

EUROMOD

COUNTRY REPORT



DENMARK (DK)

2009 - 2013

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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 has been enlarged to cover 27 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.

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

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The results presented in this report are derived using EUROMOD version G2.0. 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: <http://www.iser.essex.ac.uk/research/euromod>

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This programme is managed by the Directorate-General for Employment, Social Affairs and Inclusion of the European Commission. It was established to finally support the implementation of the objectives of the European Union in the employment and social affairs area, as set out in the Social Agenda, and thereby contribute to the achievement of the Lisbon Strategy goals in these fields.

The seven-year Programme targets all stakeholders who can help shape the development of appropriate and effective employment and social legislation and policies, across the EU-27, EFTA-EEA and EU candidate and pre-candidate countries.

PROGRESS mission is to strengthen the EU contribution in support of Member States' commitment. PROGRESS is instrumental in providing analysis and policy advice on PROGRESS policy areas; monitoring and reporting on the implementation of EU legislation and policies in PROGRESS policy areas; promoting policy transfer, learning and support among Member States on EU objectives and priorities; and relaying the views of the stakeholders and society at large

For more information see: <http://ec.europa.eu/progress>

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. Municipalities, but not regions, have a possibility of setting the local income and property tax.
- The Fiscal Year is from the 1st of January to the 31th 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 typically paid to the mother.
- 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.
- 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.
- Both benefits and deductions in the tax system are 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 are above 2 % points up to 0.3 % will be deducted to a specific pool of money that can be used to 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. Benefit level varies with age, provider status and by whether recipient is living with parents. This is means-tested against both own and spouses' income and wealth, and is reduced after 6 month.

Unemployment benefits (*Dagpenge*): UB are insurance-based, but subsidized. Set at 90 per cent of previous labour income, but with 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 a 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 single and 80% when having responsibility for a child under the condition that they participate in some kind of education. The total length can although not exceed four years.

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 working hours before (full time/part time), but also the option of working a number of hours and receiving sickness benefits for other hours. In principle benefits is available for a maximum of 52 weeks within 18 months.

Education grant (*Statens Uddannelsesstøtte, SU*): Given to students in validated branches of study. Benefit levels vary by age, type of education and place of living (with parents/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, pensioner 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 discarded. The benefit is taxable. Benefit varies with marital status. Phased out against own and spouses' 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.

Old-age pension (*Folkepension*): Given after age of 65. Benefit level varies with marital status. The benefit is phased out against own labour income.

Old-age pension supplement (*Pensionstillæg*): Given after age of 65. Benefit level varies with marital status. The benefit is phased out against both own and a spouses labour 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 month receive a survivors' benefits 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 78,900 Dkr. (in 2013).

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.

- *Not strictly benefits*

Flex-job (*Fleksjob*): May be granted to employees with permanent disabilities below 40 years of age for a time of 5 years (removable). The recipient works an agreed number of hours which is paid by the employer. This will be supplemented with a benefit from the municipality. 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 which contribute to the accrument 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 extend of work (full-/part-time). Paid by employee (one-third of rate) and employer (two-third of rate).

Unemployment benefit contribution (*A-kasse-bidrag*): Required for eligibility to unemployment benefits (see above). Conditional upon union membership. Rates vary across unemployment insurance funds. Deductable in taxable income.

Early retirement pension scheme contribution (*Efterlønsbidrag*): Required for eligibility for early retirement pension scheme (see above). Conditional upon union membership. Deductable in taxable income.

1.4 Taxes

Labour market contribution (*Arbejdsmarkedetsbidrag*): A tax of 8 per cent 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, with a maximum allowance.

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 counties (0.41-1.50 per cent) and levied upon the taxable income base after subtracting the general personal allowance.

Health contribution (*Sundhedsbidrag*): A tax of 6 per cent in 2013, 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 5,83 % in 2013. Levied upon the sum of the personal income tax base and positive 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.

Medium-bracket tax (*Mellemskat*): The middle of the three progressive state taxes. Tax rate of 6%. Levied upon the sum of the personal income tax base and positive net capital income, with the middle bracket tax allowance subtracted. Spouses can transfer negative net capital income and any unused middle-bracket tax allowance. The middle-bracket tax has been abolished from the tax year 2010.

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 subtracted. From the tax year 2010, a basic yearly allowance of 40.000 dkr. for the inclusion of positive net capital income is introduced.

Tax ceiling (*Skatteloft*): A ceiling at the level of 51.5% (59% before 2010) 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, are taxed for 2.500 dkr. in the personal income tax base.

Shares tax (*Aktieskat*): Net income from shares (share profits, dividends and premiums, minus losses) is taxed progressively below/above 45.500 dkr. (in 2007). In 2008 and 2009 an additional progressivity threshold was introduced, which has been abolished from tax year 2010 on.

Property value tax (*Ejendomsværdiskat*): A progressive state tax on the overall value of property, based on the official/public property valuation. 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, 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.

Gift tax (*Gaveafgift*): Gifts are taxed with 0%, 15% or 36,25% for a spouse, near relatives or more distant relatives as recipients.

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(s)	Treatment in EUROMOD							Why not fully simulated?
		2007	2008	2009	2010	2011	2012	2013	
Unemployment benefits	bunct_s	PS	PS	PS	PS	PS	PS	PS	No data on unemployment history; Previous earnings inferred from unemployment benefit received.
Sickness benefits	bhl	I	I	I	I	I	I	I	No data on health status.
Social Assistance	bsa_s	S	S	S	S	S	S	S	No data on length of stay in Denmark. No data on background for reduced rates for youth (<25).
Education grant	bed	I	I	I	I	I	I	I	
Child Family Grant	bfachnm_s	S	S	S	S	S	S	S	
Ordinary Child Benefit & supplement	bfach00_s	S	S	S	S	S	S	S	
Child benefit for student parents	bfached_s	S	S	S	S	S	S	S	
Child benefits for twins etc. & adoptions	-	I	I	I	I	I	I	I	Rare benefit.
Child support	-	E	E	E	E	E	E	E	No information on parents outside household.
Disability pension	pdi	I	I	I	I	I	I	I	No impartial information on ability to work
Housing benefit	bho01_s	S	S	S	S	S	S	S	
Housing grant	bho02_s	S	S	S	S	S	S	S	.
Heating benefit	-	E	E	E	E	E	E	E	No information on heating costs and benefit application
Early retirement pension	-	E	E	E	E	E	E	E	
Old-age pension	poa00_s	S	S	S	S	S	S	S	
Old-age pension supplement	poa01_s	S	S	S	S	S	S	S	
Old-age supplementary benefit	poa02_s	S	S	S	S	S	S	S	
Survivors' benefits	-	I	I	I	I	I	I	I	No information on death of partner
Green check	bhtuc_s	-	-	-	S	S	S	S	Only introduced in 2010.

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(s)	Treatment in EUROMOD							Why not fully simulated?
		2007	2008	2009	2010	2011	2012	2013	
Labour market contribution	tscee_s, tscse_s	S	S	S	S	S	S	S	-
Supplementary labour market contribution	tscpi_s	PS	PS	PS	PS	PS	PS	PS	No information on length of employment contract => monthly assumed.
Contributions to unemployment insurance scheme & early retirement pension scheme	tyrui_s	PS	PS	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	S	S	-
Municipality tax	tmu_s	S	S	S	S	S	S	S	-
Church tax	tcr_s	PS	PS	PS	PS	PS	PS	PS	No data on tax payment => randomly assigned from population data; No data on municipality of residence => average tax rate.
Health contribution	thl_s	S	S	S	S	S	S	S	-
Bottom-bracket tax	tinbt_s	S	S	S	S	S	S	S	-
Middle-bracket tax	tinmd_s	S	S	S	-	-	-	-	-
Top-bracket tax	tinto_s	S	S	S	S	S	S	S	-
Multimedia tax(now tax on free telephone)	-	-	-	-	E	E	E	E	No information on the tax base.
Shares tax	-	E	E	E	E	E	E	E	No isolated data on share income
Property value tax	tpr_s	PS	PS	PS	PS	PS	PS	PS	Tax base derived from tax payment.
Land value tax	xhc	I	I	I	I	I	I	I	No isolated data on the tax payment or on the land value.
Inheritance tax	-	E	E	E	E	E	E	E	No information on inheritance
Gift tax	-	E	E	E	E	E	E	E	No information on gifts
Added-value tax	-	E	E	E	E	E	E	E	No information on total consumption expenditures

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

2.2 Order of simulation and interdependencies

The following table shows the order in which the main elements of the Danish system in 2007-2013 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, 2007-2013

Policy	Description	Main output
tsc_dk	Labour Market Contribution, a gross tax on all employment income	tscee_s, tscse_s, tsc_s
tscpi_dk	Supplementary labour market pension contribution, a mandatory pension contribution	tscpiee_s, tscpier_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 ¹	inmd_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 (lump sum transfer) ²	bhtuc_s

¹ The tax has been abolished in 2010

² The benefit has been introduced in 2010

2.3. Social benefits

2.3.1. Unemployment benefit (*bunct_s*)

- *Definitions*

The unit of analysis is the individual (*tu_individual_dk*).

- *Eligibility conditions*

Member of an unemployment insurance fund and positive unemployment spell in the current year.

- *Income test*

Upper limit on the received benefit, see below.

- *Benefit amount*

90 per cent of the previous employment income, with an upper limit of 204,880 DKK per year in 2013.

In 2007 it was 177,580DKK per year. Between 2008 and 2010 the upper limit increased respectively to 182,180 DKK, 188,500 DKK and 195,520 DKK per year. In 2011 it was 199,160 and in 2012 204,880.

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 EUORMOD simulation. The maximum amount for part time insured people is equal to 2/3 of the full time maximum. 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.

2.3.2. Social assistance (*bsa_s*)

- *Definitions*

The unit of analysis is the individual (*tu_individual_dk*), although married partner income and wealth and the presence of dependent children enter in the simulation (*tu_bsa_dk*). Children are considered those younger than 18 years old.

- *Eligibility conditions*

Eligibility is conditional upon:

- The person has experienced an exogenous shock (e.g. unemployment, divorce, etc) and the person is not able to maintain a living
- Economics needs cannot be fulfilled by other means, including wealth
- The person is a EU citizen or has stayed in Denmark for 7 of the previous 8 years
- No other incomes (*il_bsa=0*).

- *Income test*

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

Married partners are obliged to support each other. For this reason incomes of the married partner are withdrawn from the amount received by the person entitled.

- **Benefit amount**

The table below describes the benefit amount for entitled individuals. If one or both spouses have received social assistance for 6 continuous months, the social assistance benefit is reduced by 662 dkr. (in 2013) per month for both.

Table 2.4. Social assistance benefits, 2007-2013, pr. Month.

<i>Age < 25</i>	2007	2008	2009	2010	2011	2012	2013
Provider	11,904	12,249	12,629	13,096	13,345	13.732	13.952
Non-provider				----- dkr. --			
- living by oneself	5,773	5,940	6,124	6,351	6,472	6.660	6.767
- living with parents	2,786	2,867	2,956	3,065	3,123	3.214	3.265
<i>Age ≥ 25</i>	2007	2008	2009	2010	2011	2012	2013
Provider	11,904	12,249	12,629	13,096	13,345	13.732	13.952
Non-provider	8,959	9,219	9,505	9,857	10,044	10.335	10.500
				----- dkr. ---			
Benefit reduction for those with children from countries outside the EU/EES not living in Denmark	566	582	600	622	634	652	662
After 6 months below age of 25							
Living by oneself					5486	5662	5753
Living with parents					2728	2815	2860

Source: Lovbekendtgørelse nr. 190 af 24. februar 2012 om aktiv socialpolitik
<http://www.retsinformation.dk/print.aspx?id=140126>

EUROMOD Notes: 1) The conditions on having experienced an exogenous shock and on 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.

2.3.2 Child family grant (*bfachnm_s*)

- **Definitions**

The unit of analysis is a parent and own dependent children (*tu_bfa_dk*).

- **Eligibility conditions**

Having children aged 0-17 years.

- **Income test**

None.

- **Benefit amount**

The benefit varies for 0-2 year olds, 3-6 year olds and 7-17 year old children, with annual benefits in 2013 of DKK 17,196, 14,608 DKK and 10,716DKK, respectively, see table 2.5.

Table 2.5. Benefits for child family grant, per child and year, 2007-2013.

Age of the child	2007	2008	2009	2010	2011	2012	2013
	----- dkr. -----						
0-2 year olds, per year	13,892	14,156	16,428	16,988	16,992	17,064	17,196
3-6 year olds, per year	12,552	12,792	13,004	13,448	13,452	13,500	13,608
7-17 year olds, per	9,876	10,064	10,232	10,580	10,584	10,632	10,716

Source: Lovbekendtgørelse nr. 964 af 19. september 2011 om en børne- og ungefamilieydelse. <http://www.magnus.dk/Home/Satser/B%C3%B8rnefamilieydelse.aspx?satsID={CA1A31F3-A2C9-4B74-B79D-BA589F6EC5A9}>

EUROMOD Notes: The benefit is assigned to the mother if any.

2.3.3 Ordinary child benefit and supplement (*bfach00_s*)

- **Definitions**

The unit of analysis is a parent and own dependent children (*tu_bfa_dk*).

- **Eligibility conditions**

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

- **Income test**

None.

- **Benefit amount**

5.184 DKK per child in ordinary child benefit plus a supplement of 5.284 DKK per benefit unit for lone providers, see table 2.6, in 2013. The Basic amount will be paid for each child, whereas the supplement can only be paid once per year.

Table 2.6. Ordinary child benefit rates, pr. year, 2007-2013

	Basic	Supplement
	----- dkr. -----	
2007	4,428	4,504
2008	4.556	4.636
2009	4.696	4.780
2010	4.868	4.956
2011	4.960	5.052
2012	5.104	5.200
2013	5.184	5.284

Source: Lovbekendtgørelse nr. 439 af 14. maj 2009 om børnetilskud og forskudsvis udbetaling af børnebidrag.

EUROMOD Notes: From 1 Jan 2012 full child benefits will only be paid out in cases where at least one parent/guardian have worked or had residence in Denmark for at least two years within the preceding ten years. From six months and up to the two year period, child benefits can be increased in increments of 25%

to the full amount. Since it is not possible to control for this condition, this bit of the rule is not implemented in EUROMOD.

2.3.4 Child benefit for student parents (*bfached_s*)

- *Definitions*

The unit of analysis is a 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*

None.

- *Benefit amount*

6804 DKK per children per year in 2013 (beyond the first if living with partner and both receive education grant). Between 2007 and 2012 the yearly benefit amount increased from 5,808 in 2007 to 5976 DKK, 6160 DKK, 6388 DKK, 6508 DKK and in 2012 6696 DKK.

2.3.5 Green 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 old.

- *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 incomes above a threshold of 362,800 dkr. (2010-level but with the same level in 2011- 2013), where the relevant income is the tax base for the top bracket tax (without taking account the deduction of contributions to capital pension schemes).

- *Benefit amount*

The annual benefit amounts to 1,300 dkr. for adults (>18 years of age) and 300 dkr. for children (for at most two children per family). Benefits for children are given to the mother. From 2013 an extra amount of 280 D.Kr. per person for low income earners has been decided and will be reduced by 7.5 % if the income exceeds 212.000 D.Kr. (2010 level. The level has not been adjusted in 2011,2012 and 2013).

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 to households not receiving housing allowances. The derived variable is called *xivhc*.

2.3.6.1 Housing Benefit (*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_persinc*) and positive net capital income are taken into account. Incomes from children living with their parents are included in the relevant household income, but only after deducting 19,900 dkr. in 2013, see table 2.7.

Table 2.7. Deductions in childrens incomes before deduction, 2007-2013 (boligsikring).

	-- dkr. --
2007	16,900
2008	17,200
2009	17,500
2010	18,100
2011	18,400
2012	18,800
2013	19,300

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}> and VEJ Nr. 81 af 12711/2012: Vejledning om regulering pr. 1. Januar 2013 af satser på Social og Integrationsministeriets område

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

Table 2.8. Income augmentation with wealth for calculation of housing benefit, 2007-2013.

Year	Per cent	Wealth thresholds
2007	0	< 632,800
	10	632,800 – 1,265,700
	20	> 1,265,700
2008	0	644,800
	10	644,800 – 1,289,700
	20	> 1,289,700
2009	0	< 655,800
	10	655,800 – 1,311,700
	20	> 1,311,700
2010	0	< 678,100
	10	678,100 – 1,356,300
	20	> 1,356,300
2011	0	< 686,900
	10	686,900 – 1,373,900
	20	> 1,373,900
2012	0	< 702,700
	10	702,700 – 1,405,500
	20	> 1,405,500
2013	0	< 722,000
	10	722,000- 1444.800
	20	> 1444.800

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}>, and VEJ Nr. 81 af 12711/2012: Vejledning om regulering pr. 1. Januar 2013 af satser på Social og Integrationsministeriets område.

Benefit amount to 60 per cent of the housing costs. From this 18 per cent of the income that exceeds 137,200 dkr. (in 2013) is subtracted. This income threshold is augmented by 36,100 dkr. (in 2013) for each child beyond the first in the household, to a maximum of 4 children, see table 2.9. 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 23,100 dkr. in rents him/herself. Households with up to 3 children (with 4 children or more) can at most receive a housing grant of 40,620 dkr. (50,775 dkr.) per year.

Table 2.9. Various limits etc. for housing benefit, per year, 2007-2013. Max benefit for 4 or more is 25% higher than the standard max limit (§23).

Age of the child	2007	2008	2009	2010	2011	2012	2013
	----- dkr. -----						
Lower income deduction	120,200	122,500	124,600	128,800	130,500	133,500	137,200
Deduction increase per	31,700	32,300	32,800	33,900	34,400	35,200	36,100
Own minimum payment	20,200	20,600	21,000	21,700	22,000	22,500	23100
Maximum benenit, hhd.s							
With up to 3 children	35,480	36,264	36,876	38,124	38,628	39,516	40,620
With 4 or more children	44,472	45,336	46,095	47,652	48,285	49,395	50,775

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}>.

2.3.6.2 Housing grant (*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 20,600 DKK per year is included in the relevant household income (table 2.10 below);

Table 2.10. Deductions in childrens incomes before deduction, 2007-2013.

	-- dkr. --
2007	17,400
2008	18,000
2009	18,600
2010	19,300
2011	19,700
2012	20,300
2013	20,600

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}>

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

Table 2.11. Income augmentation with wealth for calculation of housing grant, 2007-2013 (boligydelse)

Year	Per cent	Wealth thresholds
2007	0	< 651,000
	10	651,000 – 1,302,100
	20	> 1,302,100
2008	0	671,800
	10	671,800 – 1,343,800
	20	> 1,343,800
2009	0	< 694,700
	10	694,700 – 1,389,500
	20	> 1,389,500
2010	0	< 722,500
	10	722,500 – 1,445,100
	20	> 1,445,100
2011	0	< 736,200
	10	736,200 – 1,472,500
	20	> 1,472,500
2012	0	< 759,800
	10	759,800 – 1,519,600
	20	> 1,519,600
2013	0	< 771,900
	10	771,900-1.543,900
	20	> 1,543,900

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}>

- **Benefit amount**

The housing grant corresponds as a rule to 75 per cent of the housing with a supplement of 6,200 dkr. (in 2013). From this 22.5 per cent of the income that exceeds 146,600 dkr. (in 2013) is subtracted. This income threshold is augmented by 38,600 dkr. (in 2013) for each child in the household, up to a maximum of 4 children. The recipient of the housing benefit has to pay minimum 11 per cent of the income herself, or at least 15,500 dkr. (in 2013). Households with up to 3 children (with 4 children or more) can at most receive a housing grant of 43,404 dkr. (54,255 dkr.) per year.

Table 2.12. Various limits etc. for housing grant, per year, 2007-2013.

Age of the child	2007	2008	2009	2010	2011	2012	2013
	----- dkr. -----						
Supplement	5,200	5,400	5,600	5,800	5,900	6,100	6,200
Lower income deduction	123,700	127,600	132,000	137,200	139,800	144,300	146,600
Deduction increase per	32,600	33,600	34,800	36,200	36,800	38,000	38,600
Own minimum payment	13,100	13,500	14,000	14,500	14,800	15,300	15,500
Maximum benenit, hhd.s							
With up to 3 children	36,612	37,776	39,060	40,620	41,400	42,720	43,404
With 4 or more children	45,768	47,220	48,825	50,772	51,750	53,400	54,255

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}>

2.3.7 Basic old-age pension (*poa00_s*)

- *Definitions*

The unit of analysis is the individual (*tu_individual_dk*)

- *Eligibility conditions*

All persons from the age of 65, with conditions on citizenship and time of residence in Denmark.

- *Income test*

Above a threshold of 295,900 dkr. per year in her/his own earnings income, the benefit is withdrawn with 30 per cent, see table 2.13 below.

- *Benefit amount*

69,648 DKK per year in 2013, see also table 2.13 below.

Table 2.13. Income threshold and benefit amount for basic old-age pension, per year, 2007-2013 (folkepension).

	2007	2008	2009	2010	2011	2012	2013
	----- dkr. -----						
Benefit amount	59,424	61,152	63,048	65,376	66,624	68,556	69,648
Income threshold	252,400	259,700	267,800	277,700	283,000	291,200	295,900

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.

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

2.3.8 Old-age pension supplement (*poa01_s*)

- **Definitions**

The unit of analysis is the individual (*tu_individual_dk*)

- **Eligibility conditions**

All persons from the age of 65, with conditions on citizenship and time of residence in Denmark.

- **Income test**

The relevant income concept for both own and spouse' 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.

For a single pensioner in 2013 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 65,300dkr. 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 204,300 Dkr. is deducted beforehand.

For couples, income above a combined basic deduction of 131,000 dkr. (2013) is set off against the pension supplement with 15 per cent for two pensioner-couples and with 30 percent for one-pensioner couples.

Table 2.14. Income dependence parameters for old-age pension supplement, per year, 2007-2013

	2007	2008	2009	2010	2011	2012	2013
Singles							
Deduction, own income	55,700	57,300	59,100	61,300	62,500	64,300	65,300
Phase-out rate (%)	30	30	30	30	30,9	30,9	30,9
Couples							
Limit for calc. of spouse-	174,300	179,400	185,000	191,800	195,400	201,100	204,300
Deduction, spouse' income	111,800	115,000	118,600	123,000	125,300	128,900	131,000
Phase-out rate (per cent)							
<i>Couples, 1 old- age</i>	30	30	30	32	32	32	32
<i>Couples, 2 old- age</i>	15	15	15	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>

- **Benefit amount**

34,968 DKK for married/cohabitants and 72,336 DKK for singles (in 2013).

Table 2.15. Benefits for old-age pension supplement, per year, 2007-2013.

	2007	2008	2009	2010	2011	2012	2013
		----- dkr. -----					
Married/cohabitants	27,936	28,752	29,640	32,820	33,444	34,416	34,968
Singles	59,820	61,560	63,468	67,896	69,192	71,196	72,336

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>

2.3.9 Supplementary pension (*poa02_s*)

- *Definitions*

The unit of analysis is the individual (*tu_individual_dk*)

- *Eligibility conditions*

All old-age pensioners (age ≥ 65).

- *Income test*

The benefit is reserved for pensioners with liquid financial assets of less than 78,900DKK (see table below) and is phased-out against labour income above a basic deduction.

- *Benefit amount*

15,900 DKK per year (see table below).

Table 2.16. Benefit and asset test for supplementary pension, per year, 2007-2013.

	2007	2008	2009	2010	2011	2012	2013
	----- dkr. -----						
Benefit	7,600	7,800	10,300	10,700	10,900	11,200	15,900
Asset threshold	58,200	59,900	61,800	74,100	75,500	77,700	78,900

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>.

2.3.10 Personal Supplement rate (*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 of 30.000 dkr. applies.

As a default the supplement rate is 100 per cent (e.g. 100% of the benefit is paid), which is reduced for incomes above 18.800 dkr. (in 2013) for singles and above 37.200 dkr. for married cohabitant couples by 1 percentage point for every 465 Dkr. (938 dkr. for couples) of other income. See also table below.

Table 2.17. Benefit and asset test for personal supplement rate, per year, 2007-2013.

	2007	2008	2009	2010	2011	2012	2013
	----- dkr. -----						
Basic deduction							
Singles	16,100	16,600	17,100	17,700	18,000	18,500	18,800
Couples	31,800	32,700	33,700	34,900	35,600	36,600	37,200
Phase-out							
Singles	396	407	420	436	445	458	465
Couples	800	823	849	881	897	923	938

Source: Lovbekendtgørelse nr. 1005 af 19. august 2010 om social pension. Vej. Nr. 81 af 12/11/2012. Vejledning om regulering pr. 1.januar 2013 af satser på Social og Integrationsministeriets område.

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 (*tscpier_s*, *tscpiee_s*)

All employees and employers pay contributions to a supplementary labour market pension scheme, 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 2.18 below. Employers pay two-third 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 2.18. Supplementary labour market pension contributions, 2007-2013 (ATP-bidrag).

	2007-2008	2009--2013
	----- dkr. -----	
Monthly contract		
Full time (117h-)	243.90	270
Part time (78-116h)	162.60	180
Part time (39-77h)	81.30	90
< 39 hours	0	0
Fortnightly contract		
Full time (54h-)	128.70	142.20
Part time (36-53h)	85.80	94.80
Part time (18-36h)	42.90	47.40
< 39 hours	0	0
Weekly contract		
Full time (27h-)	64.35	71.10
Part time (18-26h)	42.90	47.50
Part time (9-17h)	21.45	23.70
< 39 hours	0	0
Hourly paid		
Per hour	1.74	1.92

Source:

https://www.atp.dk/X5/wps/wcm/connect/atp/atp.dk/erhverv/pens/ATP/Privat_virksomhed/Hvad_koster_det/Satser_for_2009

EUROMOD note: Only monthly contracts are simulated in Euromod, as the majority of contracts in Denmark are monthly.

2.4.3 Contribution to unemployment insurance scheme and early retirement scheme (*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 2.19. Voluntary contribution to unemployment insurance and early retirement scheme, 2007-2013 pt.mon/h.

	2007	2008	2009	2010	2011	2012	2013
Contribution to unemployment insurance	283	287	292	301	306	315	315
Contribution to early retirement scheme	402	410	418	439	447	460	460

Source: <http://ams.dk/da/Love-og-Regler/Satser/Aktuelle%20satser.aspx>

EUROMOD note: Participation to unemployment insurance scheme is imputed using national register data.

2.4.4 Labour Market Contributions (tsc_s)

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

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 2.20 Calculation of the Personal Income and Taxable Income tax bases

<p>(1) Gross labour income</p> <ul style="list-style-type: none"> - Contributions to occupational based agreed obligatory supplementary pension scheme + Transfers <ul style="list-style-type: none"> 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>) Disability pension (<i>Revalideringsydelse mv.</i>) + Other incomes + Gifts + Alimony received + Life insurance premiums, fringe benefits + Multi media tax base (3.000 dkr.; from 2010, (2.500 in 2013)) - Labour market contribution - Contribution to private pension schemes with a ceiling
<p>(2) Personal income</p> <ul style="list-style-type: none"> + Net capital income - Work-related deductions <ul style="list-style-type: none"> Earned income tax credit Transport allowance Payments to unemployment funds, unions & early retirement scheme Alimony/payments to divorcees' children and ex-partner Special occupational deductions (fishermen, etc.) Deposit on (company) start-up account Gift deductions Other employee expenses (over 5.500kr in 2013)
<p>(3) Taxable income</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 *il_persinc* and *il_taxinc* 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 most close variable – investment income *yi* – also includes a long range of positive incomes. For this reason, only negative investment incomes are included in the tax base. This option can be switched off in the model. 3) For commuting distances (forth and back) above 25km, 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, used for the simulation of several of the instrument described below.

Table 2.21 General Personal Allowance, 2007-2013.

	2007	2008	2009	2010	2011	2012	2013
	----- dkk -----						
General personal allowance							
- For persons below 18 years	29,300	30,600	32,200	32,200	32,200	32,200	31,500
- For all other tax payers	39,500	41,000	42,900	42,900	42,900	42,900	42,000

Source: Lovbekendtgørelse nr. 143 af 8. februar 2011 om indkomstskat for personer mv.

<http://www.skm.dk/skatteomraadet/talogstatistik/skatteberegning/9757.html>.

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:

- *Tax unit*

Tax unit is 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

- *Tax Schedule*

In 2013 the earned income tax credit rate was 6,95 %. The maximum value of tax credit was of 22300 DKK per year.

Table 2.22. Earned income tax-credit, per year, 2007-2013 (beskaeftigelsesfradrag)

	2007	2008	2009	2010	2011	2012	2013
	----- dkr. -----						
Rate	2.5	4.0	4.25	4.25	4.25	4.40	6,95
Maximum value	7,500	12,300	13,600	13,600	13,600	14,100	22.300

Source: Forårspakke 2.0 <http://www.magnus.dk/Home/Satser/For%C3%A5rspakke%202.0.aspx?satsID={E8790D81-C617-408E-9702-C1052490623F}>

2.5.3 Municipality Tax:

- *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 2.23. Distribution of municipality tax rates, 2007-2013 (kommuneskat)

	2007	2008	2009	2010	2011	2012	2013
	----- per cent -----						
Average	24.58	24.81	24.82	24.9	25.0	25.0	24.9
Minimum	22,32	22,80	22,80	22,80			22,7
Maximum	26,71	27,80	27,80	27,80			27,8

Source: Skatteministeriet. http://www.skm.dk/tal_statistik/tidsserieoversigter/7794.html

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

2.5.4 Church Tax:

- *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 2.24. Distribution of church tax rates, 2007-2012 (kirkeskat).

	2007	2008	2009	2010	2011	2012	2013
	----- per cent -----						
Average	0.74	.73	.74	.74	.7	.7	0.7
Minimum	0,42	0,41	0,42	0,44			
Maximum	1,5	1,5	1,5	1,5			

Source: Danish Ministry of Taxation http://www.skm.dk/tal_statistik/tidsserieoversigter/7794.html

EUROMOD note: The church tax is a voluntary contribution. In EUROMOD entitlement is randomly assigned to 68,2% of the municipality tax payers. Since it is not possible to distinguish among counties in the SILC, the average tax rate is applied

2.5.5 Health Contribution:

- *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 8% between 2007-2011, 7% for 2012 and 6 % for 2013.

2.5.6 Bottom Bracket Income Tax:

- *Tax unit*

The tax unit is individual

- *Tax Base*

The tax base is the personal income base and positive 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 rates in 2013 was 5.83 per cent, see table 2.25.

Table 2.25. Bottom bracket tax rates, 2007-2012 (bundskat).

	2007	2008	2009	2010	2011	2012	2013	
		----- per cent -----						
Bottom bracket tax rate	5.48	5.48	5.04	3.67	3.64	4.64	5,83	

Source: Danish Ministry of Taxation http://www.skm.dk/tal_statistik/tidsserieoversigter/7794.html

2.5.7 Medium Bracket Income Tax:

- *Tax unit*

The tax unit is individual

- *Tax Base*

The tax is levied upon the sum of the personal income tax base and positive net capital income, with the middle bracket tax allowance subtracted. For the calculation of the middle bracket tax spouses can transfer negative net capital income and any unused middle bracket tax allowance. The middle bracket tax has been abolished, applicable from the tax year 2010.

- *Tax Schedule*

Table 2.26. Middle bracket tax rates and allowances, 2007-2009 (mellemskat).

	2007	2008	2009
Middle bracket tax rate	6.0	6.0	6.0
Middle bracket tax allowance	272,600	279,800	347,200

Source: Danish Ministry of Taxation http://www.skm.dk/tal_statistik/tidsserieoversigter/7794.html

2.5.8 Top Bracket Tax:

- *Tax unit*

The tax unit is individual

- *Tax Base*

The top-bracket tax is the highest-level of the three 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 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.

From the tax year 2010, a basic yearly allowance of 40.000 dkr. is 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 80.000 dkr. (in 2013) are taxed with the top-bracket tax rate.

- *Tax Schedule*

Table 2.27. Top bracket tax rates and allowances, 2007-2013 (topskat).

	2007	2008	2009	2010	2011	2012	2013
	----- per cent -----						
Top bracket tax rate	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Top bracket tax allowance	327,200	335,800	347,200	389,900	409,100	409,100	421.000
Allowance in positive net	-	-	-	40,000	40,000	40,000	40.000

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

The sum of municipal, health, bottom, middle and top tax could not exceed 59% 2007-2009 and remained at 51.5% 2010-2012. In 2013 the level is 51.7 %. If this happens, the top bracket income tax is reduced accordingly.

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 dkr. and a tax rate of 3 per cent 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 15,000 individuals from almost 6,000 households. The sampling is representative of all private households in Denmark.

Table 3.1 EUROMOD database description

EUROMOD database	
Original name	DK_2008_a1
Provider	Statistics Denmark
Year of collection	2008
Period of collection	March-July (interview part)
Income reference period	2007 (calendar year)
Sampling	Random probability sampling
Unit of assessment	Households
Coverage	Private households
Sample size	5778 households (14836 individuals)
Response rate	

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 meal 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 July), further information on income, education and housing are added from official registry data.

About 48 per cent of the interviews were conducted by telephone with the respondent herself, while another 49 per cent were conducted through interview with another member of the household. The remaining interviews were self-administered by the respondent.

The sampling is managed as a rotating panel, where 25 per cent of the sample is replaced each year. A given household is thus part of the sample for 4 continuous years.

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

3.2 Sample quality and weights

3.2.1 Non-response

There is a non-response rate of almost 48 per cent from the sampling of 11,000 private households to the final sample of 5,778 households in the Danish part of the UDB EU-SILC-data. Statistics Denmark has not documented the reasons for non-response explicitly, but states that the general refusal of people to take part in interview surveys for research purposes poses a considerable problem. It is possible for citizen to register for this so-called ‘researcher-protection’ with the national registration office.

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**) 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 survey population, taking account of the population distribution in the following categories:
 - Highest attained education
 - Sector of employment
 - Gender
 - Age
 - Income
 - Number of household members
 - Type of household
 - Regional distribution of population
- The personal cross-sectional weights for all household members of all ages (variable **RB050**) is used to draw inference on individual basic demographic variables for the population of all individuals living in private households. Because all the current members of any selected household (which has responded to the interview) are surveyed, the personal weights RB050 are equal to the household weights DB090.
- The personal cross-sectional weights (variable **PB040**) for all household members who were interviewed individually (aged 16 and over) is used to draw inference on the variables included in the personal questionnaire. These weights had to be corrected for individual non-response.
- The personal cross-sectional weights for the selected respondents (variable **PB060**) are equal to PB040 for the selected respondents.

Table 3.2 Descriptive Statistics of weights

	DB090	RB050	PB040	PB060
Number	14836	14836	11545	5778
Mean	365.840	365.840	377.796	754.873
Median	305.646	305.646	303.546	699.245
Maximum	3652.146	3652.146	3652.146	4208.553
Minimum	1.258	1.258	1.258	7.549
Max/Min	2903.137	2903.137	2903.137	557.498
Decile 1	129.219	129.219	132.231	375.844
Decile 9	660.533	660.533	722.967	1211.294
Dec 9 / Dec1	5.112	5.112	5.467	3.223

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 Other income - *yot*

There are seven observations with negative *yot*, which should cover incomes received by people under 16. As there is no obvious reason for negative incomes of this kind, the 7 cases with *yot*<0 have been recoded to zero.

3.4 Imputations and assumptions

3.4.1 Time period

The used EU-SILC-data for 2008 is based on survey data from interviews conducted March-July 2008 combined with registry data from the calendar year 2007 on incomes, dwelling information and educational information.

The input registry data on incomes are aggregated annual numbers, but are for use in EUROMOD converted into monthly records, thus implicitly assuming a regular flow of income throughout the year. However, a number of variables in the data that record the number of month with different income types, sum as *yemmy* = “Month of employment (income)” or *bunmy* = “Month of unemployment benefit income”.

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

The aggregated construction of a number of especially income variables in the EU-SILC UDB-data have necessitated the splitting of UDB-variables and/or the imputation of individual benefits. Some key examples are:

Both unemployment benefits, social assistance and early retirement benefits are recorded in the UDB-variable PY090G (*bun*).

- Early retirement benefit (*pyr*) is split by use of the age of the recipient and the size of the benefit.
- Actual unemployment benefits (*bunct*) are imputed from the recipients age and the size of the benefits.
- Social assistance benefit (*bsa*) is split by wealth eligibility, recipients’ provider status, whether the person is living with parents and age

Various forms of public pension transfers as well as income from private pension schemes are recorded in the UDB-variable PY100G.

- The basic old-age pension (*poa00*) is imputed from age, other incomes and numbers of years lived in Denmark.

- The pension supplement (poa01) is imputed from age and own as well as spouse income.
- The supplementary pension benefit (poa02) is imputed from income and wealth.
- The supplementary labour market pension (poa03) is imputed from external information on average incomes of this type and assumptions on lifetime work history.
- The remaining part of PY100G is recorded as payments from private pension schemes. It will however be an amalgam of a heating subsidy, 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 is imputed hence by reversing the rules for the housing allowances, creating the housing cost base for housing benefits (xhc01) and for housing grants (xhc02). The variable xivhc is then imputed for all the household in sample using predictions of xhc01 on and xhc02 on the basis of household characteristics and SILC reported housing cost.

To simulate the receipt of unemployment benefit (see also section 2.3.1), the participation to the unemployment insurance scheme is simulated in the 0/1-variable lrg, based on a discrete choice model established from Danish registry data.

As SILC does not contain informations 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 Updating

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

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

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
Company car		+
Contributions to individual private pension plans		0
Cash benefits or losses from self-employment		+
Pension from individual private plans		0
Unemployment benefits		+
Old-age benefits		+
Survivor' benefits		+
Sickness benefits		+
Disability benefits		+
Education-related allowances		+
Income from rental of a property or land		+
Family/children related allowances		+
Social exclusion not elsewhere classified		+
Housing allowances		+
Regular inter-household cash transfer received		+
Interests, dividends, etc.		+
Income received by people aged under 16		+
Regular taxes on wealth ¹		-
Regular inter-household cash transfer paid		-
Tax on income and social contributions		-
Repayments/receipts for tax adjustment		+

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

4.1.2 Validation of incomes inputted into the simulation

The number of employed in the SILC-data compares quite well with external information, see table 4.2 in Annex 2.

The number of unemployed, on the other hand, is far larger according to the SILC-data than in the external statistics, which may be due to the differences in computation. EM-figures are number of employed and unemployed based on months in employment/unemployment. Numbers are computed as averages of monthly

data over the year. 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. The income information in the SILC-data is almost exclusively based on official registers and therefore not prone to misreporting errors. Therefore the number of persons with employment income in the EM-data quite closely matches the external statistics, as does investment income and private pension income (table 4.3). The number of self-employed is overestimated in SILC compared to external statistics.

Table 4.4 compares market income against external statistics. Both for the mean and the total of employment income, EUROMOD performs quite well in all years. Self-employment income and investment income show an underestimation in EUROMOD for the base year 2007. This deviation is reduced for self-employment income in the following policy years. The discrepancy between EM input dataset and external statistics is bigger for the number of self employed than for total amount of income from self employed. 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 statistics in the tax-statistics. The same reason might apply to investment income. Investment income varies over time, and, there might be reporting issues, which although do not have any impact on total income.

The differences between the number of recipients of various types of non-simulated benefits/ number of payers of non-simulated taxes between the input dataset and external statistics (see Table 4.5 in Annex 2) are in general very low with the exception of support to survivors (heavily underestimated) and disability benefits (overestimated). In both cases EUROMOD counts as a recipient all the individual receiving these benefits at least once during the year, while external statistics on disability benefits are full time equivalent. With respect to survivor helps, SILC record as old age benefits every benefit received by recipients older than 65. This, together with a relatively modest size of the benefit, might explain partly the overestimation. Similarly to the case of the number of recipients, there are in general differences between the aggregate yearly amounts of various types of non-simulated benefits/ non-simulated taxes in the input dataset and external statistics (see Table 4.6 in Annex 2). The supplementary labour market aggregate amount compared to the simulation has deteriorated over the years, whereas there has been improvement in disability pension. The early retirement benefit is underestimated, looking like a systemic or historical problem as the expected development has been relatively well known for years.

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 with the exception of housing benefits.

A change in the eligibility rules for housing benefit and grant may accommodate for the divergence between the external statistics and the EUROMOD-simulations. According to the rules applicable in 2007-2013 – and thus in 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 following rules valid until 2003. This means that the external numbers for the housing grant are inflated by these 'old' disable pensioners relative to the simulations based on the age-dependent imputation from the 2007-input data. Likewise, the external data for the housing benefit are 'deflated' by these 'old-rule' disability pensioners, compared to the simulations.

Insufficient information on the underlying data implies that EUROMOD cannot fully simulate the unemployment benefit and has to use the number of recipients in the 2007 SILC-data as a base for simulations also in the subsequent years. The simulations therefore cannot reflect the initial fall and subsequent rise in the number of recipients of unemployment benefit.

For most of the simulated taxes and benefits there is an acceptable fit of the EUROMOD simulations with external statistics, see appendix 2 table 4.8, with the exception of unemployment benefit and property value tax. The gradual less strong fit for old-age pension can presumably be attributed to that an increasing number of Danes has occupational based pension when they retire from the labour market. This implies that fewer people receive the supplementary state pension over time. There has also been a slight tendency to that more people with high income continue to work, and, as the basic pension also is dependent on the earned wage income this might have an impact.

As is the case for the number of recipients also the aggregate amounts of disbursed housing benefits are overestimated by EUROMOD.

The aggregate amount of disbursed unemployment benefits shows an increasing divergence with time, as unemployment soared in the wake of the financial/economic crisis setting in 2007 and 2008 albeit with a better fit in 2008 than in later years.

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 all income sources of all household members net of income tax and social insurance contributions. The weights in the OECD equivalence are: first adult=1; additional people aged 14+ = 0.5; additional people aged under 14 = 0.3.

4.2.1 Income inequality

A comparison of distributional indicators derived from EUROMOD-generated household disposable income with external statistics shows that EUROMOD overestimated incomes for the lowest decile, while slightly underestimating incomes for higher deciles of the income distribution. These divergences also cause an underestimation of the Gini-coefficient and of the S80/S20-ratio.

4.2.2 Poverty rates

A computation of poverty rates by gender and age using EUROMOD shows that EUROMOD underestimates the incidence of poverty in Denmark according to EUROSTAT database (table 4.10). This underestimation is larger for the lower poverty lines, such as 40% and 50 % of median household disposable income (HDI), while the poverty rates are slightly underestimated for the 60 % and 70% median HDI. This indicates that it is the overestimation of incomes in the lowest decile mentioned in relation to table 4.9 which also biases EUROMODs results for poverty incidence.

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 are in Denmark in general 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, and, should therefore only more marginally be having an impact on the overall level of calculation.

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 750DKR per year.

5. HEALTH WARNINGS

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 to 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.

6. REFERENCES

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

StatBank Denmark: www.statistikbanken.dk.

- *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 Danish:

- The Ministry of Taxation, www.skm.dk/foreign/
- The central legal information: <https://www.retsinformation.dk/>
- The Ministry of Social Affairs, Children and Integration: <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
- Wolters Kluwer information gateway to Danish law statutes: www.magnus.dk

ANNEX 1 - UPRATING FACTORS

Variable	Label	2008	2009	2010	2011	2012	2013	Source
yivwg	INCOME : Imputed value : Wage/Salary	1.046	1.078	1.102	1.124	1.141	1.156	2
yem	INCOME : Employment	1.046	1.078	1.102	1.124	1.141	1.156	2
yempv	INCOME : Income base for unemployment benefit	1.038	1.086	1.119	1.144	1.166	1.184	2
ypp	INCOME : Private Pension	1.034	1.048	1.072	1.102	1.128	..	1
yse	INCOME : Self Employment	1.046	1.078	1.102	1.124	1.141	1.156	2
yi	INCOME : Investment	0.667	0.586	0.798	0.623	0.972	1.151	3
ypr	INCOME : Property	1.030	1.030	1.036	1.075	1.101	1.116	4
ypt	INCOME : Private Transfers	1.046	1.078	1.102	1.124	1.141	1.156	2
yot	INCOME : Other	1.046	1.078	1.102	1.124	1.141	1.156	2
yds	INCOME : Disposable	0.996	1.014	1.091	1.108	-	..	5
bed	BENEFIT/PENSION : Education	1.029	1.061	1.100	1.121	1.154	1.172	6
bun	BENEFIT/PENSION : Unemployment	1.029	1.061	1.100	1.121	1.154	1.172	6
bunct	BENEFIT/PENSION : Unemployment : Contributory	1.029	1.061	1.100	1.121	1.154	1.172	6
bunot	BENEFIT/PENSION : Unemployment : Other	1.029	1.061	1.100	1.121	1.154	1.172	6
bsa	BENEFIT/PENSION : Social Assistance	1.029	1.061	1.100	1.121	1.154	1.172	6
pyr	BENEFIT/PENSION : Early Retirement	1.029	1.061	1.100	1.121	1.154	1.172	6
bhl	BENEFIT/PENSION : Health	1.029	1.061	1.100	1.121	1.154	1.172	6
bfa	BENEFIT/PENSION : Family	1.029	1.061	1.100	1.121	1.154	1.172	6
bfach00	BENEFIT/PENSION : Family : Ordinary child benefit & supplement	1.029	1.061	1.100	1.121	1.154	1.172	6
bfached	BENEFIT/PENSION : Family : Child benefit to student parents	1.029	1.061	1.100	1.121	1.154	1.172	6
bfachnm	BENEFIT/PENSION : Family : Child family grant	1.029	1.061	1.100	1.121	1.154	1.172	6
bfachot	BENEFIT/PENSION : Family : Residual benefits	1.029	1.061	1.100	1.121	1.154	1.172	6
bho01	BENEFIT/PENSION : Housing benefit (non-pensioners)	1.029	1.061	1.100	1.121	1.154	1.172	6
bho02	BENEFIT/PENSION : Housing grant (pensioners)	1.029	1.061	1.100	1.121	1.154	1.172	6
pdi	BENEFIT/PENSION : Disability	1.029	1.061	1.100	1.121	1.154	1.172	6
poa	BENEFIT/PENSION : Old Age	1.029	1.061	1.100	1.121	1.154	1.172	6
poa00	BENEFIT/PENSION : Old Age : Main/Basic	1.029	1.061	1.100	1.121	1.154	1.172	6
poa01	BENEFIT/PENSION : Old Age : Supplementary Benefit	1.029	1.061	1.100	1.121	1.154	1.172	6
poa02	BENEFIT/PENSION : Old Age : Supplementary Labour Market Pension	1.029	1.061	1.100	1.121	1.154	1.172	6
poa03	BENEFIT/PENSION : Old Age : Supplementary Additional Benefit	1.029	1.061	1.100	1.121	1.154	1.172	6
psu	BENEFIT/PENSION : Survivors	1.029	1.061	1.100	1.121	1.154	1.172	6
tpr	TAX : Property tax	0.983	0.831	0.866	0.857	0.803	0.834	8
tis	TAX : Income tax and SICs	1.034	1.048	1.072	1.102	1.128	..	1
kfb	IN KIND : Fringe Benefit	1.046	1.078	1.102	1.124	1.141	1.156	2
kivho	IN KIND : Imputed value : Housing	1.024	1.055	1.086	1.119	1.148	1.173	7
afc	ASSETS : Financial Capital	0.667	0.586	0.798	0.623	0.972	1.151	3
aiv	ASSETS: Imputed property value	0.667	0.586	0.798	0.623	0.972	1.151	3
xmp	EXPENDITURE : Maintenance Payment	1.029	1.061	1.100	1.121	1.154	1.172	6
xpp	EXPENDITURE : Private Pension (voluntary)	1.046	1.078	1.102	1.124	1.141	1.156	2
xhc	EXPENDITURE : Housing cost	1.024	1.055	1.086	1.119	1.148	1.173	7
xhct	EXPENDITURE : Housing cost : Rent	1.030	1.030	1.036	1.075	1.101	1.116	4
xhcmomi	EXPENDITURE : Housing cost : Mortgage Payment (interest+capital)	1.030	1.030	1.036	1.075	1.101	1.116	4
xhcot	EXPENDITURE : Housing cost : Other	1.030	1.030	1.036	1.075	1.101	1.116	4
xivhc	EXPENDITURE : Imputed housing cost	1.024	1.055	1.086	1.119	1.148	1.173	7
xhc01	EXPENDITURE : Housing cost	1.024	1.055	1.086	1.119	1.148	1.173	7
xhc02	EXPENDITURE : Housing cost	1.024	1.055	1.086	1.119	1.148	1.173	7

Sources:

- 1 - Danish Consumer Price Index, yearly average, Statistics Denmark, www.statistikbanken.dk, PRIS61
- 2- Indices of average earnings in the private sector, Q2-Q2, Seasonally adjusted, Statistics Denmark, StatBank Denmark, ILON2
- 3- Share price index, Danish Stock exchange, September-September variation, Statistics Denmark, StatBank Denmark MPK13
- 4- Construction costs index, Statistics Denmark, StatBank Denmark, BYG5, 2quarter to 2nd quarter
- 5- Increase in average disposable household income, Statistics Denmark, StatBank Denmark, INDKF32
- 6- Satsreguleringsprocenten (adjustment of rates index), Moderniseringsstyrelsen <http://www.modst.dk/OEAV/2-Bevillingslove/25-Indeks/251-Fastprisberegninger>
- 7- Consumer Price Index, Rent, yearly change from september to september, Statistics Denmark, StatBank Denmark, PRIS6 (husleje),2007=100
- 8- Development in prices for sold property (one-family house) 2nd quarter to 2nd quarter Statistics Denmark, EJEN5

ANNEX 2 - VALIDATION TABLES

Table 4.2 -Number of employed and unemployed

	EUROMOD	External							Ratio					
	2007	2007	2008	2009	2010	2011	2012	2013	2007	2008	2009	2010	2011	2012
N of employed	2639.205	2761	2810	2727	2656	2645	2623	N/A	0.96	0.94	0.97	0.99	1.00	1.01
N of unemployed	234.2223	110	101	177	218	221	218	N/A	2.13	2.32	1.32	1.07	1.06	1.07

Source: StatBank(AKU101)

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

	EUROMOD	External							Ratio					
	2007	2007	2008	2009	2010	2011	2012	2013	2007	2008	2009	2010	2011	2012
Employment income	2953	3005	2978	2936	2894	2893	N/A	N/A	0.98	0.99	1.01	1.02	1.02	N/A
Self-employment income	794	507	484	508	489	524	N/A	N/A	1.57	1.64	1.56	1.62	1.51	N/A
Investment income	4006	3918	3974	3606	3347	3291	N/A	N/A	1.02	1.01	1.11	1.20	1.22	N/A
Private Pensions	450	409	439	466	495	524	N/A	N/A	1.10	1.03	0.97	0.91	0.86	N/A
Rent income	85	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other Incomes	252	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Private Transfers	147	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: StatBank, INDKP1

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

	EUROMOD							External			Ratio								
	2007	2008	2009	2010	2011	2012	2013	2007	2008	2009	2010	2011	2012	2013	2007	2008	2009	2010	2011
Employment income	763,039	798,139	822,557	840,870	857,656	870,628	882,074	768,889	808,514	801,221	819,942	827,724	N/A	N/A	0.99	0.99	1.03	1.03	1.04
Self-employment income	66,322	69,373	71,495	73,087	74,546	75,673	76,668	81,564	80,120	71,231	73,002	76,254	N/A	N/A	0.81	0.87	1.00	1.00	0.98
Investment income	31,996	21,341	18,750	25,533	19,933	31,100	36,827	57,331	42,475	29,779	34,891	36,456	N/A	N/A	0.56	0.50	0.63	0.73	0.55
Private Pensions	31,148	32,207	32,643	33,391	34,325	35,135	35,976	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rent income	1,113	1,146	1,146	1,153	1,196	1,225	1,242	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other Incomes	1,670	1,747	1,800	1,840	1,877	1,905	1,930	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Privat Transfers	2,777	2,905	2,994	3,061	3,122	3,169	3,211	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Average employment income	258,385	270,271	278,539	284,740	290,425	294,817	298,693	255,870	271,496	272,895	283,325	286,113	N/A	N/A	1.01	1.00	1.02	1.00	1.02

Sources: Calculation from Table 4.4 and 4.3; StatBank, INDKP4 (7-7A); StatBank, INDKP4 (8); StatBank, INDKP4 (3+36)

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

	EUROMOD		External							Ratio										
	2007	2007	2008	2009	2010	2011	2012	2013	2007	2008	2009	2010	2011	2012	2013					
Benefits																				
Supplementary labour market pension	712.7711	665	697	731	770	811	N/A	N/A	1.07	1.02	0.98	0.93	0.88	N/A	N/A					
Disability pension	356.7944	235	235	237	238	238	236	N/A	1.52	1.52	1.51	1.50	1.50	1.511841	N/A					
Education benefit	378.5357	305	307	327	364	388	N/A	N/A	1.24	1.23	1.16	1.04	0.98	N/A	N/A					
Survivors' help	35.53103	338	327	292	246	383	271	N/A	0.11	0.11	0.12	0.14	0.09	0.131111	N/A					
Sickness benefit	406.1088	468	449	441	427	425	390	N/A	0.87	0.90	0.92	0.95	0.96	1.041305	N/A					
Early retirement benefit	204.0881	182	183	179	173	163	N/A	N/A	1.12	1.12	1.14	1.18	1.25	N/A	N/A					

Sources: StatBank, INDKP1 (12); StatBank, AUK01; StatBank, INDKP1 (23); StatBank, KONT4; StatBank, SOCDAG/1 since 2010 employed and self-employed number of persons; StatBank, INDKP1 (13)

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

	EUROMOD							External							Ratio						
	2007	2008	2009	2010	2011	2012	2013	2007	2008	2009	2010	2011	2012	2013	2007	2008	2009	2010	2011	2012	
Benefits																					
Supplementary labour market pension	6548	6738	6946	7204	7341	7553	7674	6782	7688	8424	9131	9804	N/A	N/A	0.97	0.88	0.82	0.79	0.75	N/A	
Disability pension	47083	48448	49950	51800	52784	54315	55181	35411	37296	38951	41157	42418	43130	N/A	1.33	1.30	1.28	1.26	1.24	1.26	
Education benefit	13432	13821	14250	14777	15058	15495	15742	10094	10459	11693	13555	14940	N/A	N/A	1.33	1.32	1.22	1.09	1.01	N/A	
Survivors' help	2007	2065	2129	2208	2250	2315	2352	3390	3563	3036	2627	3649	2800	N/A	0.59	0.58	0.70	0.84	0.62	0.83	
Sickness benefit	15570	16021	16518	17130	17455	17961	18248	14011	14435	14761	14864	14704	14071	N/A	1.11	1.11	1.12	1.15	1.19	1.28	
Early retirement benefit	4713	4849	5000	5185	5283	5437	5523	20211	21486	21042	20865	19825	N/A	N/A	0.23	0.23	0.24	0.25	0.27	N/A	

Sources: Statbank, indkp1; STATbank, OFF10; Statbank, kont4; statbank: socdag00; Statbank: indkp1

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

	EUROMOD							External							Ratio							
	2007	2008	2009	2010	2011	2012	2013	2007	2008	2009	2010	2011	2012	2013	2007	2008	2009	2010	2011	2012	2013	
Benefits																						
Ord. & suppl. child benefit	214	214	214	214	214	214	214	194	196	200	201	198	198	N/A	1.10	1.09	1.07	1.06	1.08	1.08	N/A	
Benefit for student parents	0.22	0.22	0.22	0.22	0.22	0.22	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Child family grant	1193	1193	1193	1193	1193	1193	1193	1200	1206	1207	1203	1207	1192	N/A	0.99	0.99	0.99	0.99	0.99	1.00	N/A	
Housing benefit	568	562	556	561	562	565	568	187	183	187	203	208	217	N/A	3.04	3.07	2.98	2.76	2.70	2.60	N/A	
Housing grant	244	247	249	246	249	247	244	317	311	304	299	295	292	N/A	0.77	0.80	0.82	0.82	0.84	0.85	N/A	
Green check	0	0	0	3482	3442	3401	3362	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Social assistance	137	137	137	137	137	137	137	139	137	160	168	176	N/A	N/A	0.99	1.00	0.86	0.82	0.78	N/A	N/A	
Unemployment benefit	275	275	275	275	275	275	275	233	198	288	320	319	N/A	N/A	1.18	1.39	0.96	0.86	0.86	N/A	N/A	
Old-age pension	840	840	840	840	840	840	840	851	867	884	921	953	989	1021	0.99	0.97	0.95	0.91	0.88	0.85	0.82	
old age pension supplement	814	813	813	814	814	814	814	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Supplementary pension benefit	307	331	338	332	348	326	318	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Taxes and Social Insurance contributions																						
Church tax	2809	2811	2808	2815	2819	2816	2818	3431	3406	3381	3392	3383	N/A	N/A	0.82	0.83	0.83	0.83	0.83	N/A	N/A	
Health contribution	4107	4109	4105	4115	4120	4117	4119	4140	4142	4125	4165	4175	N/A	N/A	0.99	0.99	1.00	0.99	0.99	N/A	N/A	
Earned income tax credit	3153	3153	3153	3153	3153	3153	3153	2761	2810	2727	2656	2645	2623	N/A	1.14	1.12	1.16	1.19	1.19	1.20	N/A	
Bottom-bracket tax	4148	4149	4146	4154	4156	4157	4162	4161	4168	4148	4179	4189	N/A	N/A	1.00	1.00	1.00	0.99	0.99	N/A	N/A	
Medium-bracket tax	1137	1201	627	0	0	0	1217	1286	629	N/A	N/A	N/A	N/A	N/A	0.93	0.93	1.00	N/A	N/A	N/A	N/A	
Top-bracket tax	841	889	880	653	591	628	593	953	1003	928	648	678	N/A	N/A	0.88	0.89	0.95	1.01	0.87	N/A	N/A	
Municipality tax	4107	4109	4105	4115	4120	4117	4119	4126	4118	4106	4143	4149	N/A	N/A	1.00	1.00	1.00	0.99	0.99	N/A	N/A	
Property value tax	1535	1535	1535	1535	1535	1535	1535	2040	2060	2066	2073	2070	N/A	N/A	0.75	0.75	0.74	0.74	0.74	N/A	N/A	
Labour market contribution	3177	3177	3177	3177	3177	3177	3177	3095	3099	3058	3006	3014	N/A	N/A	1.03	1.03	1.04	1.06	1.05	N/A	N/A	
Suppl. lab. market contrib.	2679	2679	2679	2679	2679	2679	2679	3045	3066	3031	3045	N/A	N/A	N/A	0.88	0.87	0.88	0.88	N/A	N/A	N/A	
Contr. to unempl.insurance and early retirement scheme	1637	1637	1637	1637	1637	1637	1637	2206	2191	2200	2206	N/A	N/A	N/A	0.74	0.75	0.74	0.74	N/A	N/A	N/A	

Sources: StatBank, BTS55 (Ordinary Child allowance); StatBank, BTS55 (family Allowance+Youth allowance from 2011); StatBank, BOST33; StatBank, INDKP1 (18); StatBank, INDKP1(19); StatBank,PEN33; StatBank,PSKAT3; StatBank,PSKAT3; StatBank,PSKAT3; StatBank,PSKAT3; StatBank,PSKAT3; StatBank,PSKAT3; StatBank,PSKAT3; StatBank,PSKAT3; StatBank, INDKP1(32); Registry; Registry

Table 4.9-Distribution of equivalised disposable income

	EUROMOD							External					Ratio				
	2007	2008	2009	2010	2011	2012	2013	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
D1	4.29	4.37	4.41	4.33	4.37	4.29	4.25	3.6	1.4	1.9	2.3	2.3	1.19	3.12	2.32	1.88	1.90
D2	5.96	6.01	6.02	5.97	6	5.96	5.94	6	6.1	5.9	5.8	5.7	0.99	0.98	1.02	1.03	1.05
D3	6.89	6.98	6.94	6.92	6.92	6.87	6.83	7	7.2	7	6.8	6.8	0.98	0.97	0.99	1.02	1.02
D4	7.81	7.95	7.96	7.82	7.89	7.79	7.73	7.9	8.3	8	7.8	7.8	0.99	0.96	1	1	1.01
D5	8.68	8.87	8.91	8.74	8.82	8.69	8.62	8.8	9.2	9	8.7	8.7	0.99	0.96	0.99	1	1.01
D6	9.5	9.73	9.75	9.61	9.68	9.53	9.43	9.7	10.1	10	9.7	9.7	0.98	0.96	0.97	0.99	1.00
D7	10.43	10.65	10.72	10.58	10.67	10.51	10.42	10.7	11.1	11.1	10.8	10.8	0.97	0.96	0.97	0.98	0.99
D8	11.5	11.73	11.82	11.71	11.79	11.59	11.53	11.8	12.3	12.3	12.1	12.1	0.97	0.95	0.96	0.97	0.97
D9	13.08	13.34	13.45	13.39	13.5	13.33	13.23	13.5	13.9	13.9	14	13.9	0.97	0.96	0.97	0.96	0.97
D10	21.87	20.38	20.03	20.94	20.35	21.46	22.02	21.1	20.4	20.8	21.9	22.2	1.04	1	0.96	0.96	0.92
Median	179209	188610	196633	205489	210001	211558	214384	180015	186614	191127	196566	198037	1	1.01	1.03	1.05	1.06
Mean	196884	202690	210560	223480	226572	232017	236903	193939	193089	200417	212849	215055	1.02	1.05	1.05	1.05	1.05
Gini	24.77	23.45	23.21	24.13	23.61	24.6	25.12	25.1	26.9	26.9	27.8	28.1	0.99	0.87	0.86	0.87	0.84
S80/S20	3.41	3.25	3.21	3.33	3.26	3.39	3.46	3.6	4.6	4.4	4.4	4.5	0.95	0.71	0.73	0.76	0.72

Source: Eurostat

Table 4.10-Poverty rates by gender and age

	EUROMOD							External					Ratio				
	2007	2008	2009	2010	2011	2012	2013	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
40% median HDI																	
Total	2.09	2.1	2.17	2.2	2.18	2.2	2.21	3.6	4.3	5	4.9	5	0.58	0.49	0.43	0.45	0.44
Male	2.66	2.66	2.74	2.8	2.75	2.8	2.78	3.6	4.5	5.2	5.4	5.4	0.74	0.59	0.53	0.52	0.51
Female	1.52	1.55	1.62	1.62	1.63	1.62	1.65	3.2	4	4.7	4.5	4.6	0.48	0.39	0.34	0.36	0.35
50% median HDI																	
Total	4.6	4.48	4.47	4.49	4.54	4.55	4.68	6.2	7.2	7.9	7.5	7.7	0.74	0.62	0.57	0.6	0.59
Male	5.16	5.03	5.02	5.03	5.09	5.14	5.25	6.4	7.6	8.3	8.3	8.2	0.81	0.66	0.6	0.61	0.62
Female	4.05	3.93	3.94	3.95	4	3.97	4.12	6	6.8	7.6	6.7	7.1	0.67	0.58	0.52	0.59	0.56
60% median HDI																	
Total	10.59	11.2	11.23	10.79	10.89	10.58	10.28	11.8	13.1	13.3	13	13.1	0.9	0.85	0.84	0.83	0.83
Male	10.27	10.99	11.03	10.61	10.72	10.28	10.11	11.7	12.8	13.1	13	13.3	0.88	0.86	0.84	0.82	0.81
Female	10.89	11.4	11.43	10.96	11.05	10.88	10.44	12	13.4	13.4	13	12.9	0.91	0.85	0.85	0.84	0.86
70% median HDI																	
Total	19	20.08	20.23	19.93	20.16	19.29	19.02	19.7	20.5	21.5	21.3	21.4	0.96	0.98	0.94	0.94	0.94
Male	18.24	19	18.92	18.8	18.95	18.35	18.2	18.7	19.8	20.9	20.3	21.1	0.98	0.96	0.91	0.93	0.9
Female	19.75	21.13	21.5	21.03	21.35	20.22	19.82	20.7	21.1	22.1	22.2	21.7	0.95	1	0.97	0.95	0.98
60% median HDI																	
0-15	7.96	7.74	7.75	8.08	7.71	8.24	8.18	9.3	10.6	10.7	10.3	10	0.86	0.73	0.72	0.78	0.77
16-24	26.37	28.1	28.13	28.35	28.3	27.62	26.77	27.4	28.5	32.2	35	33	0.96	0.99	0.87	0.81	0.86
25-49	8.57	8.44	8.5	8.61	8.44	8.65	8.63	10	10.9	11.6	10.9	12.2	0.86	0.77	0.73	0.79	0.69
50-64	5.11	5.03	5.34	5.3	5.24	5.23	5.46	4.6	5.4	5.7	4.9	5.1	1.11	0.93	0.94	1.08	1.03
65+	14.95	18.37	18.03	14.45	16.01	13.41	11.84	18.1	20.1	17.7	16	14.1	0.83	0.91	1.02	0.9	1.14

Source: Eurostat