

# **EUROMOD**

## **COUNTRY REPORT**



## **DENMARK (DK)**

### **2015 - 2018**

**Bent Greve (2013-2018)**

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**EUROMOD version I1.0**



EUROMOD is a tax-benefit microsimulation model for the European Union (EU) that 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 28 Member States and is updated to recent policy systems using data from the European Union Statistics on Income and Living Conditions (EU-SILC) as the input database, supported by DG-EMPL of the European Commission.

The European Commission is in the process of taking over responsibility for carrying out the annual update and release of EUROMOD. The transfer of responsibility is expected to be complete by the end of 2020 and the transition is being facilitated by close cooperation between the University of Essex and the Joint Research Centre (JRC) of the European Commission as well as Eurostat.

This report documents the work done in one annual update for Denmark. This work was carried out by the EUROMOD core developer team, based in ISER at the University of Essex and at JRC-Seville, in collaboration with a national team.

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The results presented in this report are derived using EUROMOD version I1.0. EUROMOD is continually being improved and the results presented here may not match those that would be obtained with later versions of EUROMOD. For more information, see:

<https://www.euromod.ac.uk>

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The information contained in this publication does not necessarily 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 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 65, but will gradually be increased in the years to come. It is possible to postpone the age of retirement and then acquire a higher level of state pension.
- + 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 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 borderlines are although not always very 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 also be changed by the tax payer. After the end of an income year a final tax return has to be filled in and/or confirmed by all tax payers using a web-based solution, but most items are filled already through the third-party reporting system. Payment of taxes might now be changed during the year in order to increase the likelihood that what people actually are paying in income taxes reflects what they should 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). However, if the average wage increase is above 2 % up to 0.3 % will be deducted to a specific pool of resources that can be used for initiatives for weaker groups within social, health and labour market policy areas. 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 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 spouses' income and wealth. Since the 1<sup>st</sup> of October 2016, a new ceiling of benefits which includes social assistance but also other benefits was implemented. However, the benefit level is never below the calculated social assistance. See more details in Section 2.3.2.

**Integration benefit (*Integrationsydelse*).** People who have not lived in Denmark in 7 out of the last 8 years will be given an integration benefit. The size is at the level of the educational benefit with possible activity support. However, in so far as EU-citizens has the rights to benefits according to EU rules on free movement they will be given social assistance, and will thus not be influenced by the change.

**Unemployment benefits (*Dagpenge*):** 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 since 2013. The full right can be re-established by 52 weeks of full-time work within 3 years running time. The employer pays the first three days of unemployment. In 2013, unemployed not fulfilling the 3 years rule can get a specific educational grant at 60% of unemployment benefit for singles and 80% when having responsibility for a child under the condition that they participate in some kind of education. In 2014 and 2015 there was a temporary labour market benefit at 60 % of highest unemployment benefit for long term unemployed whose eligibility to the standard benefit expired (80 % when having a child). The total length can though not exceed four years. Since 2017 a new system will be 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 educated 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. Historically, benefits were available for a maximum of 52 weeks within 18 months. Since 1<sup>st</sup> of July 2014, 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 persons' 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.

**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.

**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 size varying with the age of the child. The grant is automatically paid to the mother if the father has not the sole custody for the child.

**Child benefits (*Børnetilskud*):** A number of different tax-free child benefits are paid, typically to the mother, 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 size 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 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 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 60 until the standard retirement age of 65. Conditional upon previous unemployment insurance and pension contributions. Higher benefit if retirement is postponed 2 years. The early retirement pension scheme will gradually, fully implemented in 2023, be reduced to three years and eligibility become dependent on the year of birth. All born before 1954 can get the benefit from the age of 60, whereas those born in the second half of 1954, for example, can get the benefit when becoming 61.<sup>1</sup>

**Old-age pension (*Folkepension*):** Given from age 65. Benefit level varies with marital status. The benefit is phased out against own labour income. However, a change in the pension age will gradually be phased in, starting in 2019.

**Old-age pension supplement (*Pensionstillæg*):** Given from age 65. 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 for a period of 3 months receive a survivors' benefit when the partner dies. 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.

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<sup>1</sup> The increase in early retirement pension age is currently not taken into account by EUROMOD simulation, as a relatively small amount of people is expected to be affected by the policy change in 2014 and 15. This also due to a declining number of member of the early retirement scheme.

**Green check (*Grøn check*):** Introduced in 2010 as 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 starting in 2018.

**Resource activity benefit (*Ressourceforløbsydelse*):** Introduced from 1st of January, 2013 is a benefit at the level of social assistance, albeit with no means test for spouse income and wealth. It is for those where one tests if there is a work-ability left, and, then they might be liable to disability pension.

- *Not strictly benefits*

**Flex-job (*Fleksjob*):** May be granted to employees with permanent lack of abilities to work in an ordinary job. The recipient works an agreed number of hours which is paid by the employer. This will be supplemented with a benefit at the level of unemployment benefit for hours up to 37 hours per week. Also possible for unemployed having had a flex-job is a kind of unemployment benefit (*ledighedsydelse*) and for early retirees (*fleksydelse*).

### 1.3 Social contributions

Denmark has a number of payments that contribute to 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. month) 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 especially due to difference in the cost of administration as the payment otherwise reflect the level of unemployment benefit. Deductible in taxable income.

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

**Earned income tax credit (*Beskæftigelsesfradrag*):** Negative marginal tax rate on labour income of 9.5 % in 2018, with a maximum allowance of 33,300 DKK in 2018. For single income earners there is a supplementary of 6 % with a maximum allowance of 21,200.

**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.

**Church tax (*Kirkeskat*):** A voluntary contribution collected through the tax system, if the individual tax payer does not opt out. The rate is determined individually based upon budget from the church by the 98 municipalities on average 0.9 per cent (with a span of 0.39-1.30 % and levied upon the taxable income base after subtracting the general personal allowance.

**Health contribution (*Sundhedsbidrag*):** A tax of 1 per cent in 2018, levied upon the taxable income base after subtracting the general personal allowance.

**Bottom-bracket tax (*Bundskat*):** The lowest of the three progressive state taxes. Tax rate is 11.15 % in 2018. 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 498,900 in 2018 subtracted. From the tax year 2010, a basic yearly allowance in 2018 of 43,800 DKK for the inclusion of positive net capital income has been used.

**Tax ceiling (*Skatteloft*):** A ceiling at the level of 52.02% in 2018 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:** All tax payers, who have an employer-provided telephone at their disposal. From 2018 this has been abolished.

**Shares tax (*Aktieskat*):** Net income from shares (share profits, dividends and premiums, minus losses) is taxed progressively below/above 52,900 DKK in 2018 with 27/42 %.

**Property value tax (*Ejendomsværdiskat*):** A progressive state tax on the overall value of property, based on the official/public 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 exceptions of those areas identified by the EU directives.

**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 289,000 DKK in 2018.

**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 64,300 DKK in 2018.

## 2. SIMULATION OF TAXES 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	Treatment in EUROMOD					Why not fully simulated?
		2014	2015	2016	2017	2018	
Unemployment benefits	bunct_s	PS	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	I	No data on disabled waiting for subsidized work or flexjob.
Sickness benefits	bhl	I	I	I	I	I	No data on health status.
Social Assistance	bsa_s	S	S	S	S	S	
Integration benefit	-	E	E	E	E	E	No data on length of stay in Denmark (part of bsa_s).
Resource activity benefit	bsaot	I	I	I	I	I	Includes also other social assistance benefits.
Education grant	bed	I	I	I	I	I	
Maternity/paternity leave	-	I	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	S	
Ordinary Child Benefit & supplement	bfach00_s	S	S	S	S	S	
Child benefit for student parents	bfached_s	S	S	S	S	S	
Child benefits for twins etc. & adoptions	bfachot	I	I	I	I	I	Rare benefit. No information on adoption.
Child support	bfachot	E	E	E	E	E	No information on parents outside household.
Disability pension	pdi	I	I	I	I	I	Impartial information on ability to work.
Housing benefit	bho01_s	S	S	S	S	S	
Housing grant	bho02_s	S	S	S	S	S	
Heating benefit	poaot	I	I	I	I	I	
Early retirement pension	-	E	E	E	E	E	
Old-age pension	poa00_s	S	S	S	S	S	
Old-age pension supplement	poa01_s	S	S	S	S	S	
Old-age supplementary benefit	poa02_s	S	S	S	S	S	
Survivors' benefits	psu	I	I	I	I	I	No information on death of partner.
Green check	bhtuc_s	S	S	S	S	S	

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	Treatment in EUROMOD					Why not fully simulated?
		2014	2015	2016	2017	2018	
Labour market contribution	txc_s	S	S	S	S	S	-
Supplementary labour market contribution	tscpi_s	S	S	S	S	S	-
Contributions to unemployment insurance scheme & early retirement pension scheme	tyrui_s	PS	PS	PS	PS	PS	No individual data on contribution => randomly assigned from population data.
Earned Income Tax Credit	tintc_s	S	S	S	S	S	-
Municipality tax	tmu_s	S	S	S	S	S	-
Church tax	tc_r_s	S	S	S	S	S	-
Health contribution	thl_s	S	S	S	S	S	-
Bottom-bracket tax	tinbt_s	S	S	S	S	S	-
Top-bracket tax	tinto_s	S	S	S	S	S	-
Multimedia tax(now tax on free telephone)	-	E	E	E	E	E	No information on the tax base.
Shares tax	-	E	E	E	E	E	No isolated data on share income
Property value tax	tpr_s	PS	PS	PS	PS	PS	Tax base derived from tax payment.
Land value tax	-	I	I	I	I	I	No isolated data on the tax payment or on the land value.
Inheritance tax	-	E	E	E	E	E	No information on inheritance
Gift tax	-	E	E	E	E	E	No information on gifts
Added-value tax	-	E	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) in Denmark. The benefit is only simulated for those with receipt of the benefit 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 register data.

### 2.2 Order of simulation and interdependencies

The following table shows the order in which the main elements of the Danish system in 2014-2018 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, 2014-2018

Policy	Description	Main output
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
tintaox_dk	Additional deduction	tintaox_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
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

## 2.3 Social benefits

### 2.3.1. Unemployment benefit (Arbejdsløshedsdagpenge og andre Akasseydelser, *bunct\_s*)

Table 2.1: Characteristics of the unemployment benefit

		2014	2015	2016	2017	2018
<b>Eligibility</b>	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	Yes
<b>Payment</b>	Contribution base	Average employment income of the 3 months prior to unemployment.			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	211,900	215,020	217,360	220,740	223,596
<b>Duration</b>	Standard (in months)	24 months				
	Special cases (in month)	Possibility to extent 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 DKr 113.62. The duration may also be reduced by 1 day if the unemployed person works less than 148 hours during 4 months of unemployment.				
<b>Subject to</b>	Taxes	Yes	Yes	Yes	Yes	Yes
	SIC	No	No	No	No	No

- **Definitions**

The unit of analysis is the individual (tu\_individual\_dk).

- **Eligibility conditions**

For members of an unemployment insurance fund 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. From 1<sup>st</sup> 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. 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 of extra unemployment benefit (which relates to one year). 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 118.68 DKr in 2018. The measure is implemented in two phases. In the first half of 2017, unemployed persons are obliged to work for a minimum of 9.3 hours per week, after the 1<sup>st</sup> of July 2017 this rule is abolished. From 1<sup>st</sup> of July 2017 onwards, unemployed can still 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 during 4 months of unemployment (which relates to 9.3 hours per week) will lose one day of the benefit, and again one day after the next four months. From 1st of July unemployment benefit is paid per hour and not per day.

- **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 223,596 DKr per year in 2018. 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. It 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 2.4 Upper limits for unemployment benefits (DKK)

	2014	2015	2016	2017	2018
Upper limit	211,900	215,020	217,360	220,740	223,596
Student/Conscripts	173,750	176,280	178,360		
With dependent child				180,960	183,348
Without dependent child				157,820	159,876

### EUROMOD Notes:

- 1) Membership of an unemployment fund (lrg=1) is simulated through a discrete model based on national register data.
- 2) According to the law, 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 as it does not affect unemployment benefit payment in the first year of unemployment.

### 2.3.2. 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 and 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 7 out of the last 8 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 when the income (*il\_bsa*) of the partner reaches the benefit entitlement.

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 between 2015 and 2018. 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. Until January 2015, a benefit reduction was applied if social assistance has been received for more than 6 months. Starting from 2011, such reduction was substituted for recipients below age 25 by a further reduced benefit. Both reductions have been abolished on the 1st of January 2015.

In 2014 social assistance was in principle 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 condition, by an activity grant. The table below illustrates benefit entitlement.

Table 2.6. Social assistance benefits, 2015-2018, per month per person

	2015	2016	2017	2018
Provider (over 30 or under 30 and not married)	14,416	14,575	14,808	14,993
Provider (under 30 and married)	9,640	9,746	9,902	10,026
Non provider over 30 or over 25 with more than primary education	10,849	10,968	11,143	11,282
Non provider between 25 and 30 with primary education or less	5903	6,010	6,106	6,182
Non-provider younger than 25 with more than primary education				
- living by oneself	6,992	7,062	7,181	7,272
- living with parents	3,374	3,411	3,466	3,509
Non-provider younger than 25 with primary education or less (education grant)				
- living by oneself	5,903	6,010	6,106	6,182
- living with parents	2,544	2,590	2,631	2,664

Source: Lovbekendtgørelse nr. 190 af 24. februar 2012 om aktiv socialpolitik <http://www.retsinformation.dk/print.aspx?id=140126>; <http://bm.dk/da/Tal%20og%20tendenser/Satser%20for%202014/Kontanthjaelp.aspx> - accessed 13. August, 2014 and 2nd July, 2015, [www.su.dk](http://www.su.dk) (accessed on the 2nd of July, 2015). Vejledning om satser (vej.nr. 11145 of 01/12/2015), Vejledning om satser m.v., 2017 (Vej. Nr. 10144 af 16/11/2016, Vejledning om Satser, 2018 (Vej nr. 10204 af 07/12/2017..

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 2018, benefit recipients are allowed to earn 26.78 Dkr. per hour for a maximum of 160 hours per month.

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

	2014	2015	2016	2017	2018
Hourly income	25.00	25.38	25.74	26.25	26.78

In April 2016 (although with impact on benefits first from 1st October 2016), a benefit ceiling for social assistance recipients was implemented. 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 benefit. The reform only impacts on the benefit amount from 1<sup>st</sup> October 2016 onwards as the government decided to give a preparation period to those affected by the changes.

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

	2016		2017		2018	
	Standard	Reduced	Standard	Reduced	Standard	Reduced
Single without children	13,265	6,216	13,477	6,216	13,645	3,294
Single provider with one child	15,196	9,232	15,439	9,232	15,632	9,347
Single providers with two or more children	15,554	9,300	15,803	9,300	16,001	9,416
Married/Cohabiting without children	10,968	5,158	11,143	5,158	11,282	5,222
Married/Cohabiting with 1 child	14,575	6,975	14,808	6,975	14,993	70,62
Married/Cohabiting with 2 children or more	14,575	7,042	14,808	7,042	14,993	7,131

Source: Vejledning om satser (vej.nr. 11145 of 01/12/2015), Vejledning om satser m.v., 2017 (Vej. Nr. 10144 af 16/11/2016, Vejledning om Satser, 2018 (Vej nr. 10204 af 07/12/2017

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. This also came into force from the 1st of October 2016. 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 fulfill 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 Notes:** **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 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 38 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.

### 2.3.2 Child family grant (*Børnefamilieydelse, bfachnm\_s*)

- *Definitions*

The unit of analysis is a family formed by parents and dependent children (*tu\_bfa\_dk*).

- *Eligibility conditions*

Having child(ren) aged 0-17 years. For migrants from outside the EU there has since 1<sup>st</sup> 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 %, 1 year 50 % and 1½ year 75 %.

- *Income test*

An income test was introduced in 2014. 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 765,800 in 2018 (749,000 in 2017, 732,900 in 2016, 723,100 in 2015 and 712,600 in 2014). The income test follows the following rules:

- a) If parents are non-married, then the mother's income is used. In absence of the mother, then the father's income is used.
- b) If parents are married, and only one parent has income above the threshold, then the income of this person is used for the income test. The income of a cohabiting partner is not taken into account.
- c) If parents are married and both have income above the threshold, the withdrawal rate is applied to the sum of the income of each partner which is above the threshold.

- *Benefit amount*

The benefit varies for 0-2 year olds, 3-6 year olds and 7-17 year old children, see table 2.8. The amount is paid out quarterly, although for those between 15-17 years it is a monthly payment.

Table 2.9. Child family grant, per child per year, 2014-2018 (Danish Kroner).

Age of the child	2014	2015	2016	2017	2018
0-2 years	17,616	17,772	17,880	17,964	18,024
3-6 years	13,944	14,076	14,148	14,220	14,268
7-17 years	10,980	11,076	11,136	11,184	11,232

Source: Lovbekendtgørelse nr. 964 af 19. september 2011 om en børne- og ungefamilieydelse.

<http://www.skm.dk/skattetal/satser/satser-og-beloebgsgraenser/boerne-og-ungeydelsesloven/>, hentet 13. august, 2014, Skatteministeriet, Børne- og Ungeydelse i 2015 og 2016, [www.skm.dk](http://www.skm.dk), [www.borger.dk](http://www.borger.dk), <http://www.skm.dk/skattetal/statistik/tidsserieoversigter/centrale-beloebgsgraenser-i-skattelovgivning-2010-2018>,

**EUROMOD Notes:** The benefit is assigned to the mother if any. We assume that children with migration background have lived at least two out of the last 10 years in Denmark and thus, are eligible to the full amount of the benefit.

### 2.3.3 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*

None.

- *Benefit amount*

5,652 DKK per child in ordinary child benefit plus a supplement of 5,700 DKK per benefit unit for lone providers, see table 2.10, in 2018.

Table 2.10. Ordinary child benefit rates, pr. year, 2014-2018 (Danish Kroner)

	Basic (per child)	Supplement (per unit)
2014	5,276	5,380
2015	5,356	5,460
2016	5,432	5,536
2017	5,540	5,648
2018	5,652	5,700

Source: Vejledning om regulering pr. 1. januar 2014 af satser på Social, Børne og Integrationsministeriets område. VEJ nr. 9017 af 14/01/2014 and Vejledning nr. 9805 af 24/10/2014, Vejledning om satser m.v., 2017 (Vej. Nr. 10144 af 16/11/2016), [www.borger.dk](http://www.borger.dk)

### 2.3.4 Child benefit for student parents (Særligt børnetilskud til uddannelsessøgende forældre, *bfached\_s*)

- **Definitions**

The unit of analysis is a family formed by parent 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**

An income test was introduced in 2014. If a single person has an income above 148,600 in 2018 (145,700 in 2017, 142,800 DKK in 2016, 140,800 in 2015, 138,700 in 2014) and a couple above 222,800 in 2018 (218,400 in 2017, 214,000 DKK in 2016, 211,100 in 2015, 208,000 in 2014,), 10% of the income above the threshold is subtracted from the benefit amount.

<u>Income included in the income test:</u>
+ (Self-)Employment income
+ Disability related benefits
+ Unemployment related benefits
+ Net capital income



- **Benefit amount**

7,420 DKK per child per year in 2018 (exception: no benefit for the first child if living with partner and both receive education grant). Between 2014 and 2017 the yearly benefit amount increased from 7,008 DKK in 2014, 7,032 DKK 2015, 7,132 DKK in 2016 to 7,276 DKK in 2017.

### 2.3.5 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.

- **Income and wealth test**

The green check is phased out with 7.5 per cent against income above a threshold of 397,000 in 2018, 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 765 DKK for adults in 2018 (>18 years of age) and 175 DKK for children (for at max. two children per family). Benefits for children are given to the mother. From 2013 an extra amount of 280 DKK per person for low income earners was decided and it is in 2018 175 DKK and will be reduced by 7.5 % if the income exceeds 232,000 DKK in 2018.

Table 2.11 Green check compensations scheme

	2014	2015	2016	2017	2018
Per person (per year)	1300	955	950	940	765
In case of pensioners					930
Per child (max two, per year) children)	300	220	220	215	175
Extra amount low income earner	280	280	220	215	175

Source: [www.skm.dk](http://www.skm.dk)

### 2.3.6 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 plausible value of housing cost of households not receiving housing allowances. The derived variable is called xivhc.

#### 2.3.6.1 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. Personal income base (il\_PersIncome) is taken into account. Incomes from children living with their parents are included in the relevant household income, but only after deducting 20,200 DKK in 2018, see table 2.12.

Income of all household members (income from children after deduction) 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 benefits
- Contributions to private pension plans that can be deducted from personal income
- Employee/self-employed labour market contribution
- + Wealth

Table 2.12. Deductions in childrens incomes before deduction, 2014-2018 (Danish kroner)

2014	19,800
2015	19,900
2016	20,000
2017	20,100
2018	20,200

Source: Lovbekendtgørelse nr. 663 af 14. juni 2011 om individuel boligstøtte <http://www.magnus.dk/Home/Satser/Boligst%C3%B8tte.aspx?satsID={0AB5B436-2FD4-4A4A-807A-A6D8EEBEB113}>, VEJ Nr. 81 af 12711/2012: Vejledning om regulering pr. 1. Januar 2013 af satser på Social og Integrationsministeriets område and Vejledning om regulering pr. 1. januar 2014 af satser på Social, Børne og Integrationsministeriets område. VEJ nr. 9017 af 14/01/2014 and Vejledning nr. 9805 af 24/10/2014 (2015 level). LBK nr. 1000 af 30. August, 2015 (2016 level). Vejledning om satser m.v., 2017 (Vej. Nr. 10144 af 16/11/2016), Boligstøtte from [www.borger.dk](http://www.borger.dk).

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

Table 2.13. Income augmentation with wealth for calculation of housing benefit, 2014-2018 (Danish kroner).

%	2014	2015	2016	2017	2018
0	<739,700	< 745,600	< 750,100	< 753,000	< 756,100
10	739,700–1,479,500	745,600–1,491,400	750,100–1,500,300	753,000- 1,507,800	756,100-1,512,300
20	>1,479,500	>1,491,400	>1,500,300	>1,507,800	>1,512,300

Source: Lovbekendtgørelse nr. 663 af 14. juni 2011 om individuel boligstøtte <http://www.magnus.dk/Home/Satser/Boligst%C3%B8tte.aspx?satsID={0AB5B436-2FD4-4A4A-807A-A6D8EEBEB113}>, VEJ Nr. 81 af 12711/2012: Vejledning om regulering pr. 1. Januar 2013 af satser på Social og Integrationsministeriets område, Vejledning om regulering pr. 1. januar 2014 af satser på Social, Børne og Integrationsministeriets område. VEJ nr. 9017 af 14/01/2014 2014and Vejledning nr. 9805 af 24/10/2014 (2015 level).

LBK nr. 1000 af 30. August, 2015 (2016 level). Vejledning om satser m.v., 2017 (Vej. Nr. 10144 af 16/11/2016), see table 2.12.

The benefit amounts to 60 per cent of the housing costs. From this, 18 per cent of the income that exceeds 143,600 DKK (in 2018) is subtracted. This income threshold is augmented by 37,800 DKK (in 2018) for each child beyond the first in the household, to a maximum of 4 children, see table 2.14 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 minimum 24,200 DKK in rents him/herself. Households with up to 3 children (with 4 children or more) can at most receive a housing grant of 42,516 DKK (53,145DKK) per year.

Table 2.14. Various limits etc. for housing benefit, per year, 2014-2018.

	2014	2015	2016	2017	2018
Lower income deduction	140,500	141,600	142,500	143,200	143,600
Deduction increase per child (2-4 <sup>th</sup> )	37,000	37,300	37,500	37,700	37,800
Own minimum payment	23,700	23,900	24,000	24,100	24,200
Maximum benefit, hhd.s					
With up to 3 children	41,592	41,928	42,180	42,384	42,516
With 4 or more children (25% higher level)	51,990	52,410	52,750	52,980	53,145

Source: Lovbekendtgørelse nr. 663 af 14. juni 2011 om individuel boligstøtte <http://www.magnus.dk/Home/Satser/Boligst%c3%b8tte.aspx?satsID={0AB5B436-2FD4-4A4A-807A-A6D8EEBEB113}>, Vejledning om regulering pr. 1. januar 2014 af satser på Social, Børne og Integrationsministeriets område. VEJ nr. 9017 af 14/01/2014 2014and Vejledning nr. 9805 af 24/10/2014 (2015 level). LBK nr. 1000 af 30. August, 2015 (2016 level), see table 2.12.

### 2.3.6.2 Housing grant (Boligyldelse, *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 relevant differences are: only the part of incomes from children above 22,600 DKK per year in 2018 is included in the relevant household income (table 2.15 below).

Table 2.15. Deductions in childrens incomes before deduction, 2014-2018.

Year	DKK Per year
2014	21,000
2015	21,300
2016	21,600
2017	22,100
2018	22,600

Source: Lovbekendtgørelse nr. 663 af 14. juni 2011 om individuel boligstøtte <http://www.magnus.dk/Home/Satser/Boligst%C3%B8tte.aspx?satsID={0AB5B436-2FD4-4A4A-807A-A6D8EEBEB113}>, Vejledning om regulering pr. 1. januar 2014 af satser på Social, Børne og Integrationsministeriets

område. VEJ nr. 9017 af 14/01/2014 and Vejledning nr. 9805 af 24/10/2014 (2015 level). LBK nr. 1000 af 30. August, 2015 (2016 level). Vejledning om satser m.v., 2017 (Vej. Nr. 10144 af 16/11/2016), see also table 2.12.

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, 2014-2018

%	2014	2015	2016	2017	2018
0	<785,800	<797,600	<808,800	< 826,500	< 844,700
10	785,800-1,571,700	797,600-1,593,300	808,800-1,617,000	826,500-1,653,200	844,700-1,689,600
20	> 1,571,700	> 1,593,300	> 1,617,000	> 1,653,200	> 1,689,600

Source: Lovbekendtgørelse nr. 663 af 14. juni 2011 om individuel boligstøtte <http://www.magnus.dk/Home/Satser/Boligst%C3%B8tte.aspx?satsID={0AB5B436-2FD4-4A4A-807A-A6D8EEBEB113}>. LBK nr. 1000 af 30. August, 2015 (2016 level). Vejledning om satser m.v., 2017 (Vej. Nr. 10144 af 16/11/2016), see also Table 2.12.

- **Benefit amount**

The housing grant corresponds as a rule to 75 per cent of the housing with a supplement of 6,800 DKK (in 2018). 22.5 per cent of the income exceeding 160,500 DKK (in 2018) is subtracted from this. This income threshold is augmented with 42,300 DKK (in 2018) from 2-4<sup>th</sup> child. The recipient of the housing benefit has to pay minimum 11 per cent of the income herself or at least 17,000 DKK (in 2018). Households can at most receive a housing grant of 47,496 DKK per year. A higher threshold used to apply for households with 4 or more children, but this rule was abolished in 2017. Thus, the maximum benefit is now defined independent from the number of children in the household.

Table 2.17. Various limits etc. for housing grant, per year, 2014-2018 (Danish kroner).

	2014	2015	2016	2017	2018
Supplement	6,300	6,400	6,500	6,600	6,800
Lower income deduction	149,300	151,500	153,000	157,000	160,500
Deduction increase per 2-4 <sup>th</sup>	39,300	39,900	40,500	41,400	42,300
Own minimum payment	15,800	16,000	16,200	16,600	17,000
Maximum benefit				46,476	47,496
With up to 3 children	44,184	44,844	45,480	-	-
With 4 or more children	55,230	56,055	56,850	-	-

Source: <https://www.retsinformation.dk/Forms/r0710.aspx?id=141709>, <http://www.magnus.dk/Home/Satser/Boligst%C3%B8tte.aspx?satsID={0AB5B436-2FD4-4A4A-807A-A6D8EEBEB113}> and Vejledninger No. 9805, 2014, 9594 2013. LBK nr. 1000 af 30. August, 2015 (2016 level). Vejledning om satser m.v., 2017 (Vej. Nr. 10144 af 16/11/2016), see also table 2.12.

### 2.3.7 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 of 65 conditional on citizenship and time of residence in Denmark.

- **Income test**

Above a threshold of 322,500 DKK per year in her/his own wage earnings income, the benefit is withdrawn with 30 per cent, see table 2.18 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**

74,844 DKK per year in 2018, see also table 2.18 below.

Table 2.18. Income threshold and benefit amount for basic old-age pension, per year, 2014-2018

	2014	2015	2016	2017	2018
Benefit amount	70,896	71,964	72,756	73,920	74,844
Income threshold	301,200	305,700	310,000	316,200	322,500

Source: Lovbekendtgørelse nr. 1005 af 19. august 2010 om social pension.  
<http://www.magnus.dk/Home/Satser/Folkepension.aspx?satsID={03A62931-7087-4D51-8DE8-A8F250DDC8D9}>  
 Sociale Ydelser 2011, Forlaget Forsikring, Hellerup, DK, Vejledning om regulering pr. 1. januar 2014 af satser på Social, Børne og Integrationsministeriets område. VEJ nr. 9017 af 14/01/2014 and Vej. Nr.9805, 24/10/2014, LBK nr. 1000 af 30. August, 2015 (2016 level). Vejledning om satser m.v., 2017 (Vej. Nr. 10144 af 16/11/2016), [www.borger.dk](http://www.borger.dk): Folkepension.

**EUROMOD Notes:** The citizenship and length of residence rules are not implemented in EUROMOD. The increase in pensionable age will be effective from 2019, when those born in 1954 will turn 65.

### 2.3.8 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 65 conditional on citizenship and time of residence in Denmark.

- **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.

Income included in the income test:

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

For a single pensioner in 2018 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 71,200 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 again labour income after labour market contribution. For the partner's (labour) income, half of the income up to 222,800 DKK is deducted beforehand.

For couples, income above a combined basic deduction of 142,800 DKK (2018) 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, 2014-2018

	2014	2015	2016	2017	2018
<b>Singles</b>					
Deduction, own income (DKK)	66,500	67,500	68,400	69,800	71,200
Phase-out rate (%)	30.9	30.9	30.9	30.9	30.9
<b>Couples</b>					
Limit for calc. of spouse-income	208,000	211,100	214,100	218,400	222,800
Deduction, spouse' income (DKK)	133,400	135,400	137,300	140,000	142,800
Phase-out rate (per cent)					
<i>Couples, 1 old-age pensioner</i>	32	32	32	32	32
<i>Couples, 2 old-age pensioner</i>	16	16	16	16	16

Source: Lovbekendtgørelse nr. 1005 af 19. august 2010 om social pension.  
<http://www.magnus.dk/Home/Satser/Folkepension.aspx?satsID=%7b03A62931-7087-4D51-8DE8-A8F250DDC8D9%7d>, Vejledning om regulering pr. 1. januar 2014 af satser på Social, Børne og Integrationsministeriets område. VEJ nr. 9017 af 14/01/2014 and Vej. Nr.9805, 24/10/2014. LBK nr. 1000 af 30. August, 2015 (2016 level). Vejledning om satser m.v., 2017 (Vej. Nr. 10144 af 16/11/2016), see also Table 2.17.

- **Benefit amount**

39,996 DKK for married/cohabitants and 80,736 DKK for singles (in 2018).

Table 2.20. Benefits for old-age pension supplement, per year, 2014-2018 (Danish Kroner).

	2014	2015	2016	2017	2018
Married/cohabitants	35,592	36,516	37,632	38,676	39,996
Singles	73,644	75,132	76,788	78,612	80,736

Source: Vejledning om regulering pr. 1. januar 2014 af satser på Social, Børne og Integrationsministeriets område. VEJ nr. 9017 af 14/01/2014. Vejledning om satser m.v., 2017 (Vej. Nr. 10144 af 16/11/2016), see also Table 2.18.

### 2.3.9 Supplementary pension (ældrecheck/ supplerende pensionsydelse, *poa02\_s*)

- **Definitions**

The unit of analysis is the individual (tu\_individual\_dk)

- **Eligibility conditions**

All old-age pensioners (age $\geq$ 65).

- **Income test**

The benefit is reserved for pensioners with liquid financial assets of less than 84,300DKK (see table below) and is phased-out against labour income above a basic deduction (see personal supplement rate).

Income included in the income test:

+ Wealth

- **Benefit amount**

17,200 DKK per year (see table below).

Table 2.21. Benefit and asset test for supplementary pension, per year, 2014-2018 (Danish Kroner).

	2014	2015	2016	2017	2018
Benefit	16,200	16,400	16,600	16,900	17,200
Asset threshold	80,300	81,500	82,600	84,300	86,000

Source: Lovbekendtgørelse nr. 1005 af 19. august 2010 om social pension.

<http://www.magnus.dk/Home/Satser/Folkepension.aspx?satsID=%7b03A62931-7087-4D51-8DE8-A8F250DDC8D9%7d>, Vejledning om regulering pr. 1. januar 2014 af satser på Social, Børne og

Integrationsministeriets område. VEJ nr. 9017 af 14/01/2014 and Vej. Nr.9805, 24/10/2014. LBK nr. 1000 af 30.

August, 2015 (2016 level). Vejledning om satser m.v., 2017 (Vej. Nr. 10144 af 16/11/2016), see also Table 2.18.

### 2.3.10 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. For own employment income a basic deduction per first of January 2018 of 40,600 DKK applies.

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 20,500 DKK (in 2018) for singles and above 40,600 DKK for married cohabitant couples by 1 percentage point for every 493 DKK (1002 DKK for couples) of other income. See also table below.

Table 2.22. Benefit test for personal supplement rate, per year, 2014-2018.

	2014	2015	2016	2017	2018
Wage income deduction	30,000	30,000	30,000	30,000	30,000
Basic deduction threshold					
Singles	19,100	19,400	19,700	20,100	20,500
Couples	37,900	38,500	39,000	39,800	40,600
Phase-out					
Singles	474	481	487	493	507
Couples	955	969	983	1,002	1,022

Source: Vej. Nr. 81 af 12/11/2012. Vejledning om regulering pr. 1.januar 2013 af satser på Social og Integrationsministeriets område, Vejledning om regulering pr. 1. januar 2014 af satser på Social, Børne og Integrationsministeriets område. VEJ nr. 9017 af 14/01/2014. LBK nr. 1000 af 30. August, 2015 (2016 level), see also table 2.18.

## 2.4 Social 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.

### 2.4.2 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 2.23 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.

Table 2.23. Supplementary labour market pension contributions, 2011-2018

	2011--2015	2016-2018
<b>Monthly contract</b>		
Full time (117h-)	270	284
Part time (78-116h)	180	189.35
Part time (39-77h)	90	94.65
< 39 hours	0	0
<b>Fortnightly contract</b>		
Full time (54h-)	142.20	149.40
Part time (36-53h)	94.80	99.60
Part time (18-36h)	47.40	49.80
< 39 hours	0	0
<b>Weekly contract</b>		
Full time (27h-)	71.10	74.4
Part time (18-26h)	47.50	49.8
Part time (9-17h)	23.70	24.90
< 39 hours	0	0
<b>Hourly paid</b>		
Per hour	1.92	2.01

Source: [www.atp.dk](http://www.atp.dk)

**EUROMOD note:** 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.

### 2.4.3 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 not early retirement benefit scheme. This is increasingly the case.

Table 2.24. Voluntary monthly contribution to unemployment insurance and early retirement scheme, 2014-2018 for full time unemployed insured

	2014	2015	2016	2017	2018
Contribution to unemployment insurance	326	331	334	340	344
Contribution to early retirement scheme	475	482	488	495	502
Sum	801	813	822	835	846

Source: <http://ams.dk/da/Love-og-Regler/Satser/Aktuelle%20satser.aspx>, <http://www.star.dk/da/Love-og-regler/Satser.aspx>. Statser m.v. på arbejdsløshedsforsikringens område 2017, Vejledning om satser mv. på arbejdsløshedsforsikringens område 2018. (vej. Nr. 10268 af 20/12/2017).

- *Random assignment*

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

## 2.5 Personal income tax

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

<b>(1) Gross labour income</b>
- Contributions to occupational based agreed obligatory supplementary pension scheme ( <i>Arbejdsmarkedspension</i> )
+ Transfers
Education grant ( <i>Statens Uddannelsesstøtte</i> )
Unemployment benefits ( <i>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> ); heating subsidy ( <i>varmehjælp</i> ); pensions from the labour market contribution scheme ( <i>ATP-pensioner</i> ); civil servant pensions, incl. pensions to wife and children ( <i>tjenestemandspensioner</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> )

<p>Disability pension (<i>Revalideringsydelse mv.</i>)</p> <p>+ Other incomes</p> <p>+ Gifts</p> <p>+ Alimony received</p> <p>+ Life insurance premiums, fringe benefits</p> <p>- Labour market contribution (txc_s)</p> <p>- Supplementary labour market contribution (tscpiee_s)</p> <p>- Contributions to private pension plans with a ceiling of 105,100 in 2018 (xpp00_s)</p> <p>- Additional deduction of 8% (if more than 15 years to retirement) or 20% (if less than 15 years to retirement) of pension contributions (public and private) up to 70,000 in 2018 (tintaox_s)</p>
<p><b>(2) Personal income (il_PersIncome)</b></p> <p>+ Net capital income</p> <p>- Work-related deductions</p> <p style="padding-left: 20px;">Earned income tax credit</p> <p style="padding-left: 20px;">Transport allowance</p> <p style="padding-left: 20px;">Payments to unemployment funds, unions &amp; early retirement scheme</p> <p style="padding-left: 20px;">Alimony/payments to divorcee's children and ex-partner</p> <p style="padding-left: 20px;">Special occupational deductions (fishermen, etc.)</p> <p style="padding-left: 20px;">Deposit on (company) start-up account</p> <p style="padding-left: 20px;">Gift deductions</p> <p style="padding-left: 20px;">Other employee expenses (over 6,100 kr in 2018)</p>
<p><b>(3) Taxable income (il_tin)</b></p>

**EUROMOD Note:** 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 *iy* – also includes a long range of positive incomes. 3) For commuting distances (forth and back) above 24km, tax payers can deduct standardized expenses (per km and work day). This is not implemented.

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

Table 2.26 General Personal Allowance, 2014-2018 (DKK).

	2014	2015	2016	2017	2018
For persons below 18 years	32,100	32,600	33,200	33,800	34,500
For all other tax payers	42,800	43,400	44,000	45,000	46,000

Source: Lovbekendtgørelse nr. 143 af 8. februar 2011 om indkomstskat for personer mv.  
<http://www.skm.dk/skatteomraadet/talogstatistik/skatteberregning/9757.html>, [www.skm.dk](http://www.skm.dk)

**EUROMOD Notes:** 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.

**2.5.2 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 pensions 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 2018 the earned income tax credit rate was 9.5 %. The maximum value of tax credit is 33,300 DKK per year. In 2014 an extra earned income tax-credit for single providers was introduced with a percentage of 6 in 2018 and maximum value of 21,200. 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 are reported in the table below. From 1<sup>st</sup> of April, 2017 there is also an extra earned income tax-credit for long-term unemployed, having been unemployed or on social benefit for at least 47 weeks in week 48 in 2016. In 2018, an additional credit has been implemented for incomes above 187,500 with a maximum credit of 1,400.

Table 2.27. Earned income tax-credit, per year, 2014-2018 (*Beskæftigelsesfradrag*)

		2014	2015	2016	2017	2018
General credit	Rate	7.65	8.05	8.3	8.75	9.5
	Maximum value	25,000	26,800	28,000	30,000	33,300
Single provider	Sup. Rate	5.4	5.4	5.6	5.75	6.0
	Sup. Max	17,700	17,900	18,800	19,800	21,200
Additional rate	Income above					187,500
	Rate					2.5
	Maximum value					1,400

Source: Forårspakke 2.0 <http://www.magnus.dk/Home/Satser/For%C3%A5rspakke%202.0.aspx?satsID={E8790D81-C617-408E-9702-C1052490623F}>, [www.skm.dk/skattetal/beregning](http://www.skm.dk/skattetal/beregning). Agreement on 12th february 2018: Lavere skat på arbejde og pensionsindbetaling

**EUROMOD Notes:** The extra earned income tax-credit for long-term unemployed is not implemented in EUROMOD as information on the employment situation in the previous year is not available.

**2.5.3 Labour Market Contributions (Arbejdsmarkedsbidrag, txc\_dk)**

- *Tax unit*

The tax unit is 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.

#### 2.5.4 Municipality Tax (Kommuneskat, tmu\_dk):

- **Tax unit**

The tax unit is 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 (%), 2014-2018 (kommuneskat)

	2014	2015	2016	2017	2018
Average	24.9	24.9	24.9	24.9	24.9
Minimum	22.5	22.5	22.5	22.5	22.5
Maximum	27.8	27.8	27.8	27.8	27.8

Source: Skatteministeriet. [http://www.skm.dk/tal\\_statistik/tidsserieoversigter/7794.html](http://www.skm.dk/tal_statistik/tidsserieoversigter/7794.html),  
<http://www.skm.dk/skattetal/satser/kommunal-beskatning/kommuneskatter-gennemsnitsprocenter-2007-2014/>,  
 Accessed the 1<sup>st</sup> December, 2014 and 16<sup>th</sup> December, 2016, 18<sup>th</sup> of January, 2018.

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

#### 2.5.5 Church Tax (Kirkeskat, tcr\_dk):

- **Tax unit**

The tax unit is 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 counties, see table below.

Table 2.29. Distribution of church tax rates, 2014-2018 (%)

	2014	2015	2016	2017	2018
Average rate	0.879	0.878	0.875	0.871	0.886

Source: Danish Ministry of Taxation <http://www.skm.dk/skattetal/satser/kommunal-beskatning/kommuneskatter-gennemsnitsprocenter-2007-2014/>.

- *Random assignment*

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 SILC, the average tax rate is applied.

### 2.5.6 Health Contribution (Sundhedsbidrag, thl\_dk):

- *Tax unit*

The tax unit is 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*

The tax rate is 2% in 2017.

Table 2.30. Health contribution rate, 2014-2018 (%)

	2014	2015	2016	2017	2018
Rate	5	4	3	2	1

### 2.5.7 Bottom Bracket Income Tax (Bundskat, tinbt\_dk):

- *Tax unit*

The tax unit is 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 11.13 per cent in 2018.

Table 2.31. Bottom bracket tax rates (%), 2014-2018 (bundskat).

	2014	2015	2016	2017	2018
Bottom bracket tax	6.83	8.08	9.08	10.08	11.13

Source: Danish Ministry of Taxation [http://www.skm.dk/tal\\_statistik/tidsserieoversigter/7794.html](http://www.skm.dk/tal_statistik/tidsserieoversigter/7794.html). Note rate for 2018 changed in accordance with agreement on the 12<sup>th</sup> of February on lavere skat på arbejde og pensionsindbetaling.

**2.5.8 Top Bracket Tax (Topskat, tinto\_dk):**

- *Tax unit*

The tax unit is 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

From the tax year 2010, a basic yearly allowance of 40,000 dkr (43,800 in 2018) was introduced 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 87,600 DKK (in 2018) are taxed with the top-bracket tax rate.

- *Tax Schedule*

Table 2.32. Top bracket tax rates and allowances, 2014-2018

	2014	2015	2016	2017	2018
Top bracket tax rate	15.0	15.0	15.0	15.0	15.0
Top bracket tax allowance	449,100	459,200	467,300	479,600	498,900
Allowance in positive net capital income	40,800	41,400	41,900	42,800	43,800

Source: Danish Ministry of Taxation. <http://www.skm.dk/skatteomraadet/talogstatistik/skatteberregning/9796.html?rel>  
 Allowance in positive net is for unmarried (double for married couple)

The sum of municipal, health, bottom, middle and top tax should not exceed 52.02 % in 2018. If the tax ceiling is reached, the top bracket income tax is reduced accordingly. In the average municipality this means a reduction of between 0.11 % to 15.03% in 2018.

Table 2.33. Tax ceiling, 2014-2018

	2014	2015	2016	2017	2018
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Tax ceiling	51.7	51.95	51.95	51.95	52.02
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### 2.6 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 1% up to a property value of 3,040,000 DKK and a tax rate of 3 percent above that threshold. The threshold has been frozen nominally since 2002.

**EUROMOD Notes:** 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

The Danish module of EUROMOD uses data from the European Union Statistics on Income and Living Conditions (EU-SILC) provided by Eurostat and contains almost 14,000 individuals from around 6,000 households. The sampling is representative of all private households in Denmark.

Table 3.1 EUROMOD database description

EUROMOD database	DK_2016_a2
Original name	UDB_c16_release_18-03
Provider	Statistics Denmark
Year of collection	2016
Period of collection	March-June (interview part)
Income reference period	2015 (calendar year)
Sampling	Random probability sampling
Unit of assessment	Households
Coverage	Private households
Sample size	6,288 households (13,821 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 SILC is based on a sample of persons/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 15,000 private households to the final sample of about 6,000 households in the Danish part of the UDB EU-SILC 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.

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, 99<sup>th</sup> 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

	<b>DB090</b>	<b>RB050</b>	<b>PB040</b>	<b>PB060</b>
Number	13846	13846	11758	6288
Mean	408.63	408.63	394.59	737.85
Median	339.13	339.13	318.25	589.59
Minimum	18.13	18.13	18.13	41.71
Maximum	4687.24	4687.24	4687.24	5881.21
Max/Min	258.50	258.50	258.50	141.00
Decile 1	142.47	142.47	137.50	304.47
Decile 9	732.67	732.67	721.08	1289.78
Deci 9 / Deci 1	5.14	5.14	5.24	4.24

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 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 (unit is months per year):

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

### 3.3.2 Income Tax and SIC - *tis*

7,533 observations were missing and all were recoded to 0 (zero).

## 3.4 Imputations and assumptions

### 3.4.1 Time period

The used EU-SILC data for 2016 is based on survey data from interviews conducted March-June 2016 combined with registry data from the calendar year 2015 on incomes, dwelling information 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

UDB variables sum up single benefits into aggregate amounts by transfer area. However, single benefit variables are important for EUROMOD especially in cases where some of the benefits cannot be simulated and benefit amounts need to be taken from the data. The specific disaggregation used for Denmark is explained in this section.

Various forms of public pension transfers as well as income from private pension schemes are recorded in the UDB-variable PY100G. We make use of the variables py102-py104 together with other characteristics for the disaggregation:

- The basic old-age pension (poa00) is imputed from py104g.

- The pension supplement (poa01) is imputed using py103g together with age as well as own and partner income.
- The residual of py103 is defined as heating aid for pensioners (poaot).
- The supplementary pension benefit (poa02) is included in poa01 and thus, not further disaggregated.
- The supplementary labour market pension (poa03) is imputed from py102g together with external information on average incomes of this type and assumptions on lifetime work history.
- The residual of py102g is recorded as payments from private pension schemes. It will however be an amalgam of civil servant pensions, income from private pension plans, pensions from previous employers, capital pension disbursements and foreign pensions.

A tax free child family grant varying by age of child (bfachnm) is imputed based on age of child and isolated from other child benefits (bfach00 and bfached) in the family/children related allowances (HY050G/bfa). Residual child-related benefits are saved in bfachot.

Housing allowances (HY070G) 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 in 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 variable py090g (bun) also includes the green check as well as social assistance benefits. The disaggregation again makes use of the py092g-py094g variables together with other characteristics:

- The unemployment benefit (bunct) is disaggregated using py092g together with an age condition.
- Benefits of recipients above the age condition are attributed to voluntary early retirement (pyr).
- The green check (bhtuc) is disaggregated using py093g together with the policy rules for receiving the benefit.
- The remainder of py093g is furthermore splitted into the main social assistance benefit (bsa) by simulating the benefit in STATA and other social assistance benefits (bsaot).
- Py094g is defined as benefits for partially disabled (bunot).

As EU-SILC does not contain information on the value of owned property, the value of property owned (aiv) is imputed from the paid property taxes.

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 used to be part of PY022g and are now included in HY050g.

### 3.6 Updating factors

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

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

## 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 2. 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 <sup>1</sup>	-	-
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

The number of employed as well as unemployed in the SILC-data compares quite well with external information, see table 4.2 in Annex 2, and is close to equal in 2015. Differences might be due to EM-figures being number of employed and unemployed based on months in employment/unemployment. Numbers are computed as averages of monthly data over the year. In contrast, the external figures are an inventory as of end of November. As employment typically spans over longer periods than unemployment, the inventory in

November of employed and unemployed will match the computation of month spend in employment/unemployment better for employment than for unemployment.

Tables 4.3 and 4.4 compare with external statistics the number of people and the aggregated amount of a number of market income components of market income. Employment income is well captured by SILC data both in terms of number of recipients and aggregated amount. Both the number of people receiving income from self-employment and the aggregated amount of self-employment income appear to be over-reported in SILC when compared with external statistics, although the amount matches the external statistics more precisely. 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 aggregated amount of investment income, which is severely 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 poor matching.

Recipients of non-simulated benefits are over-represented in EU-SILC in a number of cases (see Table 4.5 in Annex 2). This is especially true for sickness benefit but also for early retirement benefits and disability pension. In both cases EUROMOD counts as a recipient all the individuals receiving these benefits at least once during the year, while external statistics are based on full time equivalents. Aggregated amounts of these benefits are relatively close to external statistics with the exception of education benefits (see Table 4.6 in Annex 2).

### 4.1.3 Validation of outputted (simulated) incomes

For the benefits, taxes and social contributions that are simulated by EUROMOD, cf. Table 4.7 and 4.8 in Annex 2, there is a relatively good fit. 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. However, the aggregated simulated amount is very close to the external statistic.

The overestimation both in the number of recipients and mainly in the aggregate amount of social assistance is likely to be driven both by limitations in our simulation, which cannot control for the requirement of experiencing particularly stressful events, as well as by issues such as benefit non take up. Furthermore, the criteria for receiving social assistance can imply a reduction in the amount, and thus if increasing number have the right to social assistance, but receives a lower amount this can help in explaining the differences.

## 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 are 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 under 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 overall the EUROMOD estimates fit rather well with the income distribution, this is especially true for the mean and median income. However, the over-simulation of the social assistance benefit leads to a 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 4.10). There is an underestimation using the 40 % median HDI and for 65+ years of age in the 60 % of median HDI. The discrepancy can be due to the relatively small amount of people falling in these categories. For those above the age of 65 a possible explanation might be that there has been an increase in the number of elderly having occupational based pension, which raises some old people just above the HDI 60 % poverty line. Quite a proportion of pensioners are located just below this poverty threshold.

### 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 tax-evasion in Denmark, but this is also at a relatively 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. Approximately 40 per cent of all potential tax payers paid the property tax in 2007, according to external statistics from Statistics Denmark. The tax rate is on average 0.25% of the land value – with a land value of, on average 300,000 (rough calculation from combination of various statistics), this makes a negligible amount of 750 DKK per year.

The transferability of tax allowances between spouses in various simulated taxes (i.e. health contribution, etc.) is implemented by reducing the tax base of the spouse whose taxable income is above the allowance by an amount equal to the unused allowance of the other spouse. As it is the case for the Danish tax-benefit system, reducing the tax base is equivalent to increase the tax allowance in case the applicable tax is flat (e.g. there is only one tax rate above the allowance). However, the user should be aware of the current behaviour of the model if s(he) want to introduce a reform which makes taxation (i.e. health contribution) progressive by adding a new tax band for incomes above a given threshold.

For simplicity, assume we have two spouses, one with no taxable income ( $Y1=0$ ) and the other with taxable income above his/her allowance plus the unused personal allowance of the spouse ( $Y2>A2+A1$ ). In a flat tax setting, the poorest spouse will pay no tax since s(he) has income below the allowance ( $T1=0$ ). The richest spouse tax liability will be equal to  $(Y2-A2-A1)*t1$ , where  $t1$  is the flat tax rate. In this setting, which is the one currently in place in Denmark, reducing the tax base of the second spouse is equivalent to increase his/her tax allowance.

In case a reform would make the tax progressive by introducing a new tax rate  $t2$  for income above a threshold  $C$  (for simplicity we assume  $C<Y2-A1$ ), under the current implementation the “rich” spouse would

pay  $(Y2-A1-C)*t2+(C-A2)*t1$ . Alternatively, the user might want to increase the personal allowance of the “rich” spouse instead of decreasing his/her tax base. In this case s(he) would pay  $(Y2-C)*t2+(C-A1-A2)*t1$ . In the first scenario the gain from the transfer of the unused allowance would hence be  $A1*t2$ , while it would be equal to  $A1*t1$  in the second scenario.

Different from other EU-SILC countries, Denmark includes a relatively high number of observations with negative investment income. In Denmark, windfall gains and losses on stocks are taxed the same 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 transfer negative net capital income can be used to reduce the tax burden.

In Denmark, maternity and parental leave benefits are recorded as part of the employment and self-employment income variable.

### 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 modeling 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/](http://www.skm.dk/foreign/)
- + The central legal information: <https://www.retsinformation.dk/>
- + The Ministry of Children and Social Affairs: <http://www.sm.dk/Sider/Start.aspx>
- + The Ministry for Employment: <http://bm.dk/>
- + The citizens’ entry point for information on public benefits etc., [www.borger.dk](http://www.borger.dk)
- + Wolters Kluwer information gateway to Danish law statutes: [www.magnus.dk](http://www.magnus.dk).

## ANNEX 1 - UPRATING FACTORS

Table A1.1 Uprating factor values and sources, 2014-2018

Index	Reference	2014	2015	2016	2017	2018	Source
Harmonised CPI (2005=100)	\$HICP	99.8	100	100	101.4	101.9	Source: EUROSTAT, annual average, AMECO for this year's forecast
Consumer Price Index (2015=100)	\$f_cpi	99.7	100.3	100.6	101.3	102.3	Source: STATBANK (PRIS111 - June values)
Indices of average earnings in Corporations and Organizations (2005=100)	\$f_earnings	125.4	127.1	129.4	131.4	134.0	Source: STATBANK (ILON12- Quarter 1, seasonally adjusted)
Lagged indices of average earnings in Corporations and Organizations (2005=100)	\$f_earningsLag	124.1	125.4	127.1	129.4	131.4	Source: STATBANK (ILON12- Quarter 1, seasonally adjusted), lagged by 1 year
Share index (at the end of period)	\$f_share	610	737	743	813	823	Source: STATBANK (MPK13-June values)
No uprating	\$f_none	1	1	1	1	1	
Adjustment of rates index (Satsreguleringsprocenten 2007=100)	\$f_index	117.9	119.4	120.8	122.8	125.0	Own calculation based on <a href="http://www.modst.dk/OEAV/2-Bevillingslove/25-Indeks/251-Fastprisberegninger">http://www.modst.dk/OEAV/2-Bevillingslove/25-Indeks/251-Fastprisberegninger</a> , Satsreguleringsprocenten (adjustment of rates index)
Rent Index from CPI (2015=100)	\$f_rent	98.3	100.2	101.5	103.1	104.3	Source: STATBANK (PRIS111, 4.1 Actual rentals for housing - June values)

### ANNEX 2 - POLICY EFFECTS IN 2017-18

Table 1 and Figure 1 show the effect of 2018 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 2018 tax-benefit policies (deflating monetary parameters by Eurostat's Harmonized Index of Consumer Prices, HICP<sup>2</sup>) and net incomes simulated under 2017 policies, as a percentage of mean equivalised household disposable income in 2017.

The total effect of (deflated) 2018 policies on mean income is relatively small (0.59%). No major reforms have taken place from 2017 to 2018, albeit the introduction of an additional deduction of private pension contributions and savings and the supplement in the earned income tax credit for income above 187.500DKK. These two measures decrease the direct taxes in all income deciles, with the exception of the second decile. The changes in direct taxation benefit mostly the upper part of the income distribution. On the contrary, lower deciles gain mostly by the increase in public pension, as indexation of pension was higher than growth in HICP. The larger effect at the bottom of the income distribution could reflect where most of pensioners are located.

On the side of benefit, there is a small decrease in means-tested benefit (-0.04%) and a slightly increase (mainly for the first decile) in non means-tested benefit (+0.04%).

Therefore, increases in income are mostly due to the annual increase of pension payments as well as the changes in direct taxation.

Changes by income groups show a mixed pattern with households at the bottom decile having the lowest increase whereas decile 2 and 9 have the highest increase. The increase of income groups in the lower deciles mainly based on an increase in public pensions, whereas for those with higher income it is the changes in the direct taxes.

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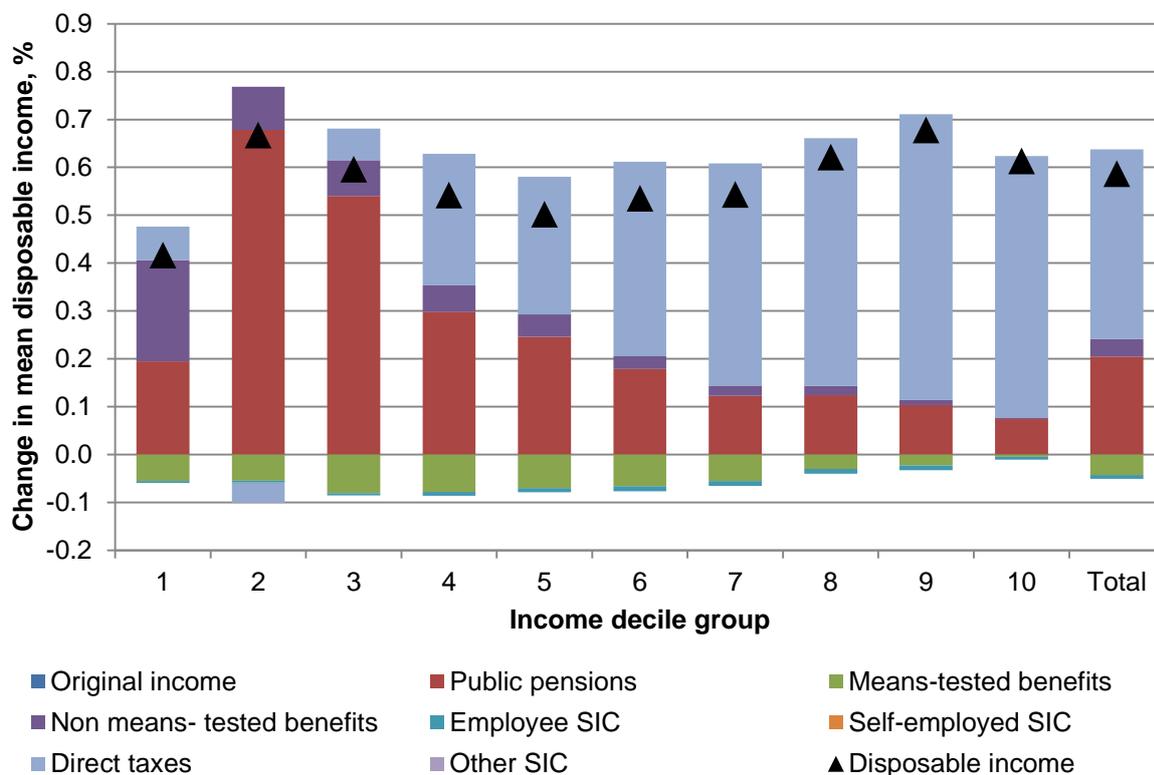
<sup>2</sup> Annual average retrieved from Eurostat website, AMECO forecast for 2018 data.

Table 1. Policy effects in 2017-2018, using the HCPI-indexation, %

Decile	Original income	Public pensions	Means-tested benefits	Non means-tested benefits	Employee SIC	Self-employed SIC	Other SIC	Direct taxes	Disposable Income
1	0.00	0.20	-0.06	0.21	0.00	0.00	0.00	0.07	0.42
2	0.00	0.68	-0.05	0.09	0.00	0.00	0.00	-0.04	0.67
3	0.00	0.54	-0.08	0.07	0.00	0.00	0.00	0.07	0.60
4	0.00	0.30	-0.08	0.06	-0.01	0.00	0.00	0.27	0.54
5	0.00	0.25	-0.07	0.05	-0.01	0.00	0.00	0.29	0.50
6	0.00	0.18	-0.07	0.03	-0.01	0.00	0.00	0.41	0.54
7	0.00	0.12	-0.06	0.02	-0.01	0.00	0.00	0.46	0.54
8	0.00	0.12	-0.03	0.02	-0.01	0.00	0.00	0.52	0.62
9	0.00	0.10	-0.02	0.01	-0.01	0.00	0.00	0.60	0.68
10	0.00	0.07	0.00	0.00	-0.01	0.00	0.00	0.55	0.61
<b>Total</b>	<b>0.00</b>	<b>0.20</b>	<b>-0.04</b>	<b>0.04</b>	<b>-0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.40</b>	<b>0.59</b>

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 2017, using the modified OECD equivalence scale. Each policy system has been applied to the same input data, deflating monetary parameters of 2018 policies by Eurostat’s Harmonized Index of Consumer Prices (HICP).

Figure 1: Policy effects in 2017-2018, using the HCPI-indexation, %



**ANNEX 3 - VALIDATION TABLES**

**Table 4.2-Number of employed and unemployed**

	<b>EUROMOD</b>	<b>External</b>				<b>Ratio</b>			
	<b>2015</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
Number of employed	2,639	2,680	2,748	2,748	2,735	0.98	0.96	0.96	0.96
Number of unemployed	166	180	186	186	171	0.92	0.89	0.89	0.97

Source: StatBank(AKU101), accessed the 22nd of February, 2018

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

	EUROMOD	External				Ratio			
	2015	2015	2016	2017	2018	2015	2016	2017	2018
Employment income	2,994	2,942	2,990	3,030	N/A	1.02	1.00	0.99	N/A
Self-employment income	945	422	422	422	422	2.24	2.24	2.24	2.24
Investment income	1,776	3,163	3,163	3,163	3,163	0.56	0.56	0.56	0.56
Private Pensions	800	829	851	874	N/A	0.96	0.94	0.91	N/A
Rent income	91	2,787	2,447	2,351	N/A	0.03	0.04	0.04	N/A
Other Incomes	142	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Privat Transfers	149	154	151	146	N/A	0.97	0.99	1.02	N/A

Source: StatBank (INDKP101). Accessed 2 October 2018

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

	EUROMOD				External				Ratio			
	2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018
Employment income	936,761	953,712	969,190	983,193	911,429	940,351	971,249	N/A	1.03	1.01	1.00	N/A
Self-employment income	65,725	66,914	68,000	68,983	65,352	65,359	74,804	N/A	1.01	1.02	0.91	N/A
Investment income	60,373	60,865	66,599	66,517	63,226	60,297	61,962	N/A	0.95	1.01	1.07	N/A
Private Pensions	79,400	79,638	80,113	80,509	82,517	86,030	89,482	N/A	0.96	0.93	0.90	N/A
Rent income	1,170	1,185	1,204	1,218	7,784	6,421	5,259	N/A	0.15	0.18	0.23	N/A
Other Incomes	2,211	2,251	2,287	2,320	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Privat Transfers	3,608	3,673	3,733	3,787	2,956	2,869	2,863	N/A	1.22	1.28	1.30	N/A
Average employment income	312,931	318,594	323,764	328,442	309,841	N/A	N/A	N/A	1.01	N/A	N/A	N/A

Source: StatBank (INDKP101), accessed 2 October 2018

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

	EUROMOD		External			Ratio			
	2015	2015	2016	2017	2018	2015	2016	2017	2018
<b>Benefits</b>									
Supplementary labour market pension	1,014	949	977	1,004	N/A	1.07	1.04	1.01	N/A
Other old-age benefits	158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Disability pension	259	216	208	203	N/A	1.20	1.24	1.28	N/A
Education benefit	557	473	479	477	N/A	1.18	1.16	1.17	N/A
Survivors' help	38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sickness benefit	291	201	199	199	N/A	1.45	1.46	1.46	N/A
Early retirement benefit	149	116	104	91	N/A	1.28	1.43	1.63	N/A
Other unemployment benefits	44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other social assistance benefits	467	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other family benefits	206	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: StatBank (INDKP101, AUH04), accessed 2 October 2018

**Table 4.6-Tax benefit instruments included but not simulated in EUROMOD-Annual amounts (in mil.)**

	EUROMOD				External				Ratio			
	2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018
<b>Benefits</b>												
Supplementary labour market pension	12,868	13,018	13,234	13,450	13,183	13,984	14,565	N/A	0.98	0.93	0.91	N/A
Other old-age benefits	1,217	1,232	1,252	1,273	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Disability pension	42,976	43,480	44,199	44,919	41,241	40,512	N/A	N/A	1.04	1.07	N/A	N/A
Education benefit	26,803	27,117	27,566	28,015	19,818	19,636	19,963	N/A	1.35	1.38	1.38	N/A
Survivors' help	2,787	2,819	2,866	2,913	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sickness benefit	9,941	10,058	10,224	10,391	10,814	10,697	10,469	N/A	0.92	0.94	0.98	N/A
Early retirement benefit	16,115	16,304	16,573	16,843	14,520	13,425	12,126	N/A	1.11	1.21	1.37	N/A
Other unemployment benefits	4,255	4,305	4,376	4,447	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other social assistance benefits	12,128	12,270	12,473	12,676	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other family benefits	1,155	1,169	1,188	1,207	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: StatBank (INDKP101, Statistisk 10 års oversigt, 2017)

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

	EUROMOD				SILC	Ratio	External				Ratio			
	2015	2016	2017	2018	2015	2015	2015	2016	2017	2018	2015	2016	2017	2018
<b>Benefits</b>														
Ord. & suppl. child benefit	190	190	190	190	152	1.25	198	194	N/A	N/A	0.96	0.98	N/A	N/A
Benefit for student parents	2	2	2	2	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Child family grant	1,147	1,146	1,146	1,146	659	1.74	951	951	N/A	N/A	1.21	1.21	N/A	N/A
Housing benefit	706	700	666	656	443	1.59	248	236	234	N/A	2.85	2.97	2.85	N/A
Housing grant	238	237	221	223	211	1.13	283	284	282	N/A	0.84	0.84	0.78	N/A
Green check	3,527	3,515	3,530	3,542	3,586	0.98	3,594	3,601	3,631	N/A	0.98	0.98	0.97	N/A
Social assistance	217	216	214	214	111	1.96	242	214	246	N/A	0.89	1.01	0.87	N/A
Unemployment benefit	331	331	331	331	331	1.00	275	259	256	N/A	1.21	1.28	1.29	N/A
Old age pension	1,077	1,077	1,077	1,077	1,058	1.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Old age pension supplement	1,036	1,036	1,037	1,038	896	1.16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Old age pension and supplement	1,077	1,077	1,077	1,077	N/A	N/A	1,075	1,098	1,119	N/A	1.00	0.98	0.96	N/A
Supplementary pension benefit	282	282	282	284	225	1.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Taxes and Social Insurance contributions</b>														
Church tax	3,470	3,470	3,470	3,468	N/A	N/A	3,405	3,417	N/A	N/A	1.02	1.02	N/A	N/A
Health contribution	4,372	4,372	4,370	4,368	N/A	N/A	4,357	4,404	N/A	N/A	1.00	0.99	N/A	N/A
Earned income tax credit	3,213	3,213	3,213	3,221	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom-bracket tax	4,374	4,374	4,373	4,372	N/A	N/A	4,374	4,415	N/A	N/A	1.00	0.99	N/A	N/A
Top-bracket tax	583	582	561	507	N/A	N/A	495	509	N/A	N/A	1.18	1.14	N/A	N/A
Municipality tax	4,372	4,372	4,370	4,368	N/A	N/A	4,324	4,369	N/A	N/A	1.01	1.00	N/A	N/A
Property value tax	1,546	1,546	1,546	1,546	N/A	N/A	2,109	2,121	N/A	N/A	0.73	0.73	N/A	N/A
Labour market contribution	3,221	3,221	3,221	3,221	N/A	N/A	3,075	3,102	3,150	N/A	1.05	1.04	1.02	N/A
Suppl. lab. market contrib.	2,687	2,687	2,687	2,687	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Contr. to unempl.insurance and early retirement scheme	1,834	1,834	1,834	1,834	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: StatBank (BTS66, BOSST22, BOST44, INDKP1, INDKP101, PSKAT1, PSKAT2, PSKAT3)

**Table 4.8-Tax benefit instruments simulated in EUROMOD-Annual amounts (Mil.)**

	EUROMOD				SILC	Ratio	External				Ratio			
	2015	2016	2017	2018	2015	2015	2015	2016	2017	2018	2015	2016	2017	2018
<b>Benefits</b>														
Ord. & suppl. child benefit	1,762	1,787	1,823	1,851	1,665	1.06	1,781	1,780	N/A	N/A	0.99	1.00	N/A	N/A
Benefit for student parents	8	8	8	8	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Child family grant	14,320	14,394	14,458	14,519	13,623	1.05	12,222	12,279	N/A	N/A	1.17	1.17	N/A	N/A
Housing benefit	8,789	8,536	8,061	7,956	4,863	1.81	3,847	3,400	3,439	N/A	2.28	2.51	2.34	N/A
Housing grant	7,110	7,054	6,475	6,550	5,599	1.27	9,831	10,080	10,170	N/A	0.72	0.70	0.64	N/A
Green check	3,879	3,766	3,736	3,215	4,008	0.97	4,122	4,110	4,107	N/A	0.94	0.92	0.91	N/A
Social assistance	21,868	22,084	22,293	22,565	10,861	2.01	14,057	14,317	15,273	N/A	1.56	1.54	1.46	N/A
Unemployment benefit	14,660	14,859	15,128	15,373	14,660	1.00	15,567	14,577	15,085	N/A	0.94	1.02	1.00	N/A
Old age pension	76,845	77,677	78,927	79,923	74,717	1.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Old age pension supplement	55,538	56,929	58,380	60,135	41,100	1.35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Old age pension and supplement	132,383	134,607	137,308	140,059	N/A	N/A	124,383	128,080	N/A	N/A	1.06	1.05	N/A	N/A
Supplementary pension benefit	3,790	3,847	3,929	4,020	3,080	1.23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Taxes and Social Insurance contributions</b>														
Church tax	7,452	7,536	7,621	7,768	N/A	N/A	6,133	6,304	N/A	N/A	1.22	1.20	N/A	N/A
Health contribution	43,611	33,188	22,479	11,265	N/A	N/A	35,805	27,923	N/A	N/A	1.22	1.19	N/A	N/A
Earned income tax credit	60,309	63,128	67,600	77,967	N/A	N/A	59,899	63,457	N/A	N/A	1.01	0.99	N/A	N/A
Bottom-bracket tax	90,309	103,189	116,624	130,223	N/A	N/A	83,982	97,073	N/A	N/A	1.08	1.06	N/A	N/A
Top-bracket tax	26,347	26,706	27,182	26,357	N/A	N/A	16,437	16,957	N/A	N/A	1.60	1.57	N/A	N/A
Municipality tax	271,476	275,463	279,860	280,508	N/A	N/A	221,712	229,989	N/A	N/A	1.22	1.20	N/A	N/A
Property value tax	13,765	13,884	15,305	15,284	N/A	N/A	13,627	13,891	N/A	N/A	1.01	1.00	N/A	N/A
Labour market contribution	80,199	81,650	82,975	84,174	N/A	N/A	76,846	79,071	81,670	N/A	1.04	1.03	1.02	N/A
Suppl. lab. market contrib.	7,185	7,558	7,558	7,558	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Contr. to unempl.insurance and early retirement scheme	17,248	17,439	17,715	17,948	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: StatBank (BTS66, BOSST22, BOST44, INDKP1, INDKP101, PSKAT1, PSKAT2, PSKAT3)

**Table 4.9-Distribution of equivalised disposable income**

	EUROMOD				External				Ratio			
	2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018
D1	4.28	4.27	4.23	4.22	3.30	3.30	N/A	#N/A	1.30	1.29	N/A	#N/A
D2	6.08	6.10	6.02	6.02	5.70	5.70	N/A	#N/A	1.07	1.07	N/A	#N/A
D3	6.93	6.89	6.90	6.89	6.70	6.70	N/A	#N/A	1.03	1.03	N/A	#N/A
D4	7.76	7.76	7.72	7.71	7.60	7.60	N/A	#N/A	1.02	1.02	N/A	#N/A
D5	8.55	8.57	8.56	8.55	8.40	8.50	N/A	#N/A	1.02	1.01	N/A	#N/A
D6	9.56	9.50	9.52	9.52	9.40	9.40	N/A	#N/A	1.02	1.01	N/A	#N/A
D7	10.48	10.54	10.52	10.51	10.50	10.50	N/A	#N/A	1.00	1.00	N/A	#N/A
D8	11.67	11.65	11.66	11.70	11.70	11.80	N/A	#N/A	1.00	0.99	N/A	#N/A
D9	13.23	13.25	13.26	13.28	13.50	13.60	N/A	#N/A	0.98	0.97	N/A	#N/A
D10	21.46	21.47	21.60	21.60	23.20	22.90	N/A	#N/A	0.92	0.94	N/A	#N/A
Median	211,934	215,339	218,898	222,721	213,803	218,764	N/A	#N/A	0.99	0.98	N/A	#N/A
Mean	233,441	237,033	241,143	245,355	239,733	244,147	N/A	#N/A	0.97	0.97	N/A	#N/A
Gini	24.51	24.57	24.78	24.83	27.70	27.60	N/A	#N/A	0.88	0.89	N/A	#N/A
S80/S20	3.35	3.35	3.40	3.41	4.10	4.10	N/A	#N/A	0.82	0.82	N/A	#N/A

Source: Eurostat, ilc\_di01, accessed the 27th February 2018

**Table 4.10-Poverty rates by gender and age**

	EUROMOD				External				Ratio			
	2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018
<b>40% median HDI</b>												
Total	2.23	2.55	2.59	2.67	4.00	4.10	N/A	#N/A	0.56	0.62	N/A	#N/A
Males	2.18	2.66	2.66	2.76	3.90	4.60	N/A	#N/A	0.56	0.58	N/A	#N/A
Females	2.27	2.44	2.51	2.58	4.00	3.70	N/A	#N/A	0.57	0.66	N/A	#N/A
<b>50% median HDI</b>												
Total	4.57	4.59	4.90	5.02	6.80	7.20	N/A	#N/A	0.67	0.64	N/A	#N/A
Males	4.97	4.99	5.20	5.44	7.40	8.30	N/A	#N/A	0.67	0.60	N/A	#N/A
Females	4.17	4.19	4.60	4.60	6.30	6.20	N/A	#N/A	0.66	0.68	N/A	#N/A
<b>60% median HDI</b>												
Total	9.93	9.99	10.22	10.24	11.90	12.40	N/A	#N/A	0.83	0.81	N/A	#N/A
Males	10.05	10.19	10.25	10.27	12.00	13.10	N/A	#N/A	0.84	0.78	N/A	#N/A
Females	9.80	9.80	10.20	10.21	11.90	11.70	N/A	#N/A	0.82	0.84	N/A	#N/A
<b>70% median HDI</b>												
Total	17.57	17.87	18.10	18.19	20.30	20.50	N/A	#N/A	0.87	0.87	N/A	#N/A
Males	17.07	17.21	17.34	17.44	19.90	21.10	N/A	#N/A	0.86	0.82	N/A	#N/A
Females	18.07	18.53	18.86	18.92	20.70	19.80	N/A	#N/A	0.87	0.94	N/A	#N/A
<b>60% median HDI</b>												
0-15 years	9.22	9.22	9.89	9.89	9.90	10.20	N/A	#N/A	0.93	0.90	N/A	#N/A
16-24 years	26.47	26.94	27.05	27.05	30.90	31.40	N/A	#N/A	0.86	0.86	N/A	#N/A
25-49 years	10.20	10.20	10.52	10.63	12.00	12.60	N/A	#N/A	0.85	0.81	N/A	#N/A
50-64 years	4.86	4.90	4.98	4.89	5.80	6.20	N/A	#N/A	0.84	0.79	N/A	#N/A
65+ years	5.25	5.27	5.15	5.15	8.50	8.70	N/A	#N/A	0.62	0.61	N/A	#N/A

Source: Eurostat