persons and household there are some statistical uncertainty related to the data. This is partly due to the presence of statistical uncertainty and partly due to the risk of biases. A calibration of the survey is carried out in order to limit any bias and make sure that the sample reflects the population on factors such as demographics and incomes. For the published variables on making ends meet and the burden of housing costs, the effect and risk of bias is assumed to be negligible due to the strong correlation with incomes.

3.2.1 Non-response

There is a non-response rate of around 60 per cent from the sampling of private households to the final sample of about 7,800 households in the Danish part of the DK_EMUSD2_2020 data. Statistics Denmark has not documented the reasons for non-response explicitly. It is possible for citizen to register for so-called ‘researcher protection’ with the registration office. Nevertheless, the sample should be a good reflection of the population in the demographics and incomes dimensions since a calibration of the survey is carried out.

The non-response is counteracted through the modification of weights, see first bullet in the next section.

3.2.2 Weights

The dataset includes four types of cross-sectional survey weights, which all have been modified to reproduce population characteristics from the sample:

- The household cross-sectional weights (variable **DB090** in EU-SILC) form the background for the EUROMOD weight variable **dwt**. The weights have been corrected for household non-response in order to calibrate the sample to the population, taking account of the population distribution in the following categories:
 - + Sex
 - + Age (5 classes 0-15, 16-24, 25-49, 50-64, 65+)
 - + Family type
 - + Income mass and income groups (12 intervals; 1, 5, 10, ... 90, 95, 99th percentile).
 - + Risk of poverty
 - + Equivalised disposable income
 - + The size of the household
 - + Education level of the person with the highest professional status in the household
 - + Socio-economic status of main income holder in the household.
- The personal cross-sectional weights for all household members of all ages (variable **RB050**) is used to draw inference on individual basic demographic variables for the population of all individuals living in private households. Because all the current members of any selected household (which has responded to the interview) are surveyed, the personal weights RB050 are equal to the household weights DB090.
- The personal cross-sectional weights (variable **PB040**) for all household members who were interviewed individually (aged 16 and over) is used to draw inference on the variables included in the personal questionnaire. These weights had to be corrected for individual non-response.
- The personal cross-sectional weights for the selected respondents (variable **PB060**) are equal to PB040 for the selected respondents.

Table 3.2 Descriptive Statistics of weights

	DB090	RB050	PB040	PB060
Number	15616	15616	13451	7836
Mean	370.76	370.76	356.06	611.19
Median	338.06	338.06	320.05	504.07
Minimum	5.73	5.73	5.73	14.27
Maximum	1482.67	1482.67	1482.67	5578.38
Max/Min	258.79	258.79	258.79	390.99
Decile 1	170.98	170.98	166.06	280.63

Decile 9	617.63	617.63	595.95	1090.34
Decile 9 /				
Decile 1	3.61	3.61	3.59	3.89

Notes: The weight **dwt** in the EUROMOD data is equal to DB090.

3.3 Data adjustment

To accommodate the modelling of tax and benefit rules using the EU-SILC data, a few variables had to be adjusted.

3.3.1 Labour market activities, months per year

EU-SILC UDB does not provide information on the number of months that different incomes are paid during the year. By default, it is imputed based on the main economic status during the year. This affects the following variables (variable unit is months per year):

yemmy	Employment
kfbmy	Fringe Benefits
ysemy	Self Employment
bunmy	Unemployment
pdimy	Pension, disability
poamy	Pension, old age
psumy	Pension, survivors.

3.3.2 Income Tax and SIC - *tis*

7,780 observations were missing and all were set to 0 (zero).

3.4 Imputations and assumptions

3.4.1 Time period

The used EU-SILC data for 2021 is based on survey data from interviews conducted March-June 2021 combined with registry data from the calendar year 2020 on incomes, dwellings, and educational information.

The input registry data on incomes are aggregated annual numbers, but are for the use in EUROMOD converted into monthly figures, thus implicitly assuming a regular flow of income throughout the year. However, a number of variables in the data that record the number of months with different income types, such as yemmy (“Months with employment income”) or bunmy (“Months with unemployment benefit income”), do not exist in EU-SILC and are therefore imputed see section 3.3.1.

3.4.2 Gross incomes

The income variables in the Danish SILC-data only contain gross incomes. Net-to-gross conversions have therefore not been necessary.

3.4.3 Disaggregation of harmonised variables

Since the year 2021, many variables provided by the national statistical office have been used. Specifically, these are the following variables: pdi, poa00, poa01, poa02, poa03, poaot, pyr, ypp, bfa, bfachnm, bfach00, bfached, bfachot, bho01, bho02, bunct, bhtuc, bsa, bsaot, bunot, bcbplcs, aiv.

Variables are created by the national statistical office using both silc and administrative data

Housing allowances are split by the age of the recipient into a housing benefit (bho01) for recipient below the age of 65 and a housing grant (bho02) for pensioners. The receipt of housing allowances is based on the concept of housing costs, including rent, but not heating etc. Under some circumstances related both to characteristics of the dwelling and of the tenancy that cannot be simulated, the housing cost is augmented. To establish this base for the computation of the housing allowances, the housing costs is imputed hence by reversing the rules for the housing allowances, creating the housing cost base for housing benefits (xhc01) and for housing grants (xhc02). The variable xivhc is then imputed for all the households in the sample using predictions of xhc01 on and xhc02 on the basis of household characteristics and SILC reported housing cost.

The previous earnings (yempv) on which the level of unemployment benefit is based is calculated by reversing the rules for the unemployment benefit.

3.5 Break in series

The quality of the Danish EUROMOD input data was improved due to the availability of disaggregated benefits which simplified the disaggregation of harmonised variables and improved the simulation of unemployment benefit. This however reduces the comparability of results using the 2016 dataset with results using earlier datasets.

Maternity and paternity leave benefits are included in the employment income variable for private sector employees. Maternity and paternity leave benefits for public sector employees and recipients of transfers are now included in hy052g (while earlier in py122).

Some income types are reclassified from 2020 SILC, which is not affecting disposable income or the main Eurostat indicators, while the reclassification will affect the income levels of some income types.

3.6 Updating factors

To account for any time lag 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.

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

Table 4.1 Components of disposable income

	EUROMOD	EU-SILC
	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
Unemployment benefits	+	+
Old-age benefits	+	+
Survivor' benefits	+	+
Sickness benefits	+	+
Disability benefits	+	+
Education-related allowances	+	+
Income from rental of a property or land	+	+
Family/children related allowances	+	+
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 ¹	-	-
Regular inter-household cash transfer paid	-	-
Tax on income and social contributions	-	-
Repayments/receipts for tax adjustment	+	+

Notes:1) Not applicable for Denmark; Contents of HY020 are based on EUROSTAT (2010).

4.1.2 Validation of incomes inputted into the simulation

Tables A3.1 and A3.2 compare with external statistics the number of people and the aggregated amount of a number of market income components. Employment income is well captured by SILC data both in terms of number of recipients and aggregated amount. The number of people receiving income from self-employment is over-reported in SILC when compared with external statistics, although the amount matches the external statistics much better. A reason might be that people in principle can have several types of income (wages, benefits, self-employed income) and thus the numbers counting as self-employed will vary more than the

precise income as this comes from income in the tax registers. Discrepancies arise also with respect to the investment income, which is quite under-reported in SILC when compared to external statistics. Both under-reporting of investment income as well as a discrepancy in the concept of investment income used in SILC and in the external statistics are likely to be the main causes of lacking matching. It should be also noted, that Private pensions are overestimated. As mentioned in section 3.4.3 information on private pensions has been provided by the Danish Statistical Office.

Recipients and amounts of education-related allowances are over-represented in EU-SILC (see Table A3.5 and A3.6 in Annex 3). EUROMOD counts as a recipient all the individuals receiving this benefit at least once during the year, while external statistics are based on full time equivalents. Disability pensions are overestimated but it has been provided directly by the Danish Statistical Office (see Section 3.4.3).

4.1.3 Validation of outputted (simulated) incomes

For the benefits, taxes and social contributions that are simulated by EUROMOD, cf. Table A3.3, A3.4, A3.5 and A3.6 in Annex 3, there are generally reasonable fits. The most important exceptions are listed below.

A change in the eligibility rules for housing benefit and grant may accommodate for the divergence between the external statistics and the EUROMOD simulations. The housing grant applies to old-age pensioner-tenants, while the housing benefit applies to tenants under 65 years of age. However, in the external statistics the housing grant also encompasses disability pensioners (i.e. non-pensioners) who are entitled to it. This means that the external numbers for the housing grant are inflated by these 'old' disability pensioners relative to the simulations based on the new policy rules. Likewise, the external data for the housing benefit are 'deflated' by these 'old-rule' disability pensioners, compared to the simulations. The over-simulation of number of people receiving unemployment benefit compared to external statistics is probably based on the way of counting people. This is reflected also in the aggregated simulated amount.

The overestimation of social assistance is likely to be driven both by limitations in our simulation, which cannot control for the requirement of experiencing particularly stressful (social) events, as well as by issues such as benefit non take up.

The child benefit amount (including supplements) is overestimated in EUROMOD due to the challenge of distinguishing, in external statistics, between 'bfach00_s' and 'bfachnm_s' both of which represent child family grants addressed to different types of households

4.2 Income distribution

All income distribution results presented here are computed for individuals according to their household disposable income (HDI) equivalised by the “modified OECD” equivalence scale. HDI is calculated as the sum of incomes from all 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 less than 14 = 0.3.

4.2.1 Income inequality

A comparison of distributional indicators derived from EUROMOD-generated household disposable income with external statistics shows that over all the EUROMOD estimates fit well with the EUROSTAT income distribution measures, this is especially true for the mean and median income as well as for deciles. However, the over-simulation of the social assistance benefit leads to a slightly higher share of incomes for the bottom income group and thus, to a lower Gini and S80/20 indicator than in the Eurostat statistics.

4.2.2 Poverty rates

A computation of poverty rates by gender and age using EUROMOD shows that EUROMOD estimates the incidence of poverty in Denmark according to EUROSTAT database rather well with a few exceptions (table A3.8). There are some discrepancies using the 60 % of median HDI: at risk of poverty rate lower than expected below the age of 15 and higher for 50-64 years of age. The discrepancy can be due to the relatively small number of people falling in these categories in the sample.

4.3 Summary of “health warnings”

This final section summarises the main findings in terms of particular aspects of the Danish part of EUROMOD or its database that should be borne in mind when planning appropriate uses of the model and in interpreting results.

Take-up rates in Denmark are generally high so that the level of take-up should not have any specific impact on calculations. There is some tax-evasion in Denmark, but this is at a low level compared to other countries, and, should therefore only marginally impact the overall level of calculation, however with a possible impact on distribution.

The land value tax is recorded as part of the total housing costs and not simulated as there is no information on the land value or the tax payment. The land value tax is recorded as a housing cost to make it comparable to tenants, who (indirectly) pay the land value tax as a part of their rent.

The only transferability and influence of income of a spouse is with regard to dividend income, and this is not taken into account.

In contrast to other EU-SILC countries, Denmark includes a high number of respondents with negative investment income. In Denmark, windfall gains and losses on stocks are taxed in the same way as dividend when stocks are traded, these are included in the investment income variable. Losses are furthermore deductible from capital gains in the following years and are very well recorded in the data. Negative investment incomes are recoded to 0 in the `neg_dk` policy and only positive values are used in the model. Two exceptions to this rule are the calculation of the bottom and medium tax bracket where the transfer negative net capital income can be used to reduce the tax burden.

Maternity and parental leave benefits are simulated but switched off for policy years 2015-2022.

5. REFERENCES

EUROSTAT (2010): *EU-SILC 065 (2008-operation) - Description of Target Variables: Cross-sectional and Longitudinal*. Version January 2010.

StatBank (2015). *www.dst.dk*. StatistikBanken is the Danish National Statistical Office’s (Statistics Denmark) online statistical service.

- *Sources for tax-benefit descriptions/rules*

The description and the derived modelling of the Danish tax and benefit system build on various sources, mostly only in the Danish language:

- + The Ministry of Taxation, www.skm.dk/foreign/
- + The central legal information: <https://www.retsinformation.dk/>
- + The Ministry for Employment: <http://bm.dk/>
- + The citizens’ entry point for information on public benefits etc., www.borger.dk

ANNEX 1 - UPRATING FACTORS

Table A1.1 Uprating factor values, 2013-2023

		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Harmonised Index of Consumer Prices	\$HICP	99,43	99,78	100,0	100,0	101,1	101,8	102,5	102,9	104,9	113,8	
Consumer Price Index (2015=100)	\$f_cpi	99	99,6	100	100,3	101,4	102,2	103	103,4	105,4	113,5	116
Indices of average earnings in Corporations and Organizations (2005=100)	\$f_earnings	124,6	126,4	128,3	130,5	132,9	135,8	138,6	141	144,5	148,2	150,8
Lagged indices of average earnings in Corporations and Organizations (2005=100)	\$f_earningsLag	123,2	124,6	126,4	128,3	130,5	132,9	135,8	138,6	141	144,5	148,2
Share index (at the end of period)	\$f_share	517	608	786	723	836	752	946	1 216	1 481	1 392	1507
No uprating	\$f_none	1	1	1	1	1	1	1	1	1	1	1

ANNEX 2 - POLICY EFFECTS IN 2022-23

Table 1 and Figure 1 show the effect of 2023 policies on mean equivalised household disposable income by income component and income decile group. The effect is estimated as a difference between simulated household net income under the 2023 tax-benefit policies (deflating monetary parameters by Eurostat’s Harmonized Index of Consumer Prices, HICP⁴) and net incomes simulated under 2023 policies, as a percentage of mean equivalised household disposable income in 2022.

The total effect of (deflated) 2023 policies on mean income is -0.55 which is lower than last year relatively - 1.41 %. No major reforms have taken place from 2022 to 2023, see Section 2.2., with the exception of that basic state pension for a person is not influenced by wage income from a spouse.

There has this year been an increase in the income dependence parameters for old-age pension supplement (see Table 2.19) compared to that this was not the case last year, and also in the calculation of the pension-supplement rate.

The gradually continuing small gradual implementation of changes in how to calculate direct taxation has continued mostly to be beneficial for the upper part of the income distribution. On the contrary, lower deciles have lost mostly by the decrease in public pension, as indexation of pension was lower than the unexpected increase in inflation in HICP. This due to that compensation of increase in prices is in the system lagged by two years. The larger effect at the bottom of the income distribution thereby highly reflects where most of the pensioners are located. On the side of benefit, there is a decrease in means-tested benefit (-0.61%) and also a slightly decrease 0.30 in total for non-mean tested benefit. This is mainly in the first deciles.

The core reason for the change can therefore be that the change in consumer price inflation rate is the one single element best explaining the changes in the distribution during the year, as witnessed by comparing Table 1 and 2. There has, albeit not reflected in the data, been in 2023 a one-time payment to the pensioners with the lowest income. This would presumably change the overall picture of the size of changes in inequality given that the decline has been larger at the bottom of the distribution, although not very much given the limited size of this extra once of payment.

The increase in income for the lowest income groups without taken into account changes in inflation as witnessed in Table 2 can also be explained by the way benefits are indexed in the Danish welfare state.

Table 1: Policy effects including impact of inflation in Denmark in 2022-2023

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	-0,41	-0,61	-0,30	0,02	0,00	0,00	0,42	-0,88
2	0,00	-1,33	-0,42	-0,13	0,02	0,00	0,00	0,64	-1,22
3	0,00	-1,26	-0,29	-0,09	0,03	0,00	0,00	0,45	-1,16
4	0,00	-1,34	-0,26	-0,08	0,04	0,00	0,00	0,50	-1,14

⁴ Annual average retrieved from Eurostat website, AMECO forecast for 2023 data.

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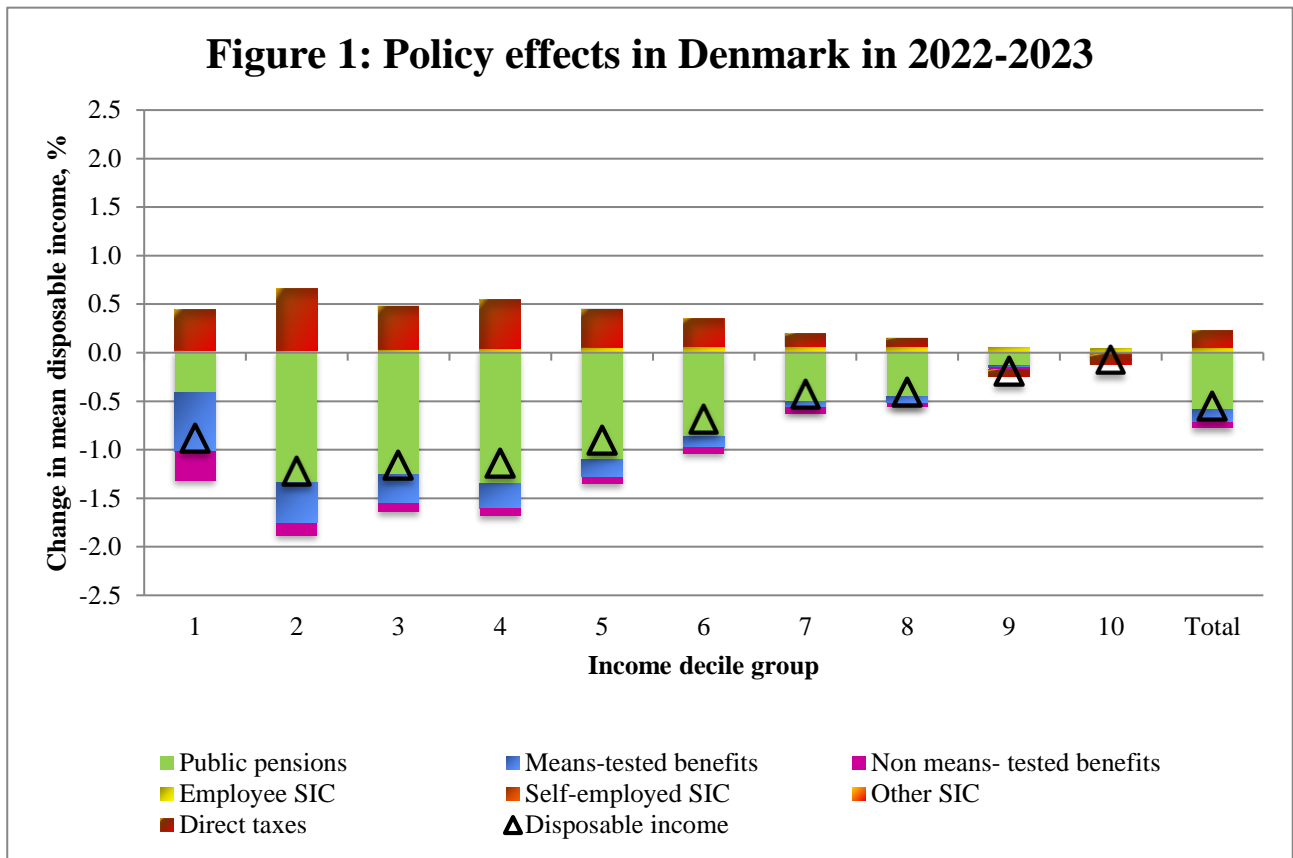
5	0,00	-1,10	-0,18	-0,07	0,06	0,00	0,00	0,39	-0,90
6	0,00	-0,86	-0,11	-0,06	0,06	0,00	0,00	0,29	-0,68
7	0,00	-0,50	-0,06	-0,06	0,06	0,00	0,00	0,13	-0,43
8	0,00	-0,45	-0,07	-0,04	0,06	0,00	0,00	0,09	-0,41
9	0,00	-0,13	-0,02	-0,03	0,06	0,00	0,00	-0,07	-0,19
10	0,00	-0,01	0,00	-0,01	0,04	0,00	0,00	-0,09	-0,08
Total	0,00	-0,59	-0,13	-0,06	0,05	0,00	0,00	0,18	-0,55

Notes: shown as a percentage change in mean equivalised household disposable income by income component and income decile group. Income decile groups are based on equivalised household disposable income in 2023, using the modified OECD equivalence scale. Each policy system has been applied to the same input data, deflating monetary parameters of 2023 policies by Eurostat's Harmonized Index of Consumer Prices (HICP).

Table 2 Policy effect in 2022-2023 without the impact of inflation

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	0,91	0,67	0,72	-0,01	0,00	0,00	-0,23	2,06
2	0,00	0,94	0,58	0,30	-0,01	0,00	0,00	-0,17	1,65
3	0,00	0,72	0,26	0,22	-0,02	0,00	0,00	-0,08	1,09
4	0,00	-0,14	0,20	0,19	-0,03	0,00	0,00	0,32	0,55
5	0,00	-0,41	0,15	0,17	-0,04	0,00	0,00	0,46	0,34
6	0,00	-0,36	0,16	0,15	-0,04	0,00	0,00	0,46	0,38
7	0,00	-0,17	0,10	0,15	-0,04	0,00	0,00	0,46	0,49
8	0,00	-0,16	0,08	0,10	-0,04	0,00	0,00	0,56	0,53
9	0,00	0,06	0,09	0,06	-0,04	0,00	0,00	0,58	0,74
10	0,00	0,08	0,06	0,03	-0,03	0,00	0,00	0,51	0,65
Total	0,00	0,04	0,16	0,15	-0,03	0,00	0,00	0,39	0,71

Figure 1: Policy effects in 2022-2023, using the HCPI-indexation, %



ANNEX 3 – VALIDATION TABLES

Table A3.1. Original income in EUROMOD - Number of recipients (thousands)

	Simulated (Y / N)	EUROMOD				External				Ratio			
		2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
Earnings (ils_earns)													
employment income (yem)	N	3,462	3,462	3,462	3,462	3,117	3,241	3,284	NaN	1.11	1.07	1.05	NaN
self-employment income (yse)	N	870	870	870	870	405	402	394	NaN	2.15	2.17	2.21	NaN
monthly compensation employees (yemmc_s)	Y	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Other original income (ils_origy - ils_earns)													
Interest, dividends, profit from capital investments in unincorporated business (yiy)	N	2,815	2,815	2,815	2,815	2,202	2,807	3,204	NaN	1.28	1.00	0.88	NaN
Private pensions (ypp)	N	1,245	1,245	1,245	1,245	926	939	953	NaN	1.34	1.33	1.31	NaN
Income from rental of a property or land (ypr)	N	60	60	60	60	1,725	2,366	2,813	NaN	0.03	0.03	0.02	NaN
income of children under 16 (yot)	N	295	295	295	295	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Maintenance payments paid (xmp)	N	450	450	450	450	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Regular inter-household cash transfer (ypt)	N	164	164	164	164	135	137	140	NaN	1.21	1.19	1.17	NaN

Continued...

	Source	Comments
Earnings (ils_earns)		
employment income (yem)	-	-
self-employment income (yse)	-	-
monthly compensation employees (yemmc_s)	-	-
Other original income (ils_origy - ils_earns)		
Interest, dividends, profit from capital investments in unincorporated business (yiy)	-	-
Private pensions (ypp)	-	-
Income from rental of a property or land (ypr)	-	-
income of children under 16 (yot)	-	-
Maintenance payments paid (xmp)	-	-

Continued...

	Source	Comments
Regular inter-household cash transfer (ypt)	-	-

Table A3.2. Original income in EUROMOD - Annual amounts (millions)

	Simulated (Y / N)	EUROMOD				External				Ratio			
		2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
Earnings (ils_earns)													
employment income (yem)	N	1,227,207	1,263,301	1,300,231	1,363,513	1,096,786	1,157,330	1,202,116	NaN	1.12	1.09	1.08	NaN
self-employment income (yse)	N	91,799	94,078	96,487	98,179	83,502	96,122	91,029	NaN	1.10	0.98	1.06	NaN
monthly compensation employees (yemmc_s)	Y	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Other original income (ils_origy - ils_earns)													
Interest, dividends, profit from capital investments in unincorporated business (yiy)	N	48,007	58,469	54,956	59,496	80,863	94,507	67,736	NaN	0.59	0.62	0.81	NaN
Private pensions (ypp)	N	128,070	128,070	128,070	128,070	98,825	101,965	106,989	NaN	1.30	1.26	1.20	NaN
Income from rental of a property or land (ypr)	N	781	791	814	830	4,377	2,431	2,154	NaN	0.18	0.33	0.38	NaN
income of children under 16 (yot)	N	3,064	3,140	3,220	3,277	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Maintenance payments paid (xmp)	N	3,104	3,164	3,407	3,482	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Regular inter-household cash transfer (ypt)	N	3,803	3,898	3,997	4,067	2,770	2,729	2,840	NaN	1.37	1.43	1.41	NaN

Table A3.3. Taxes and SIC - Number of payers (thousands)

	Simulated (Y / N)	EUROMOD				SILC				Ratio				External				Ratio			
		2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
Taxes (ils_tax)																					
municipality tax (Kommuneskat) (tmu_s)	Y	4,471	4,488	4,494	4,488	0	0	0	0	0.00	0.00	0.00	0.00	4,506	4,573	4,623	NaN	0.99	0.98	0.97	NaN
church tax (Kirkeskat) (tcr_s)	Y	3,576	3,589	3,594	3,589	0	0	0	0	0.00	0.00	0.00	0.00	3,409	3,431	3,424	NaN	1.05	1.05	1.05	NaN
bottom bracket tax (Bundskat) (tinbt_s)	Y	4,489	4,508	4,508	4,502	0	0	0	0	0.00	0.00	0.00	0.00	4,551	4,617	4,671	NaN	0.99	0.98	0.97	NaN
top-bracket tax (Topskat) (tinto_s)	Y	767	770	798	836	0	0	0	0	0.00	0.00	0.00	0.00	506	521	522	NaN	1.52	1.48	1.53	NaN
property tax (Ejendomsværdiskat) (tpr_s)	Y	2,527	2,527	2,527	2,527	1,561	1,561	1,561	1,561	1.62	1.62	1.62	1.62	2,198	2,230	2,235	NaN	1.15	1.13	1.13	NaN
labour market contribution (Arbejdsmarkedsbidrag) (txc_s)	Y	3,932	3,932	3,932	3,932	0	0	0	0	0.00	0.00	0.00	0.00	3,249	3,338	3,389	NaN	1.21	1.18	1.16	NaN
Employee Social Insurance Contributions (ils_sicee)																					
supplementary labour market contribution (ATP-bidrag) (tscpiee_s)	Y	2,932	2,932	2,932	2,932	0	0	0	0	0.00	0.00	0.00	0.00	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
unemployment benefit contribution (A-kasse-bidrag) and early retirement pension contribution (Efterlønsbidrag) (tyrui_s)	Y	1,971	1,971	1,971	1,972	0	0	0	0	0.00	0.00	0.00	0.00	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Self-employed Social Insurance Contributions (ils_sicse)																					
Employer Social Insurance Contributions (ils_sicer)																					
supplementary labour market contribution (ATP-bidrag) (tscpier_s)	Y	2,932	2,932	2,932	2,932	0	0	0	0	0.00	0.00	0.00	0.00	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Credited Contributions (ils_sicct)																					
Other Contributions (ils_sicot)																					

Continued...

Source	Comments
Taxes (ils_tax)	
municipality tax (Kommuneskat) (tmu_s) -	-
church tax (Kirkeskat) (tcr_s) -	-
bottom bracket tax (Bundskat) (tinbt_s) -	-
top-bracket tax (Topskat) (tinto_s) -	-

Continued...

Source	Comments
property tax (Ejendomsværdiskat) (tpr_s) -	-
labour market contribution (Arbejdsmarkedsbidrag) (txc_s) -	-
Employee Social Insurance Contributions (ils_sicee)	
supplementary labour market contribution (ATP-bidrag) (tscpiee_s) -	-
unemployment benefit contribution (A-kasse-bidrag) and early retirement pension contribution (Efterlønsbidrag) (tyrui_s) -	-
Self-employed Social Insurance Contributions (ils_sicse)	
Employer Social Insurance Contributions (ils_sicer)	
supplementary labour market contribution (ATP-bidrag) (tscpier_s) -	-
Credited Contributions (ils_sicct)	
Other Contributions (ils_sicot)	

Table A3.4. Taxes and SIC - Annual amounts (millions)

	Simulated (Y / N)	EUROMOD				SILC				Ratio				External				Ratio			
		2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
Taxes (ils_tax)																					
municipality tax (Kommuneskat) (tmu_s)	Y	340,934	352,483	360,002	373,776	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	264,087	279,596	283,824	NaN	1.29	1.26	1.27	NaN
church tax (Kirkeskat) (tcr_s)	Y	9,477	9,813	10,024	10,410	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	6,970	7,306	7,330	NaN	1.36	1.34	1.37	NaN
bottom bracket tax (Bundskat) (tinbt_s)	Y	177,342	183,042	187,195	194,464	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	151,576	159,900	163,844	NaN	1.17	1.14	1.14	NaN
top-bracket tax (Topskat) (tinto_s)	Y	35,283	37,202	38,626	41,347	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	18,781	20,493	21,635	NaN	1.88	1.82	1.79	NaN
property tax (Ejendomsværdiskat) (tpr_s)	Y	8,093	9,978	9,341	9,309	31,255	31,255	31,255	31,255	0.26	0.32	0.30	0.30	15,103	14,215	14,443	NaN	0.54	0.70	0.65	NaN
labour market contribution (Arbejdsmarkedsbidrag) (txc_s)	Y	105,520	108,590	111,737	116,935	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	94,969	100,285	104,254	NaN	1.11	1.08	1.07	NaN
Employee Social Insurance Contributions (ils_sicee)																					
supplementary labour marke contribution (ATP-bidrag) (tscpiee_s)	Y	2,798	2,798	2,798	2,798	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
unemployment benefit contribution (A-kasse-bidrag) and early retirement pension contribution (Efterlønsbidrag) (tyrui_s)	Y	19,631	19,880	19,903	20,291	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	22,706	23,246	23,026	NaN	0.86	0.86	0.86	NaN
Self-employed Social Insurance Contributions (ils_sicse)																					
Employer Social Insurance Contributions (ils_sicer)																					
supplementary labour marke contribution (ATP-bidrag) (tscpier_s)	Y	5,595	5,595	5,595	5,595	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Credited Contributions (ils_sicct)																					
Other Contributions (ils_sicot)																					

	Simulated (Y / N)	EUROMOD				SILC				Ratio				External				Ratio			
		2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
Non-means-tested benefits (ils_bennt)																					
BEN:Mother's component of Maternity (Graviditets- og Barselsorlov), paternity (Fædreorlov) and Parental leave (Forældreorlov) (bma_s)	Y	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
BEN: Father's component of Maternity (Graviditets- og Barselsorlov), paternity (Fædreorlov) and Parental leave (Forældreorlov) (bpa_s)	Y	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
parental leave pay - civil servants (Barselsdagpenge) (bcbplcs)	N	84	84	84	84	84	84	84	84	1.00	1.00	1.00	1.00	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
covid-19 MC self-employed (bwkmce_s)	Y	0	0	0	NaN	0	0	0	NaN	0.00	0.00	0.00	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
covid wage compensation employee (bwkmcee_s)	Y	0	0	0	NaN	0	0	0	NaN	0.00	0.00	0.00	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
unemployment and similar benefits (Arbejdsløshedsdagpenge og andre A-kasseydelse) (bunct_s)	Y	305	305	305	305	305	305	305	305	1.00	1.00	1.00	1.00	294	260	216	NaN	1.04	1.17	1.41	NaN
severance pay and tax-free social assistance (Fratrædelsesgodtgørelse) (bunot)	N	23	23	23	23	23	23	23	23	1.00	1.00	1.00	1.00	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
education-related allowances (bed)	N	557	557	557	557	557	557	557	557	1.00	1.00	1.00	1.00	460	457	434	NaN	1.21	1.22	1.28	NaN
sickness benefit (Sygedagpenge) (bhl)	N	222	222	222	222	222	222	222	222	1.00	1.00	1.00	1.00	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
ordinary child benefit (ordinært børnetilskud) + supplement (ekstra børnetilskud) (bfach00_s)	Y	209	209	NaN	NaN	119	119	NaN	NaN	1.75	1.75	NaN	NaN	259	259	NaN	NaN	0.81	0.81	NaN	NaN
child benefit for student parents (tilskud til uddannelsessøgende) (bfached_s)	Y	5	5	5	5	20	20	20	20	0.24	0.24	0.24	0.24	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
other child benefits (bfachot)	N	645	645	645	645	645	645	645	645	1.00	1.00	1.00	1.00	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN

Continued...

Source	Comments
Pensions (ils_pen)	
old age pension (Folkepension) (poa00_s)	-
pension supplement (Pensionstillæg) (poa01_s)	-
supplementary pension (ældrecheck/ supplerende pensionsydelse) (poa02_s)	-

Continued...

	Source	Comments
pensions from the labour market contribution scheme (ATP-pensioner) (poa03)	-	-
heating aid (Varmetillæg) (poaot)	-	-
early Retirement Pension (Efterløn) (pyr)	-	-
disability benefits (Førtidspension) (pdi)	-	-
survivor benefit (Efterleverpension) (psu)	-	-

Means-tested benefits (ils_benmt)

social assistance benefit (Kontanthjælp; Aktivering af kontanthjælpsmodtagere og flygtninge; Integrationsydelse til flygtninge) (bsa_s)	-	-
other means-tested social assistance benefits (bsaot)	-	-
housing benefit (Boligsikring) (bho01_s)	-	-
housing grant (Boligydelse) (bho02_s)	-	-
green check (Grøn check) (bhtuc_s)	-	-
child family grant (Børnefamilieydelse) (bfachm_s)	-	-
benefit ceiling (bsard_s)	-	-
Extra child benefit (bfachxp_s) (bfach00_s)	-	-
Social assistance inflation compensation (Kontanthjælp) (bsaxp_s)	-	-

Non-means-tested benefits (ils_bennt)

BEN: Mother's component of Maternity (Graviditets- og Barselsorlov), paternity (Fædreorlov) and Parental leave (Forældreorlov) (bma_s)	-	-
BEN: Father's component of Maternity (Graviditets- og Barselsorlov), paternity (Fædreorlov) and Parental leave (Forældreorlov) (bpa_s)	-	-
parental leave pay - civil servants (Barselsdagpenge) (bcbplcs)	-	-

Continued...

	Source	Comments
covid-19 MC self-employed (bwkmcse_s)	-	-
covid wage compensation employee (bwkmcee_s)	-	-
unemployment and similar benefits (Arbejdsløshedsdagpenge og andre A-kasseydelse) (bunct_s)	-	-
severance pay and tax-free social assistance (Fratrædelsesgodtgørelse) (bunot)	-	-
education-related allowances (bed)	-	-
sickness benefit (Sygedagpenge) (bhl)	-	-
ordinary child benefit (ordinært børnetilskud) + supplement (ekstra børnetilskud) (bfach00_s)	-	-
child benefit for student parents (tilskud til uddannelsessøgende) (bfached_s)	-	-
other child benefits (bfachot)	-	-

Table A3.6. Benefits - Annual amounts (million)

	Simulated (Y / N)	EUROMOD				SILC				Ratio				External				Ratio			
		2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
Pensions (ils_pen)																					
old age pension (Folkepension) (poa00_s)	Y	88,779	85,840	86,173	83,387	82,846	82,846	82,846	82,846	1.07	1.04	1.04	1.01	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
pension supplement (Pensionstillæg) (poa01_s)	Y	67,554	67,247	68,658	69,415	50,480	50,480	50,480	50,480	1.34	1.33	1.36	1.38	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
supplementary pension (ældrecheck/ supplerende pensionsydelse) (poa02_s)	Y	827	824	814	1,278	3,888	3,888	3,888	3,888	0.21	0.21	0.21	0.33	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
pensions from the labour market contribution scheme (ATP-pensioner) (poa03)	N	16,439	16,770	16,973	17,482	16,439	16,439	16,439	16,439	1.00	1.02	1.03	1.06	15,498	15,518	16,180	NaN	1.06	1.08	1.05	NaN
heating aid (Varmetillæg) (poaot)	N	335	341	346	356	335	335	335	335	1.00	1.02	1.03	1.06	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
early Retirement Pension (Efterløn) (pyr)	N	9,074	9,256	9,369	9,649	9,074	9,074	9,074	9,074	1.00	1.02	1.03	1.06	8,869	10,174	8,682	NaN	1.02	0.91	1.08	NaN
disability benefits (Førtidspension) (pdi)	N	31,989	32,632	33,028	34,018	31,989	31,989	31,989	31,989	1.00	1.02	1.03	1.06	43,311	46,196	45,479	NaN	0.74	0.71	0.73	NaN
survivor benefit (Efterleverspension) (psu)	N	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Means-tested benefits (ils_benmt)																					
social assistance benefit (Kontanthjælp; Aktivering af kontanthjælpsmodtagere og flygtninge; Integrationsydelse til flygtninge) (bsa_s)	Y	11,900	17,750	17,649	17,671	12,775	12,775	12,775	12,775	0.93	1.39	1.38	1.38	13,082	11,792	10,241	NaN	0.91	1.51	1.72	NaN
other means-tested social assistance benefits (bsaot)	N	23,805	24,283	24,578	25,314	23,805	23,805	23,805	23,805	1.00	1.02	1.03	1.06	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
housing benefit (Boligsikring) (bho01_s)	Y	9,442	10,110	11,021	11,073	4,960	4,960	4,960	4,960	1.90	2.04	2.22	2.23	3,870	3,847	3,811	NaN	2.44	2.63	2.89	NaN
housing grant (Boligydelse) (bho02_s)	Y	8,515	7,804	9,057	8,556	7,643	7,643	7,643	7,643	1.11	1.02	1.19	1.12	70,448	74,617	73,181	NaN	0.12	0.10	0.12	NaN
green check (Grøn check) (bhuc_s)	Y	2,532	2,535	1,890	1,299	2,897	2,897	2,897	2,897	0.87	0.87	0.65	0.45	2,941	2,929	2,202	NaN	0.86	0.87	0.86	NaN
child family grant (Børnefamilieydelse) (bfachnm_s)	Y	13,787	13,863	13,905	14,806	6,086	6,086	6,086	6,086	2.27	2.28	2.28	2.43	17,445	17,395	17,372	NaN	0.79	0.80	0.80	NaN
benefit ceiling (bsard_s)	Y	299	395	478	472	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Extra child benefit (bfachxp_s)	Y	45	95	95	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
(bfach00_s)	Y	NaN	NaN	2,144	2,201	NaN	NaN	841	841	NaN	NaN	2.55	2.62	NaN	NaN	483	NaN	NaN	NaN	4.44	NaN
Social assistance inflation compensation (Kontanthjælp) (bsaxp_s)	Y	NaN	NaN	NaN	221	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Non-means-tested benefits (ils_bennt)																					

Table A3.7. Distribution of equivalised disposable income

	EUROMOD				External				Ratio			
	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
Decile 1	3.62	3.71	3.68	3.60	3.50	3.50	NaN	NaN	1.04	1.06	NaN	NaN
Decile 2	5.76	5.76	5.74	5.67	5.70	5.60	NaN	NaN	1.01	1.03	NaN	NaN
Decile 3	6.73	6.68	6.67	6.60	6.70	6.60	NaN	NaN	1.00	1.01	NaN	NaN
Decile 4	7.73	7.69	7.67	7.61	7.60	7.50	NaN	NaN	1.02	1.03	NaN	NaN
Decile 5	8.76	8.72	8.73	8.70	8.50	8.40	NaN	NaN	1.03	1.04	NaN	NaN
Decile 6	9.79	9.73	9.76	9.74	9.50	9.30	NaN	NaN	1.03	1.05	NaN	NaN
Decile 7	10.76	10.73	10.78	10.80	10.50	10.40	NaN	NaN	1.02	1.03	NaN	NaN
Decile 8	12.03	12.00	11.98	12.06	11.80	11.70	NaN	NaN	1.02	1.03	NaN	NaN
Decile 9	13.76	13.82	13.80	13.86	13.70	13.60	NaN	NaN	1.00	1.02	NaN	NaN
Decile 10	21.07	21.16	21.19	21.35	22.50	23.30	NaN	NaN	0.94	0.91	NaN	NaN
Median	263,679	269,438	275,391	285,218	239,189	247,352	NaN	NaN	1.10	1.09	NaN	NaN
Mean	265,319	271,567	277,188	286,422	266,444	278,492	NaN	NaN	1.00	0.98	NaN	NaN
Gini	25.59	25.67	25.75	26.15	27.00	27.70	NaN	NaN	0.95	0.93	NaN	NaN
S80/20	3.71	3.69	3.71	3.80	3.93	4.03	NaN	NaN	0.94	0.92	NaN	NaN

Table A3.8. At-risk-of-poverty rates (%) by gender and age

	EUROMOD				External				Ratio			
	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
40% median HDI by gender												
Total	3.78	3.66	3.66	3.87	3.60	3.50	NaN	NaN	1.05	1.05	NaN	NaN
Males	4.08	3.92	3.89	4.07	3.60	3.50	NaN	NaN	1.13	1.12	NaN	NaN
Females	3.48	3.40	3.43	3.68	3.60	3.40	NaN	NaN	0.97	1.00	NaN	NaN
50% median HDI by gender												
Total	7.29	6.45	6.70	7.04	6.90	6.90	NaN	NaN	1.06	0.94	NaN	NaN
Males	7.02	6.27	6.40	6.82	6.90	7.00	NaN	NaN	1.02	0.90	NaN	NaN
Females	7.55	6.63	6.99	7.27	7.00	6.90	NaN	NaN	1.08	0.96	NaN	NaN
60% median HDI by gender												
Total	13.17	12.76	12.93	13.67	12.30	12.40	NaN	NaN	1.07	1.03	NaN	NaN
Males	12.34	11.98	12.20	12.83	11.80	12.30	NaN	NaN	1.05	0.97	NaN	NaN
Females	13.99	13.53	13.64	14.51	12.80	12.40	NaN	NaN	1.09	1.09	NaN	NaN
70% median HDI by gender												
Total	22.97	22.86	23.01	23.58	20.00	20.80	NaN	NaN	1.15	1.10	NaN	NaN
Males	21.38	21.26	21.38	21.79	18.70	20.30	NaN	NaN	1.14	1.05	NaN	NaN
Females	24.55	24.43	24.61	25.36	21.30	21.30	NaN	NaN	1.15	1.15	NaN	NaN
60% median HDI by age group												
0-15 years	9.34	8.28	8.40	8.66	9.80	9.80	NaN	NaN	0.95	0.85	NaN	NaN
16-24 years	31.82	30.53	30.85	31.17	28.50	26.20	NaN	NaN	1.12	1.17	NaN	NaN
25-49 years	13.02	12.01	12.12	12.34	11.80	11.80	NaN	NaN	1.10	1.02	NaN	NaN
50-64 years	8.16	8.34	8.42	8.57	6.20	5.80	NaN	NaN	1.32	1.44	NaN	NaN
65+ years	11.41	12.37	12.67	15.45	11.60	13.20	NaN	NaN	0.98	0.94	NaN	NaN