EUROMOD

COUNTRY REPORT

SWEDEN (SE)
2016-2019

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EUROMOD version I2.0

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

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

This report documents the work done in one annual update for Sweden. This work was carried out by the EUROMOD core developer team, based 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 I2.0. 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.euromod.ac.uk/

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1. BASIC INFORMATION

1.1   Basic information about the tax-benefit system

- The tax-benefit system is largely a unified, national system.[1] Income tax is paid to the state, municipalities and county councils. Tax rates for the municipalities and county councils vary.

- The tax system generally changes in January each year. Main benefit changes happen at the same time, but may also be implemented in July. Both taxes and benefits can at rare occasions be changed at any month during the year.

- State pension age is flexible and varies from 61-67 years of age. 65 is the most common pensioning age.

- Minimum school leaving age is 16; dependent children are defined as aged under 16 or under 20 and in full-time upper secondary education.

- The income tax system is an individual system, with the spouses being assessed independently.

- The means-tested benefit system assesses entitlement according to benefit unit income. The benefit unit is the nuclear family - the couple (cohabiting or married) or single adult plus any dependent children.

- Social contributions and state benefits and pensions are usually assessed and delivered on a monthly basis. Amounts are referred to in monthly terms. The exception is income tax, where liability is based on annual income and allowances and thresholds are referred to in annual terms. Incomes related to means-tested systems are often defined in annual terms.

- Income tax withholdings are collected on a cumulative basis, i.e., the system tries to ensure withholding the exact amount due in the financial year. Most people however have to fill in an income tax return, which however can be very simple when the amounts are known by the tax authority. Wages and interests are normally pre-printed on the income tax return.

1.2   Social Benefits

1.2.1 Simulated Social Benefits.

Child benefit (Barnbidrag) is received for each child until 16 years. Child 2, 3, etc. gets extra benefit. If the child is in primary school, the child benefit is prolonged. If the child is in secondary school, he/she can get financial help during 10 months/ a year until 20 years of age with the same amount as the child benefit. The benefit is not taxable.

Housing allowance (Bostadsbidrag) can be given to families with children and to single and married/cohabiting families where all family members are 18-29 years old without children. The maximum allowance depends on the number of children and the housing cost (within certain limits). If the size of the dwelling exceeds a certain area, the accepted housing cost is proportionally reduced to match the maximum accepted area.

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[1] The way it operates in practice may vary across regions and by other characteristics.

Housing allowance for pensioners (Bostadstillägg, BT) can be given to old age pensioners and persons with disability pension. It is considered to be a part of the pension system. From the age of 65 you can get age allowance and for younger persons you can get disability allowance. The benefit is not taxable.

Social assistance (Ekonomiskt bistånd) is the ultimate and last part of the social safety net. It can be paid out if the family has temporary financial problems, or if the disposable income/month is too low. Two important conditions to get social assistance are that the family doesn't have any wealth and is willing to take a job if this is offered. The income limits for getting the benefit are based on the normative costs for a basket of commodities needed to get a reasonable standard of living. The income limits depend on the age of children, single or cohabitant couple, and the number of individuals in the family. Housing costs, and costs for health, dentist, furniture, local commuting, insurance and child care costs are not included in the normative costs. Actual costs are used instead. The benefit is not taxable.

Maintenance support for elderly (Äldreförsörjningsstöd) can be given to old individuals (>= 65 years) if their disposable income is below the limits for reasonable level of living. Normative rules are used for calculating the income. This benefit is valid for e.g. immigrants who don't have earned Swedish pension rights. The benefit is not taxable. The rules are quite similar to Social assistance and hence the Maintenance support will be simulated as part of the Social assistance.

Unemployment insurance benefit (Arbetslöshetsförsäkring) consists of a mandatory part (basic insurance) and a voluntary income related insurance. Membership of an unemployment insurance fund is voluntary. However, eligibility for unemployment insurance benefits requires membership for 12 months prior to the first day of unemployment. If a person is not a member of unemployment insurance fund the daily allowance is 223 SEK. However, if the person is not enrolled in the unemployment insurance fund, but has worked for at least 80 hours per month during at least 6 months in the past 12 months, then is entitled to receive 365 SEK per day. The benefit is taxable.

Parental leave insurance (Föräldraförsäkringen) consists of parental benefit (simulated for some years and switched off in the baseline), temporary parental benefit (not simulated), pregnancy benefit (not simulated), and special days for the other parent (simulated for some years and switched off in the baseline). All parts are taxable benefits.

Parental benefit (**Föräldrapenning**) is the biggest part of the parental leave insurance and which all parents are eligible to. For each birth the parents receive 480 days with parental benefit. Of these days the benefit for 390 days is based on the parent's income and 90 days are on a basic level. The days can be used from 60 days before the expected birth. If the child was born in 2013 or earlier, the days can be used until the day when the child is 8 years old, or has passed the first year at school. If the child was born in 2014 or later, the days can be used until the day when the child is 12 years old, or has passed the fifth year at school, but 80 percent of the days must be used before the child becomes four years old. Both parents have the right to half of the days, but can give up all days (up to 90) to the other parent. It is possible to get the benefit full time or part time. If the parents get twins they receive 180 days extra, 90 days with benefit based on their income and 90 days according to the basic level.

Special days for the other parent (10-dagar vid barns födelse). The parent who is not pregnant has the right to temporary parental benefit for 10 days when the baby is born or adopted. The days have to be used within 60 days after the child's arrival at home. The benefit rules are the same as for the temporary parental benefit.

1.2.2 Non simulated social benefits

Sickness benefit (Sjukpenning) Sickness insurance provides compensation in the event of sickness that reduces work capacity by at least one-quarter. Sickness benefit is based on the sickness benefit qualifying annual income (SGI). In principle the income is supposed to correspond to the annual income before tax, non-monetary taxable benefits should not be included. The SGI is determined by the Social Insurance Agency. Sick pay is paid by the employer for the first 14 days period and thereafter the Social Insurance Agency pays sickness benefit. No compensation is paid on the first day (the qualifying day). If an individual is unemployed the maximum benefit is the same as the unemployment insurance. The benefit is taxable.

Temporary parental benefit. For children under the age of 12 (and in certain cases under 16) temporary parental benefit can be paid. The benefit can be paid for 60 (+ 60 additional days) working days per year, when a parent needs to stay away from work. Parents of a seriously sick child can get an unlimited number of days until the age of 18. It is possible to get the benefit full time or part time.

Pregnancy benefit. If the work conditions make it impossible to work, a pregnant woman can apply for pregnancy benefit during maximum 50 days. The benefit rules are the same as for the sickness benefit.

Special housing allowance for pensioners (SBT, Särskilt Bostadstillägg) can be paid out if the disposable income is low and the housing cost is high. The amounts vary with age, disability and marital status (single/married). The benefit is not taxable.

Old age pension (Ålderspensionen). The mandatory parts of the age-pension are under the process of changing from the old system (born 1937 or earlier) to the new system which started in 2003. Pensioners born in 1938 or later are gradually subject to a new system. From age class 1954 the new system is fully implemented. For age classes 1938-1953 the benefits are partly from the old system and partly from the new system. If born in 1953, 1/20 comes from the old system and if born in 1938 16/20 comes from the old system.

The old system consists of a supplementary pension and a guarantee pension. The supplementary pension is based on the average of the 15 years with the highest work income. Only incomes up to 7.5 income base amounts/year (7.5*64,400 SEK in 2019) are included. The supplementary pension is indexed with the average salary minus 1.6 percentage points.

If the supplementary pension is low, guarantee pension can be achieved. For a single pensioner the maximum guarantee is 2.17 price basic amounts/year and is reduced with increased supplementary pension. For a married pensioner the maximum is 1.935 price basic amounts.

In the new system income related pension can be earned during the whole lifetime. 18.5% of the earnings finance the earned pension rights (up to 7.5 income base amounts). 16% are going to public funds, which you cannot handle yourself. 2.5% goes to private funds, where you can decide how it should be composed. Over time the pension funds rise with the average wage in the whole economy. The earliest pensionable age is 61 years, but there is no last pension age, even if traditionally many retire at the age of 65. You also have legal right to work until the end of the month of your 67th birthday. At the age for retirement the pension is determined by the total pension rights divided with the expected number of remaining years to live. After retirement the pension is indexed with the average salary minus 1.6 percentage points.

If the related income is too low, guarantee pension can be achieved from the age of 65. The maximum value is 2.13 price base amounts for unmarried and 1.90 for married people.

Both in the old and new system, not only earnings but also insurance benefits like sickness, unemployment and parental leave benefits give pension rights.

In the new system you also get pension rights when studying, doing military (duty) service or taking care of small children (up to 4 years of age).

In addition to the mandatory pension most employees have occupational pensions, with different rules for different sectors of the labour market. Typically, the employers pay a fee between about 3,5% and 4.5% of the salary. For all contracting parties, except private and cooperative workers, the employers also give an extra compensation for income shares above the income ceiling for the mandatory pensions.

All pensions are taxable. It is possible to retire full-time or part-time.

Disability pension (Sjukersättning/aktivitetsersättning). If disabled or so sick or so injured, that you cannot work any longer, you can get disability pension in the form of *sjukersättning* (if aged 30-64) or *aktivitetsersättning* (if aged 19- 29). The benefit is taxable.

Disability pension (Sjukersättning (aged 30-64 during 2016 and aged 19-64 from 2017). The benefit can be income related or a guarantee benefit. The income related benefit is 64,7 percent of an expected income up to a certain level, as if the ability to work had not decreased. The assumed forecasted income is based on the average of the 3 highest annual incomes within a number of years before the person became sick. The number of years depends on the age of the person. The guarantee benefit is 2,53 price base amounts in 2019.

Disability pension (Aktivitetsersättning (aged 19-29 years)). They can only get time-limited benefit. The assumed income can be based on the 2 highest annual incomes if that gives a higher assumed income. The income related benefit is the same as for older persons but the guarantee benefit is 2,23-2,48 price base amounts (2019) depending on the age of the person.

Not strictly benefits

Maintenance support (Underhållsstöd). When a child lives with only one parent, the other parent must pay child support (underhållsbidrag). If child support is not received, the child may be entitled to maintenance support. This is a benefit for children whose parents do not live together. The size of the maintenance support is depending of the age of the child. It is at most SEK 1573-2073 (2019) per child and month, and is paid to the parent with whom the child lives

Childcare allowance (Vårdbidrag) Parents taking care of a sick child or a child with a disability can obtain childcare allowance. The child must need special supervision and care for at least six months. The childcare allowance can also be obtained by families having large additional expenses due to the child's disability or illness. The childcare allowance can be obtained from the time of the child's birth until the month of June in the year the child attains the age of 19.

Student aid (studiemedel) Students attending a college or university can apply for student aid. Student aid includes both grants and loans. The student can chose between applying only for the grant or applying for both grant and loan. The loan has to be paid back during a number of years after the studies are finished. The amount of student aid received depends on the number of weeks of studying and if full-time or part-time studies.

1.3   Social contributions

Social contributions refer to health insurance, parental insurance, occupational injuries, old age pension, survivors pension, labour market, general wage fee and a special wage tax (for persons older than 65 years).

Employees pay a general social security contribution, around 7.0 % of the gross salary.

The employer pays social contributions as a proportion of the gross salary. Mostly they are treated together, summing up at almost 33%.

Farmers and self-employed also pay social contributions but as proportion of the net income. Persons below 66 years of age pay all the social contributions: Persons born before 1938 only pays a special wage tax for elderly and those born 1938 and older than 65 years pays this tax together with the old age pension contribution.

1.4   Taxes

The Swedish system for direct taxes includes income taxes, capital tax and tax on real estate. The sum of taxes cannot be negative.

Indirect taxes. The VAT is 25 % as the normal level and for some goods i.e. food it is 12 % and there is also some goods i.e. books and newspapers with 6 %.

There are taxes on alcohol and tobacco, on traffic and a number of energy related taxes.

14.1   Simulated taxes

Income tax (Inkomstskatt) is assessed individually. Earnings, insurance benefits like sickness benefit, pensions etc. are included in the tax base. Costs for work to a limited amount and private premiums to a limited amount for retirement are deducted from the tax base. The result is called assessed income. From the assessed income the basic allowance is deducted according to a rather complex formula. The result is called taxable income, on which the tax schedule is applied. All amounts are expressed in annual terms.

The national income tax is only paid on taxable incomes above a certain amount and there are two tax rates. Local taxes are assessed at Municipality and County level. All municipalities (about 300) and county councils (about 25) have taxation rights. The tax is proportional to the taxable income.

Everybody pays a funeral fee which is used for the care of cemeteries and premises for funeral ceremonies. It is not connected to individual's funerals.

Capital tax (Kapitalskatt) is a national individual tax. The tax base consists of capital income and is separate from the national income tax. The general tax rate is 30%, but special rules in specific parts lead to different (lower) tax rates than the general one. If the taxable income is negative this leads to tax reduction on the final tax (sum of local tax and national tax). It is especially common for loans on owned houses.

The tax base consists of interests, cost of interest, interests on bonds, shares, funds etc., capital gains and capital losses on shares, funds, real estate.

1.4.2   Non simulated taxes

 Tax on real estate. As from 2008 government property tax on dwellings was abolished and replaced by a municipal property charge. Tax on real estate is included in the SILC data (EUROMOD variable: tpr).

2. SIMULATION OF TAXES AND BENEFITS IN EUROMOD

2.1 Scope of simulation

Table 2.1 and Table 2.2 show respectively the benefits and taxes and contributions which are included (i.e. not simulated but included using the value recorded in the survey) or simulated in EUROMOD.

Table 2.1 Simulation of benefits in EUROMOD

	Variable name(s)	Treatment in EUROMOD				Why not fully simulated?
		2016	2017	2018	2019	
Unemployment benefit	bunct	PS	PS	PS	PS	Unemployment benefit is not simulated in the baseline year and is set to toggle as it is not possible to define contribution record and past earnings.
Unemployment benefit	bunnc	I	I	I	I	
Parents' allowance	bpl	I	I	I	I	
Sickness benefit	bhl	I	I	I	I	
Education related allowance	bed	I	I	I	I	Lack of info in input data.
Disability benefits	pdi	I	I	I	I	
Old age pensions	poa	I	I	I	I	
Survivors pensions	psu	I	I	I	I	
Child benefit	bch_s	S	S	S	S	
Housing allowance	bho_s	S	S	S	S	
Housing allowance for pensioners	bhope_s	S	S	S	S	
Social Assistance	bsamt_s	S	S	S	S	
Social Assistance	bsamt_s	I	I	I	I	Lack of info in input data.

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?
		2016	2017	2018	2019	
Employee social contributions	tscee_s	S	S	S	S	
Employer social contributions	ils_sicer	S	S	S	S	
Self-employed social contributions	ils_sicse	S	S	S	S	
Personal income tax	tin_s	S	S	S	S	
Tax on capital income	tinkt_s	S	S	S	S	
Tax on real estate	tpr	I	I	I	I	Lack of info in input data. This includes repayment of student loan

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; "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

Structural changes

In 2016, the allowance for voluntary private pension contributions was abolished. Also, in 2016 the unemployment benefits payments were increased.

In 2018, a disability tax credit was introduced for persons receiving disability pension.

2.2   Order of simulation and interdependencies

Social contributions are simulated first, in order to allow the employee social insurance contributions to be subtracted from the income tax. Then, the income tax is simulated in all its components followed by the tax on capital income. The simulation of the non-taxable benefits follow: child benefit, housing allowance and housing allowance for pensioners. The social assistance is the last benefit simulated because it includes all previous simulated benefits and taxes in its means-test.

In the simulation of the tax benefit system, the price base amount is used repeatedly and in one case also the income base amount. They are defined as "constants" in the policy sheet ConstDef. The price base amount (XBASM) is an amount established by the government for one year at a time and is adjusted annually. It is used for calculations of pensions, sickness benefit and allowances for example. The income base amount (XBASMI) is linked to the "income index" and was introduced in connection with the pension reform. The income index measures the average income change in Sweden.

Table 2.3 EUROMOD Spine: order of simulation

Policy	SE_2016	SE_2017	SE_2018	SE_2019	Comment
setdefault_se	on	on	on	on	DEF: SET DEFAULT
uprate_se	on	on	on	on	DEF: UPRATING FACTORS
ConstDef_se	on	on	on	on	DEF: CONSTANTS
ilsdef_se	on	on	on	on	DEF: INCOME CONCEPTS (standardized)
ilsUDBdef_se	on	on	on	on	DEF: INCOME CONCEPTS (UDB)
ildef_se	on	on	on	on	DEF: INCOME CONCEPTS (non-standardized)
tudef_se	on	on	on	on	DEF: ASSESSMENT UNITS
yem_se	off	off	off	off	DEF: minimum wage
neg_se	on	on	on	on	DEF: recode negative self-employment income to zero
bunct_se	toggle	toggle	toggle	toggle	BEN: Unemployment benefit
tscee_se	on	on	on	on	SIC: Employee Social Insurance contribution
tscer_se	on	on	on	on	SIC: Employer Social Insurance contribution
tscse_se	on	on	on	on	SIC: Self-employed Social Insurance contribution
tin_se	on	on	on	on	TAX: Personal Income tax
tinkt_se	on	on	on	on	TAX: Tax on Capital Income
bch_se	on	on	on	on	BEN: Child benefit
bho_se	on	on	on	on	BEN: Housing allowance
bhope_se	on	on	on	on	BEN: Housing allowance for pensioners
bsamt_se	on	on	on	on	BEN: Social Assistance
output_std_se	on	on	on	on	DEF: STANDARD OUTPUT INDIVIDUAL LEVEL
output_std_hh_se	off	off	off	off	DEF: STANDARD OUTPUT HOUSEHOLD LEVEL

Table 2.3.1 Annual Base amounts

	2016	2017	2018	2019
XBASM	44,300	44,800	45,500	46,500
XBASMI	59,300	61,500	62,500	64,400

Notes. XBASM: price base amount. XBASMI: income base amount

2.3   Social benefits

2.3.1   Unemployment insurance benefit (bunct_s)

- *Definitions*

Unemployment insurance benefit consists of a mandatory part (*basic insurance*) and a *voluntary income related insurance*. Membership to an unemployment insurance (UI) fund is voluntary. The daily allowance, paid five days a week, is based on the income received the 12 months before the unemployment (the amount received is equal to the basic amount or 80% of previous gross earnings with a maximum limit).

- *Eligibility conditions*

Eligibility for unemployment insurance benefits requires membership to an unemployment insurance fund for 12 months prior to the first day of unemployment and having worked for at least 80 hours per month during at least 6 months during the last 12 months. In the recent past, most of the Swedes were members of an unemployment insurance fund (in the simulation, we will assume that such an eligibility condition is satisfied).

If a person is not a member of unemployment insurance fund, instead of the basic amount she receives a daily allowance (5 days per week) equal to 223 SEK. However, if the person is not enrolled in the unemployment insurance fund, but has worked for at least 80 hours per month during at least 6 of the past 12 months, then is entitled to receive 365 SEK per day.

It is possible to get the benefit full-time or part-time. No compensation is paid in the first seven days (the qualifying days). From 1 July 2018 no compensation is paid for the first six days (the qualifying days) The self-employed are also eligible to the benefit in case their business closes down. The benefit is taxable.

- *Income test*

The daily allowance, paid five days a week, is based on the income received the 12 months before unemployment (the amount received is equal to the basic amount or 80% of previous income with a maximum limit).

- *Benefit amount*

The benefit is calculated according to the rules summarized in the table below.

Table 2.4.1 Unemployment benefits 2016-2019

Days	Basic amount SEK/day	Compensation (as a share of previous income)	Upper limit SEK/day
Year 2016- (parent with child)			
1-100	365	0.8	910
101-200	365	0.8	760
201-450	365	0.7	760
450*-	365	0.65	760
Year 2016-			
1-100	365	0.8	910
101-200	365	0.8	760
201-300	365	0.7	760
301*-	365	0.65	760

Notes: *Individuals participating in a public employment service program receive a special unemployment benefit (activity grant), which they can receive as long as you are taking part in the program, i.e. more than 450 days (parents with children) or more than 300 days (if no children).

The following table summarises the main characteristics of unemployment insurance benefit in Sweden.

Characteristics of the unemployment benefit

		2016	2017	2018	2019
Eligibility	Contribution period	6 out 12 last months	6 out 12 last months	6 out 12 last months	6 out 12 last months
	Other conditions	Membership to UI fund	Membership to UI fund	Membership to UI fund	Membership to UI fund
	Eligibility of self-employed	Yes	Yes	Yes	Yes
Payment	Contribution base	gross earnings (12 months before)	gross earnings (12 months before)	gross earnings (12 months before)	gross earnings (12 months before)
	Basic amount	365 SEK/day or 80% of previous earnings (decreasing to 65%)	365 SEK/day or 80% of previous earnings (decreasing to 65%)	365 SEK/day or 80% of previous earnings (decreasing to 65%)	365 SEK/day or 80% of previous earnings (decreasing to 65%)
	Additional amount	N/A	N/A	N/A	N/A
	Floor[a]	365 SEK/day	365 SEK/day	365 SEK/day	365 SEK/day
	Ceiling[a]	910 SEK/day	910 SEK/day	910 SEK/day	910 SEK/day
Duration	Standard (in months)	300 days	300 days	300 days	300 days
	Special cases (in month)	450 days (parent with child)	450 days (parent with child)	450 days (parent with child)	450 days (parent with child)
Subject to	Taxes	Yes	Yes	Yes	Yes
	SIC	Yes	Yes	Yes	Yes

Notes: [a] The floor and ceiling are defined for full-time workers. For individuals working less than fulltime, the floor and ceiling are scaled down in proportion to their working time.

EUROMOD notes

Effectively, this benefit is only partly simulated using the information about actual receipt and it is switched off in the baseline. Rather than only using the observed receipt as part of the eligibility criteria, all eligibility rules in full detail are covered. However, as not all required information (e.g. work history) is available several assumptions are made, including considering some rules automatically fulfilled for those observed in receipt of this benefit. This approach is chosen so that the benefit can be also modelled for those currently employed if needed (e.g. to simulate their entitlement if they become unemployed, for replacement rates calculations).

Unemployment duration (lunmy_s) is set equal to the minimum between the maximum duration according to the national rules or the maximum of observed unemployment duration (lunmy) and observed benefit receipt (bunmy). If modelling unemployment benefit for those currently employed, unemployment duration is set equal to the minimum between the maximum duration according to the national rules or the reported number of months in employment in the current year (liwmy), once contribution history (see the next step) is modelled. It is effectively also assumed that unemployment spells start in the reference year.

Modelled contribution history is based on the reported number of months in employment (liwmy), controlling for the total number of months in work (liwwh).

- For those currently employed (lnu>0), this is used.

- For those currently unemployed (lunmy_s > 0) and in receipt (bunct > 0), this is set at least equal to the minimum qualifying period.

- For those currently unemployed (lunmy_s > 0) and not in receipt (bunct = 0), this is set to zero.

At this point, people who are unemployed (lunmy_s > 0), have not reached retirement age yet and have sufficient contribution history are considered eligible. In our simulations we assume that all employees fulfil the eligibility condition of being a member of an unemployment insurance fund for at least 12 months. On the contrary, it is assumed that the self-employed are not members of an unemployment insurance fund and are therefore entitled only to the daily allowance. Part-time benefit is not simulated as no information about whether part-timers are seeking for full-time work or not is available.

Benefit duration (bunmy_s) is simply set equal to the unemployment duration (lunmy_s) as long as this is smaller than the maximum duration according to the national rules. The standard maximum duration is 300 months but in case of parents with children it is 450 days.

Benefit entitlement is calculated based on the variable previous earnings, which is equal to current earnings for those in work and which is obtained by reverse engineering starting from the unemployment benefit amount for the unemployed.

2.3.2   Child benefit (bch_s)

- *Definitions*

The child benefit is a universal benefit received by parents having children in the age 0-15 years or until 18 years if in upper secondary school.

- *Eligibility conditions*

If having children aged 0-15 years or until 18 years if in upper secondary school the family receives this benefit.

The assessment unit is the nuclear family (tu_bch_se), including cohabiting partners and children aged below 16 years or until 18 years if in upper secondary school.

Children, who are themselves parents, count as children as well.

- *Income test*

Not applicable.

- *Benefit amount*

Child benefit's basic amount is for each child until 16 years of age. From the second child on, there is an extra benefit in addition to the basic amount. If the child is student in a lower secondary school (dec =3), the child benefit is prolonged until he completes the primary school. The child benefit is received 12 months a year.

Children aged 16-20 years and studying in upper secondary school (dec= 4) receive the basic amount of the child benefit (i.e. study allowance) 10 months a year. The extra amount is paid 12 months per year.

The extra amount is based on the number of children receiving child benefit and study allowance.

The benefit is not taxable.

Table 2.4.2 Child benefit monthly amounts – 2016-2019

Child number	Basic amount		Extra amount	
	2016-2017	2018-2019[a]	2016	2017-2019
1	1,050	1,250	0	0
2	1,050	1,250	150	150
3	1,050	1,250	454	580
4	1,050	1,250	1010	1,010
5	1,050	1,250	1,250	1,250
Next child	1,050	1,250	1,250	1,250

Notes: [a] The increase was introduced in 1/3 2018

- *Allocation of the benefit within the family*

The benefit (basic and extra amount) for children until 18 years is by default split evenly between the parents if they have joint custody, otherwise it is paid to the parent with sole custody. The basic amount for children older than 18 years is paid directly to the children. The extra amount (12 months per year) is always received by the parents.

2.3.3   Housing allowance (bho_s)

- *Definitions*

The unit of assessment is the family.

- *Eligibility conditions*

Housing allowance can be given to families (tu_bho_se) with children (up to 18 years old, or aged under 20 and receiving the basic amount of child benefit (dec = 4)) and to single and married/cohabiting couples without children where at least one family member is 18-29 years old. The maximum allowance depends on the number of children and the housing cost (within certain limits). If the size of the dwelling exceeds a certain area in m^2, the accepted housing cost is proportionally reduced to a minimum value.

In multi-family households, the housing allowance is given only to the main family unit (responsible for the house, i.e. xhc >0).

Housing allowance below 100 SEK/month is not paid out. The benefit is not taxable.

- *Income test*

For annual incomes above 58,500 SEK until 2016 and above 63,500 from 2017 and from 2018 67,500 and from 2019 71,000 for each parent or 117,000 SEK until 2016 and from 2017 127,000 SEK and from 2018 135,000 and from 2019 142,000 for lone parents the allowance is reduced by 20%. For a lone youngster the allowance is reduced by 33% for annual incomes above 41,000 SEK and for young couples without children, the reduction is 33% above 58,000 SEK.

The wealth of the family (property excluded) exceeding 100,000 SEK is added to the income by 15 % (afc00_s).

For calculating the housing allowance the following individual income concept for each adult in the family is considered:

Income (il_means_bho) = (Employment income (yem) + fringe benefits (kfb) + Private pensions (ypp) + Unemployment benefits (bunct + bunnc) + Old age pension (poa) + Survivor' pension (psu) + Sickness benefit (bhl) + Disability benefit (pdi) + property income (ypr) + investment income (yiy) + self-employment income (yse) + maintenance payments received (ypt) + 34% of education allowances (bed) + parents' allowance (bpl) + 15% of wealth (afc00_s, divided by two if there are two partners)

Losses due to self-employment are set to 0.

EUROMOD notes

For housing cost the variable xhc is used, which is a proxy of the housing cost considered in the assessment of the allowance.

In the system there are limitations on size in m^2 for the flat; those limitations cannot be simulated.

- *Benefit amount*

Families with children:

The housing allowance is calculated as the sum of a *special component* for families with children and a *rent component*:

- The special component for families with children (sin01_s) is given in the table below

- The rent component (sin02_s) is calculated as follows:

Rent component = (min(xhc , upper level) – lower level)*0.5

according to the lower and upper values reported in the following table:

Housing allowance parameters – Families with children – 2016- 2019

Number of children	Rent component		Special component
	Lower level SEK/month	Upper level SEK/month	SEK/month
1	1,400	5,300	1,500
2	1,400	5,900	2,000
3 and more	1,400	6,600	2,650

Reduction of the housing allowance

The housing allowance is then reduced following the same rules in 2016, which vary according to the typology of the recipient:

- Married or cohabiting partner (the following applies to each partner separately, yearly amounts – sin05_s):
Final Housing allowance = Housing allowance – 0.20(max((il_means_bho – 58,500), 0))

- Lone parents (yearly incomes, sin06_s):
Final Housing allowance = Housing allowance – 0.20(max((il_means_bho – 117,000))

The housing allowance is then reduced following the rules in 2017, which vary according to the typology of the recipient:

- Married or cohabiting partner (the following applies to each partner separately, yearly amounts – sin05_s):
Final Housing allowance = Housing allowance – 0.20(max((il_means_bho – 63,500), 0))

- Lone parents (yearly incomes, sin06_s):
Final Housing allowance = Housing allowance – 0.20(max((il_means_bho – 127,000))

The housing allowance is then reduced following the rules in 2018, which vary according to the typology of the recipient:

- Married or cohabiting partner (the following applies to each partner separately, yearly amounts – sin05_s):
Final Housing allowance = Housing allowance – 0.20(max((il_means_bho – 67,500), 0))

- Lone parents (yearly incomes, sin06_s):
Final Housing allowance = Housing allowance – 0.20(max((il_means_bho – 135,000))

The housing allowance is then reduced following the rules in 2019, which vary according to the typology of the recipient:

- Married or cohabiting partner (the following applies to each partner separately, yearly amounts – sin05_s):

Final Housing allowance = Housing allowance – 0.20(max((il_means_bho – 71,000), 0))

- Lone parents (yearly incomes, sin06_s):
Final Housing allowance = Housing allowance – 0.20(max((il_means_bho – 142,000))

Young families below the age of 29 without children
.
The rent component (sin07_s) is calculated as reported in the following table:

Housing allowance parameters – Young families – 2016- 2019

Housing cost (xhc) SEK / month	Rent component
< 1,800	0
1,800 – 2,600	(xhc - 1,800) * 0.90)
2,600 – 3,600	(2,600 - 1,800) * 0.90 + (3,600 - xhc) * 0.65
>= 3,600	(2,600 - 1,800) * 0.90+(3,600 - 2,600) * 0.65

The housing allowance is then reduced according to the typology of the recipient:
-singles (yearly incomes, sin08_s):
Final Housing allowance = Housing allowance – 0.33(max((il_means_bho– 41,000), 0))

-married or cohabiting (the following applies to each partner separately, yearly amount, sin12_s):
Final Housing allowance = Housing allowance – 0.33(max((il_means_bho – 58,000), 0))

2.3.4 Housing allowance for pensioners (bhope_s)

- *Definitions*

The unit of analysis is the nuclear family (tu_bho_se), including the cohabiting partners and children up to 18 years old, or aged under 20 and receiving the basic amount of child benefit (dec =4). In multi-family households, the housing allowance is given only to the family who is responsible for the house (xhc > 0).

- *Eligibility conditions*

Housing allowance for pensioners can be given to age pensioners or disable pensioners. It is considered to be part of the pension system.

Families with persons older than 65 years or families with persons receiving disability pension (pdi) can receive this allowance (age allowance and disability allowance).

Housing allowance for pensioners below 25 SEK/month is not paid out. The benefit is not taxable.

- *Income test*

The allowance is diminished with the income over certain income limits, which are dependent of the recipients being married or not. Labour income is weighted less than pension income.

15% of the wealth (afc) of the family (divided by two if there are two partners) over 100,000 SEK for single and 200,000 SEK for cohabiting partner is considered as income.

For calculating the housing allowance for pensioners the following individual income concept ("reserved amount") for each elderly or disabled adult (if a child is living with his parents only the parents can receive the allowance) in the family is calculated for all years 2009-2017 and deducted from the means:

Housing allowance for pensioners – Reserved amount – 2016-2019

Condition	Reserved amount 2016-2017 (ydg01_s)	Reserved amount 2018-2019 (ydg01_s)
pdi > 0 and age <= 20	2.1*XBASM	2.23*XBASM
pdi > 0 and 20 < age <= 22	2.15*XBASM	2.28*XBASM
pdi > 0 and 22 < age <= 24	2.2*XBASM	2.33*XBASM
pdi > 0 and 24 < age <= 26	2.25*XBASM	2.38*XBASM
pdi > 0 and 26 < age <= 28	2.3*XBASM	2.43*XBASM
pdi > 0 and 28 < age <= 29	2.35*XBASM	2.48*XBASM
pdi > 0 and age >= 30	2.4*XBASM	2.53*XBASM
Single, age > 65 and pdi = 0	2.17*XBASM	2.17*XBASM
Married or cohabiting, age > 65 and pdi=(	1.935*XBASM	1.935*XBASM

Notes: [a] The increase was introduced in 1/7 2018

For person younger than 65 years
Income (il_means_bhope) = Old age pension (poa) + Disability benefit (pdi) + investment income (yiy) + 0.8*(Private pensions (ypp) + fringe benefits (kfb) + Unemployment benefits (bunct + bunnc) + Sickness benefit (bhl) + parents' allowance (bpl)+ Survivor' pension (psu)) + property income (ypr) + 0.5 * (Employment income (yem) + self-employment income (yse)) + 0.15*wealth (afc00_s, divided by two if there are two partners) – reserved amount (ydg01_s).

For persons older than 64 years
Income (il_means_bhope) = Old age pension (poa) + Disability benefit (pdi) + investment income (yiy) + 0.8*(Private pensions (ypp) + fringe benefits (kfb) + Unemployment benefits (bunct + bunnc) + Sickness benefit (bhl) + parents' allowance (bpl) + Survivor' pension (psu)) + property income (ypr) + 0.5 *max((Employment income (yem)+ self-employment income (yse))-24000,0) + 0.15*wealth (afc00_s, divided by two if there are two partners) – reserved amount (ydg01_s).

This Income is calculated independently for the male and female partner in the family. If married or cohabiting then Income (sin02_s) = (Income_male + Income_female)/2

- *Benefit amount*

The maximum housing allowance (sin01_s) is calculated as follows per each entitled individual:

For 2016
- persons younger than 66 years and receiving disability pensions: 0.93* min((xhc-bho_s), upper level)

- persons older than 65 years and married: 0.95* min((xhc-bho_s) , upper level) +12*170
- persons older than 65 years and single: 0.95* min((xhc-bho_s) , upper level) +12*340

For 2017
- persons younger than 66 years and receiving disability pensions: 0.95* min((xhc-bho_s), upper level)
- persons older than 65 years and married: 0.95* min((xhc-bho_s) , upper level) +12*170
- persons older than 65 years and single: 0.95* min((xhc-bho_s) , upper level) +12*340

For 2018-
- persons younger than 66 years and receiving disability pensions: 0.96* min((xhc-bho_s), 5000)+0.7*(MAX(MIN(xhc-bho_s,5600)-5000,0))
- persons older than 65 years and married: 0.96* min((xhc-bho_s), 5000)+0.7*(MAX(MIN(xhc-bho_s,5600)-5000,0))+12*170
- persons older than 65 years and single: 0.96* min((xhc-bho_s), 5000)+0.7*(MAX(MIN(xhc-bho_s,5600)-5000,0))+12*340

Housing costs and Housing allowance are always considered at family level. If it is a cohabiting couple then the maximum allowance is divided by 2 (even in case only one partner is entitled to the allowance because each partner is expected to pay is part of the housing cost).

The upper levels of housing costs are reported in the following table:

Housing allowance for pensioners – Housing costs limits – 2016-2019

Year	Upper level housing cost Disability pens. SEK/month	Per cent benefit Disability pens.	Upper level housing cost Age pensioners SEK/month	Per cent benefit Age pensioners
2016	5,000	93	5,000	95
2017	5,000	95	5,000	95
2018	5,000	96	5,000	96
2018	5,600	70	5,600	70
2019	5,000	96	5,000	96
2019	5,600	70	5,600	70

The housing allowance for pensioners is then calculated for all persons in the family who are entitled (older than 65 or receiving disability benefit) according to the following rules:

Housing allowance for pensioners – Amounts – 2016-2019

Condition	Amount
per capita income (sin02_s) < XBASM	max((Indiv. maximum allowance - (sin02_s*0.62)), 0)
per capita income (sin02_s) >= XBASM	max((Indiv. maximum allowance - (XBASM*0.62) – ((sin02_s - XBASM)*0.5)), 0)

* The maximum housing allowance is calculated at individual level (sin01_s).

The total housing allowance for pensioners is given by the sum received by both partners (if entitled).

2.3.5   Social assistance (bsamt_s)

- *Definitions*

The unit of analysis is the nuclear family (tu_bho_se), including the cohabiting partners and children up to 18 years old, or aged under 20 and receiving the basic amount of child benefit (dec =4). In multi-family households, the social assistance is given to the family who is responsible for the hosing cost.

- *Eligibility conditions*

Social assistance is the ultimate and last part of the social safety net. It can be paid out if the family has temporary financial problems, or if the disposable income/month is too low. Two important conditions to get social assistance are that the family doesn't have any wealth (afc= 0) and is willing to take a job if offered. The income limits for getting the benefit are based on the normative costs for a basket of commodities needed to get a reasonable standard of living. The income limits depend on the age of children, single or cohabitant couple, and the number of individuals in the family. Housing costs, and costs for health, dentist, furniture, local commuting, insurance and child care costs are not included in the normative costs. Actual costs (xhc) are used instead. Income losses for self-employment income are not considered (i.e. set to 0). The benefit is not taxable.

- *Income test*

The family's needs are calculated as common needs plus personal needs depending of the age of the children and if the head of the family is single or not.

For example, a married couple with 2 children aged 4 and 8 years old have the following needs in 2019:

 2,120 (Child age 4) + 2,990 (child age 8) + 5,570 (Married couple) + 1,0 (family size=4)

The family's consumption needs are calculated according to the rules reported in the following tables:

Personal needs – Monthly amounts (SEK) – 2016-2019

Year \ Age	0	1-2	3	4-6	7-10	11-14	15-18	Single	Married/ cohabiting
2016	1,710	1,900	1,650	1,830	2,660	3,090	3,500	2,950	5,320
2017	1,730	1,920	1,670	1,850	2,690	3,120	3,540	2,980	5,370
2018	1,960	2,150	1,900	2,080	2,930	3,370	3,800	3,030	5,460
2019	2,000	2,190	1,940	2,120	2,990	3,440	3,880	3,090	5,570

Common needs – Monthly amounts (SEK) – 2016-2019

Number of family members	1	2	3	4	5	6	7+
2016	940	1,050	1,320	1,500	1,720	1,960	2,130
2017	950	1,060	1,330	1,520	1,740	1,980	2,150
2018	970	1,080	1,350	1,540	1,770	2,010	2,180
2019	990	1,100	1,380	1,570	1,810	2,050	2,220

- *Benefit amount*

Final amount of social assistance is given by the following formula:

If the household have had social assistance for 6 months or more when calculating net income the employment income (yem) shall be reduced with 25 %,

Personal needs + Common needs + housing cost (xhc) – net income (il_means_bsa)

2.3.6 Parental benefit (bfapl_s)

- *Definitions*

It is a benefit to all parents that provide care for children. The benefit can be used from 60 days before the expected birth until the child has finished their first year in compulsory school.

- *Eligibility conditions*

A parent to the child or the person who has the custody of the child is entitled to parental benefit. The child must be resident in Sweden or within the EU / EEA or Switzerland.

- *Benefit duration*

Parental benefit covers a total of 480 days, 240 days for each parent. Twin and triplet parents receive an additional 180 and 360 days respectively. In the case of two parents, both can stay home at the same time for maximum 30 days. A single parent is entitled to all days.

It is possible for the parents to divide the days by transferring days to each other. But for parents to children born in 2016 or later, 90 days are personal and cannot be transferred to the other parent (60 days in 2015). The remaining 300 days, or 150 each, can be transferred. It is thus possible for a parent couple to divide the days so that one gets 90 and the other 390 days.

The days can be used from 60 days before the expected birth until the child has finished their first year in compulsory school. If the child becomes 8 years old after school termination, parental benefit can be paid until the child reaches the age of 8 years.

If the child is born in 2014 or later, the custodian may take out parental benefit until the child reaches the age of 12 or when the child ends grade 5 of the compulsory school. However, from the child's 4th birthday, only 96 days can be saved. If you have twins, you can save 132 days in total.

- *Benefit amount*

For 390 of days, the remuneration is based on SGI (yearly income from work without deductions from any absence, i.e. monthly income * 12) (for people with both employment and

self-employment income, only the former is considered in the simulation). For these days parents receive 80% of the income up to 10 price base amounts. The resulting amount is reduced to 97%. The 90 (60 in 2015) personal days are paid at this rate. The minimum benefit (e.g. for parents with low or missing SGI) during these 390 days starting in 2016 is SEK 250 per day (225 in 2015). For the remaining 90 days the compensation is SEK 180 per day.

The first 180 days taken for the child must be days of sickness benefit. This also includes days of parental benefit taken before the birth of the child.

- *Subject to taxes/SIC*

The benefit is taxable.

- *Take up*

In 2010 (there aren't more recent figures), 12% of female parents did not use parental benefit days, while this was 68% for male parents.

- *EUROMOD notes*

This benefit and the following one are switched off in the baseline (therefore, those observed in the data are used). We assume that duration of the parental leave depends on the month of birth of a child. The month of birth is assumed to be equal to the middle month of the quarter of birth reported in SILC. If child's month of birth is unavailable, the assumption is that the child is born on June 30 (6th month of the year). Mother is assumed to be the main carer. Where mothers absent, fathers are assumed to receive the allowance for the same duration as mothers.

We assume that all women with eligible child have taken 60 days of parental leave before childbirth and all transferable days (390) right after the childbirth. For single parents this is extended to 480 days (including 60 days before childbirth). The families with twins get additional 180 days on top of that. The partners of main carers thus are eligible for 90 days. We assume that these 90 days are also taken in the first year of a child's life. We assume that the main carer gets max 300 days at the high replacement rate (80%), which means that the partner gets his/her 90 days at this rate too.

2.3.7   Special days for the other parent (bpa_s)

- *Definitions*

The parent who is not pregnant (mostly and assumed male) has the right to temporary parental benefit for 10 days when the child is born.

- *Eligibility conditions*

Parent to the child or the person who has the custody of the child is entitled to the benefit. The child must be resident in Sweden or within the EU / EEA or Switzerland

- *Income test*

There is no income test

- *Benefit duration*

The parent can receive the benefit for 10 days. These days must be taken within 60 days after the child has returned home

- *Benefit amount*

The amount is based on SGI. The remuneration is 80% of the income. The resulting amount is reduced to 97%. The maximum amount is 7.5 price base amounts.

- *Subject to taxes/SIC*

The benefit is taxable.

- *Take up*

N/A

2.4   Social contributions

2.4.1   Employee social contributions(tscee_s)

- *Liability to contributions*

All individuals residents in Sweden and born after 1937 with employment income (yem), fringe benefits (kfb), sickness benefit (bhl) or unemployment benefit (bunct + bunnc) larger than 1000 SEK per year have to pay the general social security contributions.

- *Income base used to calculate contributions*

The contribution base is calculated as follows:
- Initial Contribution base = (yem+kfb+bhl+bunct+bunnc)*12. This is rounded down to the nearest hundred SEK.
- Final Contribution base = min(Initial Contribution base , 8.07*XBASMI). This is rounded down to the nearest hundred SEK.

- *Contribution rates*

If the Final Contribution base is larger than XBASM * 0.423, then the Social contribution is 7% of the Final Contribution base. Otherwise no contribution is paid. The Social contribution is then rounded down to the nearest hundred SEK (tscee_s).

2.4.2   Employer social contributions (ils_sicer)

- *Liability to contributions*

All employers are liable to pay social contributions based on employment income (yem) and fringe benefits (kfb), if the annual amount is greater than 1,000 SEK.

- *Income base used to calculate contributions*

The employer social contributions are based on employment income (yem) and fringe benefits (kfb), if the annual amount is greater than 1,000 SEK.

- *Contribution rates*

There are 8 different employer social contributions: health insurance, parental insurance, occupational injuries, old age pension, survivors pension, labour market, general wage fee and a special wage tax(for persons older than 65 years).The rates are specified in the following tables.

Employer social contributions – Persons younger than 66 years old, 2016-2019

	2016	2017	2018	2019
Health insurance (tscersi_s)	0.0485	0.0435	0.0435	0.0355
Old age pension (tscerpi_s)	0.1021	0.1021	0.1021	0.1021
Survivors pension (tscerci_s)	0.0117	0.0070	0.0070	0.0060
Occupational injuries (tscerac_s)	0.0030	0.0020	0.0020	0.0020
Labour market (tscerir_s)	0.0264	0.0264	0.0264	0.0264
General wage fee (tscerot_s)	0.0965	0.1072	0.1072	0.1162
Parental insurance (tscerml_s)	0.0260	0.0260	0.0260	0.0260

Employer social contributions – Persons older than 65 years old and born after 1937, 2016-2019

	2016	2017	2018	2019
Old age pension (tscerpi_s)	0.1021	0.1021	0.1021	0.1021

Employer social contributions – Persons older than 65 years, 2016-2019

	2016	2017	2018	2019
Special wage tax for elderly	0.0615	0.0615	0.0615	0.0615

2.4.3 Self-employed social contributions(ils_sicse)

- *Liability to contributions*

The self-employed (lse > 0) pay social contributions.

- *Income base used to calculate contributions*

The social contribution is based on total self-employment income (yse) if the annual amount is greater than 1,000 SEK (if below no contribution is paid).

- *Contribution rates*

There are 8 different self-employed social contributions: health insurance, parental insurance, occupational injuries, old age pension, survivors pension, labour market, general wage fee and a special wage tax(for persons older than 65 years).The rates are specified in the following tables.

Self-employed social contributions – Persons 0-65 years of age, 2016-2019

	2016	2017	2018	2019
Health insurance (tscsesi_s)	0.0494	0.0444	0.0444	0.0364
Old age pension (tscsepi_s)	0.1021	0.1021	0.1021	0.1021
Survivors pension (tscseci_s)	0.0117	0.0070	0.0070	0.0060
Occupational injuries (tscseac_s)	0.0030	0.0020	0.0020	0.0020
Labour market (tscseir_s)	0.0010	0.0010	0.0010	0.0010
General wage fee (tscseot_s)	0.0965	0.1072	0.1072	0.1162
Parental insurance (tscseml_s)	0.0260	0.0260	0.0260	0.0260

Self-employed contributions – Persons older than 65 years old and born after 1937, 2016-2019

	2016	2017	2018	2019
Age	66- 77	66 – 78	66 – 79	66-80
Special wage tax (tscseot_s)	0	0	0	0
Old age pension (tscsepi_s)	0.1021	0.1021	0.1021	0.1021

Self-employed contributions – Persons older than 65 years, 2016-2019

	2016	2017	2018	2019
Special wage tax for elderly	0.0615	0.0615	0.0615	0.0615

EUROMOD Notes

A special wage tax should be paid by persons older than 65 year, but the base which is a small part of self-employment income (yse) cannot be created in EUROMOD.

2.5   Personal income tax

The main tax simulated for Sweden is the personal income tax which is divided into four parts: a government tax, a county council tax, a municipality tax and a funeral tax.

2.5.1   Tax unit

Personal income tax is assessed at individual level.

2.5.2   Exemptions

Child benefits, social assistance, housing allowance, housing allowance for pensioners and social assistance for elderly are exempted from income tax.

2.5.3   Taxable income

The taxable income (il_taxabley) includes: employment income (yem), fringe benefits (kfb), self-employment income (yse), parental leave benefit (bpl – parent's allowance at birth), income received by children (yot), Private pensions (ypp), Unemployment benefits (bunct + bunnc), Old age pension (poa), Disability benefit (pdi), Sickness benefit (bhl) and Survivor' pension (psu).

2.5.4   Tax allowances

Two tax allowances are simulated.

Allowance for voluntary Private Pension contributions (tintapv_s).

From 2016 and onwards, the allowance for voluntary private pension contributions are only for self-employed.

EUROMOD Notes

Due to lack of data, we do not simulate those rules which anyway affect only 3 percent of those claiming the allowance (i.e. having a higher value).

Basic allowance (tinta00_s)

The basic allowance (tinta00_s) is based on taxable income minus the allowance for voluntary Private Pension (il_taxabley_ppta).

Basic Allowance - 2016-2019

Taxable income minus allowance for Private pension		Allowance
Lower level	**Upper level**	
0	0.99*XBASM	min(il_taxabley_ppta, 0.423*XBASM)
0.99*XBASM	2.72*XBASM	0.423*XBASM+0.2*(il_taxabley_ppta -0.99*XBASM)
2.72*XBASM	3.11*XBASM	0.77*XBASM
3.11*XBASM	7.88*XBASM	0.77*XBASM-0.1*(il_taxabley_ppta -3.11*XBASM)
7.88*XBASM		0.293*XBASM

There is also an additional basic allowance for pensioners (over 65 years) (tintape_s):

Additional Basic Allowance for pensioners (over 65 years) – 2016-2019

Taxable income minus allowance for Private pension		Allowance
Lower level	**Upper level**	
2016-2017		
0	0.99*XBASM	min(il_taxabley_ppta, 0.687*XBASM)
0.99*XBASM	1.1*XBASM	0.885*XBASM-0.2* il_taxabley_ppta
1.1*XBASM	2.72*XBASM	0.609*XBASM+0.049* il_taxabley_ppta
2.72*XBASM	3.11*XBASM	0.741*XBASM+0* il_taxabley_ppta
3.11*XBASM	3.77*XBASM	0.430*XBASM+0.1* il_taxabley_ppta
3.77*XBASM	5.4*XBASM	0.807*XBASM+0* il_taxabley_ppta
5.4*XBASM	7.88*XBASM	0.753*XBASM+0.01* il_taxabley_ppta
7.88*XBASM	12.43*XBASM	1.541*XBASM-0.09* il_taxabley_ppta
12.43*XBASM		0.422*XBASM
2018		
0	0.99*XBASM	min(il_taxabley_ppta, 0.687*XBASM)
0.99*XBASM	1.11*XBASM	0.885*XBASM-0.2* il_taxabley_ppta
1.11*XBASM	2.72*XBASM	0.609*XBASM+0.049* il_taxabley_ppta
2.72*XBASM	2.94*XBASM	-0.162*XBASM+0.332* il_taxabley_ppta
2.94*XBASM	3.11*XBASM	0.482*XBASM+0.113* il_taxabley_ppta
3.11*XBASM	4.45*XBASM	0.171*XBASM+0.213* il_taxabley_ppta
4.45*XBASM	7.88*XBASM	1.376*XBASM-0.058* il_taxabley_ppta
7.88*XBASM	9.15*XBASM	2.164*XBASM-0.158* il_taxabley_ppta
9.15*XBASM	12.43*XBASM	1.541*XBASM-0.09* il_taxabley_ppta
12.43*XBASM		0.422*XBASM
2019		
0	0.99*XBASM	min(il_taxabley_ppta, 0.687*XBASM)
0.99*XBASM	1.11*XBASM	0.885*XBASM-0.2* il_taxabley_ppta
1.11*XBASM	2.72*XBASM	0.600*XBASM+0.057* il_taxabley_ppta
2.72*XBASM	3.11*XBASM	-0.169*XBASM+0.34* il_taxabley_ppta
3.11*XBASM	3.21*XBASM	-0.48*XBASM+0.144* il_taxabley_ppta
3.21*XBASM	4.45*XBASM	0.207*XBASM+0.228* il_taxabley_ppta
4.45*XBASM	5.31*XBASM	1.397*XBASM-0.039* il_taxabley_ppta
5.31*XBASM	7.88*XBASM	0.763*XBASM+0.08* il_taxabley_ppta
7.88*XBASM	8.08*XBASM	1.551*XBASM-0.02* il_taxabley_ppta

8.08*XBASM	13.54*XBASM	2.399*XBASM-0.125* il_taxabley_ppta
13.54*XBASM	34.00*XBASM	1.031*XBASM-0.024* il_taxabley_ppta
34.00*XBASM		0.215*XBASM

2.5.5 Tax base

The tax base (il_taxbase) is defined as taxable income minus the allowance for voluntary private pension and the basic allowance.

2.5.6 Tax schedule

The tax schedule for government tax (tinna_s), county council tax (tinrg_s), municipality tax (tinmu_s) and funeral tax (tinfu_s) applies to the same tax base (il_taxbase).

The different tax rates is different for different regions in Sweden. In 2019 the county council tax rate varies between 10.70% and 12.08 % of the tax base, the municipality tax rate varies between 17.10 % and 23.85 % of the tax base and the funeral tax rate varies between 0.065 % and 0.253 % of the tax base.

Since we do not have any information of the region persons are living in, those taxes are simulated according to the average value for Sweden, as reported in the following table.

Table 1. **Income tax rates – 2016-2019**

	Municipality tax	**County council tax**	**Funeral tax**
2016	20.75 %	11.35 %	0.22 %
2017	20.75 %	11.36 %	0.23 %
2018	20.74%	11.39%	0.22%
2019	20.70%	11.49%	0.23%

The government income tax schedule is based on three income bands as reported in the following table.

Table 2. **Government income tax schedule – 2016-2019**

Band	Tax rate	2016	2017	2018	2019
1st	0 %	0-430,199	0 – 438,899	0-455,299	0-490,699
2nd	20 %	430,200-625,799	438,900 –638,499	455,300-662,299	490,700-689,299
3rd	25 %	625,800	638,500-	662,300-	689,300-

2.5.7 Tax credits

There are eight different non-refundable tax credits in the Swedish tax system (the final tax liability cannot be negative). Here we report on those we are able to simulate or impute. Five of the tax credits cannot be simulated due to lack of data but are also presented below.

Tax credit for general social security contributions.

The general social security contribution (see 2.3.1 – tscee_s) is 100 % deductable from income tax.

Tax credit for negative capital income

This can be simulated for those who have a negative capital income (i.e. the interests paid minus the sum of income from rent and capital incomes, if the difference is positive) because of mortgage on their house. All negative capital income due to other forms of mortgage cannot be simulated. The annual amount of the tax credit (tintcmi_s) is:

0.30* negative capital income *12 if negative capital income *12 < 100,000

0.30*100,000 + 0.21*(negative capital income *12-100,000) if negative capital income *12 >= 100 000

Earned Income Tax credit

Depending on the age there are two different scales for the tax credit.

In both cases it is based on the income (tintc00_s) defined as follows:
tintc00_s = yem + yse + kfb .

Earned Income Tax credit – 2016-2018

Persons younger than 66 years		
Annual Income base for tax credit		
Lower level	**Upper level**	**Tax credit**
0	0.91*XBASM	(tintc00_s –BA)*MT
0.91*XBASM	2.94*XBASM	(0.91*XBASM+0.332*(tintc00_s -0.91*XBASM)-BA)*MT
2.94*XBASM	8.08*XBASM	(1.584*XBASM+0.111*(tintc00_s -2.94*XBASM)-BA)*MT
8.08*XBASM	13.54*XBASM	((2.155*XBASM)-BA)*MT
13.54*XBASM		(((2.155*XBASM)-BA)*MT)-0.03*(tintc00_s-13.54*XBASM)

Persons 66 years and older		
Annual Income base for tax credit		
Lower level	**Upper level**	**Tax credit**
0	100,000 SEK	0.2* tintc00_s
100,000 SEK	300,000 SEK	15,000+0.05* tintc00_s
300,000 SEK	600,000 SEK	30,000
600,000 SEK		30,000-0.03*(* tintc00_s-600,000)

BA = Basic Allowance, see chapter 2.4.4.2

MT = Municipality tax rate and County council tax rate

Earned Income Tax credit – 2019

Persons younger than 66 years		
Annual Income base for tax credit		
Lower level	**Upper level**	**Tax credit**
0	0.91*XBASM	(tintc00_s –BA)*MT
0.91*XBASM	3.24*XBASM	(0.91*XBASM+0.3405*(tintc00_s -0.91*XBASM)-BA)*MT
3.24*XBASM	8.08*XBASM	(1.703*XBASM+0.128*(tintc00_s -3.24*XBASM)-BA)*MT
8.08*XBASM	13.54*XBASM	((2.323*XBASM)-BA)*MT
13.54*XBASM		(((2.323*XBASM)-BA)*MT)-0.03*(tintc00_s-13.54*XBASM)

Persons 66 years and older		
Annual Income base for tax credit		
Lower level	**Upper level**	**Tax credit**
0	100,000 SEK	0.2* tintc00_s
100,000 SEK	300,000 SEK	15,000+0.05* tintc00_s
300,000 SEK	600,000 SEK	30,000
600,000 SEK		30,000-0.03*(* tintc00_s-600,000)

BA = Basic Allowance, see chapter 2.4.4.2
MT = Municipality tax rate and County council tax rate

Due to lack of data, five tax credits cannot be simulated. However they are presented below and an overview of their total amounts is reported in the Table below.

Tax credit for persons with Disability pension (Sjukersättning/aktivitetsersättning) (2018-2019).

Since 2018, a person receiving disability pension (pdi>0) is entitled to disability tax credit under the following rules:

- If pdi< 2.53 *XBASM   then the amount of the tax credit is equal to:
  pdi *0.045* (Municipality tax + County council tax)/100
- If pdi>= 2.53 *XBASM then the amount of the tax credit is equal to:
  2.53*XBASM*0.045*(Municipality tax + County council tax)/100 + (pdi -2.53 *XBASM))* 0.025*(Municipality tax + County council tax)/100

Tax credit for trade union fee (2018-2019)

Persons belonging to a trade union get a tax reduction of 25% of the trade union fee. The tax credit for union fee is abolished from 2019-04-01.

Tax credit on seafarer's income

A tax reduction is given for persons with seafarer's income. The amount is from 9,000 SEK to 14,000 SEK per year depending on if the ship is sailing abroad or in Sweden.

Tax credit on domestic and reconstruction services (2007-2017)

The tax reduction is 30 percent of the labour cost for reconstruction services and 50 percent of the labour cost for domestic services. There is an upper limit for this reduction. For reconstruction services the reduction is maximum 50,000 SEK per year. For domestic services the reduction is maximum 25 000 SEK per year for persons younger than 65 years and 50 000 SEK per year for older persons. The total reduction is maximum 50 000 SEK per year

Tax credit on real estate tax

Pensioners (persons older than 65 years) can receive a tax credit on real estate tax so that this tax not exceeds four percent of the income. The tax credit only refers to the property where the person is living.

Non-simulated tax credits 2016-2019, in millions SEK

Tax credit	2016	2017	2018	2019
Domestic and reconstruction services	12,687	13,835	14,548	15,256
Disability pension	0	0	478	457
Seafarer´s income	54	53	55	55
Trade union fee	0	0	1,394	703
Real estate tax	249	260	322	355

*Estimated figures for 2018 and 2019

2.6   Other taxes

Tax on capital income

The tax on capital is 30 % of the positive capital income, defined as income from capital and property income minus interests paid. This can partly be simulated as 0.30*max(((yiy+ypr) - xhcmomi), 0). Other interests paid, in addition to the interests paid on mortgage (xhcmomi), are not recorded in the data and they cannot be taken into account.

Tax on real estate

As from 2008 government property tax on dwellings was abolished and replaced by a municipal property charge. The table below describes the types of property mainly concerning private persons. Tax on real estate is included in the SILC data (EUROMOD variable: tpr).

Tax on real estate

Type of property	Municipal property charge 2009-2019
Municipal property charge 2009-2019	
House/land, 0-5 years	0
House/land, 6-10 years	min((0.00375* assessed value), (0.00375*800,000*KPIyear))
House/land older than 10 years	min((0.0075*assessed value), (0.0075*800,000*KPIyear))

*KPIyear = XBASMI/XBASMI 2008

3. DATA

3.1 General description

The Swedish database is drawn from the UDB version of the European Statistics on Income and Living Conditions (EU-SILC). Every year a systematic sample is drawn from the register of total population (TPR). The reference population is therefore the whole Swedish population, except short-term migrants (i.e. those staying no longer than 3-12 months). The sample design follows a stratified sample with simple random sampling within age strata. The table below illustrates the main characteristic for the 2017 sample. In general, the SILC sample in a given year (say year *t*) consists of four rotating panels: one is included for the first time in the same year *t*, while the other three panels were originally drawn in years *t-1*, *t-2* and *t-3*.

Table 3.1 EUROMOD database description

EUROMOD database	SE_2017_a2
Original name	UDB version 2017-1
Provider	EUROSTAT
Year of collection	2017
Period of collection	2017.01.01—2017.11.31
Income reference period	2016
Sample size	5787 households, 14616 individuals
Response rate	50.2%

The cross-sectional weighting procedure uses auxiliary information through a calibration approach. The use of auxiliary information is aimed to reduce nonresponse bias and to provide better estimates of indicators of poverty measures. The auxiliary variables are obtained from the total population register (TPR), the register of income and taxation (IoT) and the register of education; and include age*sex, civil status, education level, region, place of birth (Swedish born/foreign born), income deciles, income (amount), receipt of financial aid, housing allowance and sickness compensation.

This section briefly describes the weighting procedure.[2] The sample unit of interest in the Swedish EU SILC are the households of sampled individuals. More precisely, individuals are sampled in order to reach households. The sample is stratified by age in eight strata: 16-23

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[2] For more information see the Quality Report EU-SILC 2016 Sweden, available from: https://www.gesis.org/en/missy/materials/EU-SILC/documents/quality-reports

years, 24-33 years, 34-43 years, 44-53 years, 54-63 years, 64-73 years, 74-83 years and 84 years and older. The design weights of the initial sample (DB080) are given by the ratio of the total number of individuals in each stratum to the number of individuals in the sample in each stratum. In order to get the household weights (DB090), the design weights (DB080) are calibrated to the population totals of the auxiliary variables. All individuals in a household get the same value of the household weights (DB090) and personal weights RB050 and PB040 are set equal to DB090. Finally personal weights PB060are obtained multiplying household weights (DB090) by the number of eligible persons in the household.

3.2   Data adjustment

Adjustments to variables are kept to a minimum. Some minor data cleaning has been done to make sure that the households and relationships of individuals within households are coherent (for example, that young children are not living alone or family relations are coherent).

In order to guarantee consistency between demographic variables and income variables which refer to the previous year (and on which EUROMOD simulation are based), all children born between the end of the income reference period and the date of interview have been dropped from the sample.

3.3   Imputations and assumptions

3.3.1   Time period

In the SILC user database, the income reference period is a 12-month period. Information on all income sources refers to the last income year (1 January 2016 – 31 December 2016). The variables are recorded at the time the person receives it, i.e. when the payment is done. This means that the income of a person for example unemployed during the last part of December 2015 but receiving the payment in January 2016, will then be part of the income for 2016.
The other variables refer to the time of the interview or a 12 months period prior to the interview.

Children born after the end of the income reference period (i.e. 31 December 2016) have been dropped from the dataset.

3.3.2   Gross incomes

The incomes used are gross incomes.

3.3.3   Disaggregation of harmonized variables

EU-SILC variable HY050g (Family/children related allowances) has been split into two components: child benefit (bch00, simulated in EUROMOD as bch00_s) and parent's allowance at birth (bpl, not simulated in EUROMOD) according to the rules about child benefits.

EU-SILC variable PY140g (Education related allowances) has been split into two components: education related allowances (bed, non-simulated in EUROMOD) and extra supplement of child benefit for upper secondary school students (bchot, simulated in EUROMOD as bch01_s) according to the year of birth of the individual (i.e. after 1986 is considered as extra supplement).

3.4   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 uprating 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 uprated original variables in the dataset. Updating factors for simulated variables are provided so as to facilitate the use of the model in cases when the user wishes to turn off the simulation of a particular variable.

4.   VALIDATION

4.1   Aggregate Validation

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

Usually the external source for macro validation comes from the registry with the estimates restricted to the sample of the survey (EU-SILC). Due to the lack of availability of estimates from the survey related to 2016 and 2017, the external figures for the two years refer to the estimates from the records related to the persons registered at the end of 2016 and 2017, respectively.

4.1.1   Components of disposable income

The definition of disposable income in EUROMOD follows closely EU-SILC definition. The minor differences are outlined in the following table. Note that disposable income in EUROMOD is constructed using simulated components whenever possible and, hence, the values of two disposable income concepts are not identical.

Table 4.1 Components of disposable income

	EUROMOD 2016-2019	EU-SILC 2017
	ils_dispy	HY020
Employee cash or near cash income	+	+
Employer's social insurance contribution	0	0
Company car	0	+
Contributions to individual private pension plans	0	0
Cash benefits or losses from self-employment	+	+
Pension from individual private plans	+	0
Unemployment benefits	+	+
Old-age benefits	+	+
Survivor' benefits	+	+
Sickness benefits	+	+
Disability benefits	+	+
Education-related allowances	+	+
Income from rental of a property or land	+	+
Family/children related allowances	+	+
Social exclusion not elsewhere classified	+	+
Housing allowances	+	+
Regular inter-household cash transfer received	+	+
Interests, dividends, etc.	+	+
Income received by people aged under 16	+	+
Regular taxes on wealth	-	-
Regular inter-household cash transfer paid	-	-
Tax on income and social contributions	-	-
Repayments/receipts for tax adjustment	+	+

4.1.2 Validation of incomes inputted into the simulation

Table 4.2 in Annex 3 shows the number of employed and unemployed in the dataset used for EUROMOD simulations against external benchmarks. The number of people in work matches fairly well the external benchmark. On the other hand, the number of unemployed individuals is considerably underestimated, by more than 39 percentage points in 2016.

Information about income components from the underlying EUROMOD data (Swedish component of EU-SILC) are compared to information on income components (wages and various benefits) from the administrative source (STAR-register – Statistics Sweden) which is the direct source of the survey as well. The comparison needs to be done with caution because the units of analysis and the exact income concepts in the survey and in the administrative statistics are not always strictly comparable. Table 4.3 compares the number of recipients of different income components. In general the survey matches quite well the administrative sources, except for property income (in this case the number of recipients is overestimated by 59% in 2015). In the case of property income, this can happen since the data are aggregated at household level in the survey. However, in EUROMOD, property income is allocated to both partners (if present), which results in an overestimation of the number of recipients. In terms of annual amounts (Table 4.4), the survey also matches well the external statistics, except for self-employment which is overestimated by 24%, and property income which is underestimated by around 19% in 2016.

Tables 4.5 and 4.6 report the validation of benefits included in EUROMOD but not simulated. In general, the aggregate number of recipients of non-simulated benefits matches well the

external benchmarks. Parent's allowances have been disaggregated from the EU-SILC variable HY050g and attributed to both parents (if present). As a consequence, the number of recipients is overestimated by around 18% in 2016. Some underestimation exists for the recipients of survivors' pensions (10%) and, to a lesser extent, for disability pensions (8%). In terms of aggregate annual amounts, the survey matches quite well the external statistics in 2016, the baseline year.

4.1.3   Validation of outputted (simulated) incomes

Tables 4.7 and 4.8 report the validation of tax and benefits instruments simulated in EUROMOD. Because of data restrictions, the external statistics for 2016 and 2017 are those from the administrative records related to the persons registered at the end of the year. In terms of benefits recipients, comparison with external statistics is not feasible due to lack of data, except for child benefit for which we observe an underestimation of 20% in 2016 compared to the external benchmark. A comparison with EU-SILC data yields an important overestimation of recipients of social assistance benefits (87%) and housing allowance (46%), most likely related to non take-up, which is not accounted for in EUROMOD simulations.

In terms of benefits amount, over the years considered, we simulate Child benefit, Housing allowance, Housing allowance for pensioners and Social Assistance. Aggregate amounts of Child Benefit and the Child Benefit and Educational support (received by children aged 16+ in upper secondary school) match very well the external statistics. Housing allowance is oversimulated by around 60%, Housing allowance for pensioners by 23%, and Social Assistance by around 37%. The main reasons for these discrepancies can be i) non complete take-up of the benefits which is not accounted for in EUROMOD simulations, and ii) approximation, due to the data available, of the means test used to assign benefits.

Tables 4.7 and 4.8 include the validation of the main components of the income tax. In terms of personal income tax, we simulate: Government Tax, County Council Tax, Municipality Tax, funeral tax and Earned Income Tax Credit. The simulations represent the external statistics fairly well in the baseline year 2016. Among the components of the personal income tax, Basic Allowances is overestimated by 10% in terms of taxpayers but underestimated by 28% in terms of amounts. The Municipal Income Tax and County Council Tax, the Funeral Tax, Government income tax and Earned Income Tax Credit match fairly well the external statistics both in terms of taxpayers and in terms of amounts. The tax credit for negative capital income is largely underestimated, both in terms of recipients and expenditure, given that in the data the only source of negative capital income are the interests paid on the mortgage on the main house and other forms of mortgages are not included. Taxes on capital incomes excluding capital gains are on the other hand overestimated in terms of tax payers by around 66%. The number of individuals paying the tax on capital income is overestimated because the investment income in the data is aggregated at household level and we split it among the partners in the household. However, the same tax is largely underestimated in terms of amounts, by around 51%. Moreover, the tables report the total number of tax payers and total revenue for the Income tax as a whole (given by the sum of the four components) as simulated by EUROMOD once we subtract the simulated tax credits.

The tables also report the validation of the social insurance contributions for employees, employers and self-employed individuals. However, due to data limitation, comparison with external statistics is not possible for the number of payers of Employers Social insurance contributions. Employee social insurance contributions match very well the external statistics in terms of payers and aggregate amounts. As far as Social insurance contributions for the self-employed, the number of contributors is in general largely underestimated, by around 25%, for all type of contributions. On the contrary, the total amounts of Social insurance contributions for

the self-employed match well the external statistics. A good match is also observed for Employers.

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

Table 4.9 shows the main inequality indices from EUROMOD and SILC. Gini coefficient for Disposable income and S80/S20 ratio are just slightly underestimated in EUROMOD. Overall, disposable equivalised income median) at different income deciles simulated by EUROMOD matches quite well the median equivalised income reported in SILC, and this is also the case for the mean and median income simulated by EUROMOD. A minor exception is the bottom decile, which presents an overestimation of the share of equivalised disposable income by 17%.

4.2.2 Poverty rates

The overall relative poverty rate based on disposable income simulated in EUROMOD slightly underestimates (by 3%) the one based on disposable income reported in EU-SILC (Table 4.10 in Annex 3). The differences are larger only with the lowest poverty line (40% of median equivalised household income) and in the case of elderly poverty. The latter can be affected by the oversimulation of the Housing allowances and Social assistance resulting in lower poverty rates simulated by EUROMOD.[3]

4.3 Validation of minimum wage

Baseline simulations in EUROMOD do not modify gross employment income in any way. However, the user may switch on a policy that 'corrects' employment income by ensuring it is not below the gross minimum wage corresponding to the number of hours the person has worked. Table 4.11 presents a series of figures comparing results obtained under the two simulation scenarios. Changing employment income so as to incorporate the minimum hourly gross wage does not affect results in any way.

4.4 Summary of "health warnings"

This final section summarises the main findings in terms of particular aspects of the Swedish part of EUROMOD that should be borne in mind when planning appropriate uses of the model and in interpreting the results. In particular:
- Some aggregated variables available in the survey are very difficult to split without having access to the original source of data (in particular, parents' allowance at birth, income from capital and property income)

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[3] When self-reported Housing allowance and Social assistance are used instead of the simulated amounts, the difference between EUROMOD and SILC poverty rates for the elderly are considerably reduced.

- The lack of information related to negative capital income (with the exception of the interests paid on the mortgage for the main house) and other expenditures affects the simulation of some tax credits
- The identification of those subject to self-employment social contributions is problematic as well as the correct definition of the tax base of the self-employment social contributions
- The assumption of 100% take-up of means-test benefit overestimates both recipients and amount of these benefits.
- The simulation of parental benefits is switched off in the baseline (therefore, those observed in the data are used).

5. REFERENCES

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- ***Sources for tax-benefit descriptions/rules***

Vår trygghet 2009, Vår trygghet 2010, Vår trygghet 2011, Vår trygghet 2012.
Handledning för beskattning av inkomst vid 2009 års taxering Del 1, Del2, Del 3

Handledning för beskattning av inkomst vid 2010 års taxering Del 1, Del2, Del 3

ANNEX 1. UPRATING FACTORS

Variable name	Factor reference name	2016	2017	2018	2019	Source and explanation
Harmonized consumer price index (index 2015=100)	$HICP	101.14	103.02	105.02	106.74	Eurostat (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=prc_hicp_aind&lang=en); 2017 - IMF forecasts (WEO April 2019, http://www.imf.org/external/pubs/ft/weo/2014/01/weodata/index.aspx)
Consumer price index	$f_cpi	316.43	322,11	328.40	334.41	https://www.scb.se/hitta-statistik/statistik-efter-amne/priser-och-konsumtion/konsumentprisindex/konsumentprisindex-kpi/pong/tabell-och-diagram/konsumentprisindex-kpi/kpi-faststallda-tal-1980100/ http://prognos.konj.se/PXWeb/pxweb/sv/SenastePrognosen/SenastePrognosen__f30_lonerochkonsumentpriser/F3013.px/table/tableViewLayout1/?rxid=265ee5d8-b549-41b2-81aa-5cecea3bf826 (forecast for 2019)
HICP - actual rentals for housing (index 2015=100)	$f_house	100.88	101.73	102.82	104.72	Eurostat (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=prc_hicp_aind&lang=en, actual rentals for housing); 2019 projection proportional to inflation forecast
Average monthly salary, SEK	$f_wage	32800	33700	34600	35494.58	http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__AM__AM0110__AM0110A/LonYrkeUtbildning4A/ (2019 projection proportional to $f_xlon). In EUROMOD 2.0+ these numbers are the same but the source is not updated as here.
Hourly wage, SEK	$f_xlon	229.1	234.7	239.8	246.0	http://prognos.konj.se/PXWeb/pxweb/sv/SenastePrognosen/SenastePrognosen__f30_lonerochkonsumentpriser/F3004.px/table/tableViewLayout1/?rxid=265ee5d8-b549-41b2-81aa-5cecea3bf826
Price base amount	$f_xbasm	44300	44800	45500	46500	http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__PR__PR0101__PR0101E/Basbeloppet/?rxid=1df81ffb-6943-4796-a5d5-4b5e900d58b3
Income base amount	$f_xbasmi	59300	61500	62500	64400	https://www.pensionsmyndigheten.se/statistik-och-rapporter/Rapporter/anslagsbelastning-och-prognos
Aggregate income from capital,	$f_yiy	139017	140909	150151	158183	Forecast made by the FASIT model

millions of SEK						
Aggregate income from property, millions of SEK	$f_ypr	1782	2003	2044	2113	Forecast made by the FASIT modell
Unit index	$f_unit	1	1	1	1	
Pension Index (new)	$f_pen	159.37	166.39	170.73	175.96	https://www.pensionsmyndigheten.se/statistik-och-rapporter/Rapporter/anslagsbelastning-och-prognos

ANNEX 2. POLICY EFFECTS IN 2018-2019

Preliminary: Indexation based on projected HICP for 2019

Table A2.1 and Figure A2.1 show the effect of 2019 policies on mean equivalised household disposable income by income component and income decile group. The effect is estimated as a difference between simulated household net income under the 2019 tax-benefit policies (deflating monetary parameters by projected Harmonized Index of Consumer Prices, HICP) and net incomes simulated under 2018 policies, as a percentage of mean equivalised household disposable income in 2018.

In comparison to 2018 policies, (deflated) 2019 policies increase mean household income by 1.24% in total. This total increase was regressive. Changes in direct taxes accounted for most of the increase in household disposable income (0.93%). The total effect of these changes occurred along the whole distribution but was stronger in the middle and top. Changes in public pensions came second (0.33%), reflecting that pension indexation was higher than growth in CPI and reflecting the position of pensioners in the income distribution. Changes in means-tested benefits affected the second and third decile, which also contributed to the regressivity of the total changes. All other tax and benefit instruments have only a very minor distributional impact.

Table A2.1: Policy effects in 2018-2019, using the CPI-indexation, %

Decile	Original income	Public pensions	Means-tested benefits	Non means-tested benefits	Employee SIC	Self-employed SIC	Direct taxes	Disposable income
1	0.00	0.14	0.01	0.06	-0.01	0.00	0.16	0.36
2	0.00	0.67	-0.26	0.06	-0.01	0.00	0.26	0.73
3	0.00	0.70	-0.11	0.05	-0.01	0.00	0.46	1.10
4	0.00	0.55	-0.03	0.06	-0.01	0.00	0.64	1.22
5	0.00	0.38	-0.01	0.06	-0.01	0.00	0.80	1.21
6	0.00	0.32	0.00	0.03	-0.01	0.00	0.93	1.26
7	0.00	0.24	0.00	0.03	-0.02	0.00	1.03	1.28
8	0.00	0.23	0.00	0.02	-0.03	0.00	1.14	1.36
9	0.00	0.24	0.00	0.02	-0.04	0.00	1.36	1.57
10	0.00	0.23	0.00	0.00	-0.05	0.00	1.08	1.27
Total	0.00	0.33	-0.02	0.03	-0.03	0.00	0.93	1.24

Notes: shown as a percentage change in mean equivalised household disposable income by income component and income decile group. Income decile groups are based on equivalised household disposable income in 2018, using the modified OECD equivalence scale. Each policy system has been applied to the same input data, deflating monetary parameters of 2019 policies by Eurostat's Harmonized Index of Consumer Prices (HICP).

Figure A2.1: Policy effects in 2018-2019, using the CPI-indexation, % [alfa = 1.02]
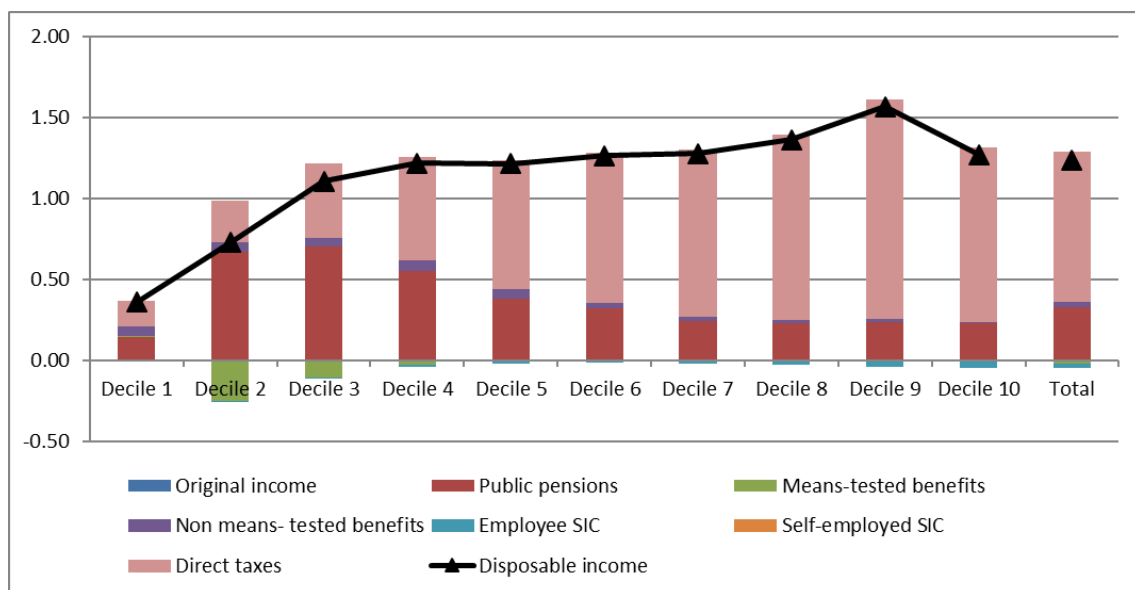
ANNEX 3. VALIDATION TABLES

Table 4.2-Number of employed and unemployed (in thousands)

	EUROMOD	External				Ratio			
	2016	2016	2017	2018	2019	2016	2017	2018	2019
Number of employed	4657.2	4736.0	4834.0	4921.0	N/A	0.98	0.96	0.95	N/A
Number of unemployed	223.4	366.0	358.0	344.0	N/A	0.61	0.62	0.65	N/A

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

	EUROMOD	External				Ratio			
	2016	2016	2017	2018	2019	2016	2017	2018	2019
Employment income	5539.0	5503.2	5604.2	N/A	N/A	1.01	0.99	N/A	N/A
Fringe benefits	1286.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Self- employment income	663.0	711.5	704.4	N/A	N/A	0.93	0.94	N/A	N/A
Investment income	5219.5	5397.9	5408.5	N/A	N/A	0.97	0.97	N/A	N/A
Property income	92.0	57.8	61.9	N/A	N/A	1.59	1.49	N/A	N/A
Private pensions	895.5	901.5	826.9	N/A	N/A	0.99	1.08	N/A	N/A
Private transfers	154.6	176.9	172.5	N/A	N/A	0.87	0.90	N/A	N/A

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

	EUROMOD				External				Ratio			
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019
Employment income	1,619,091	1,658,667	1,694,710	1,738,526	1,622,096	1,700,466	N/A	N/A	1.00	0.98	N/A	N/A
Fringe benefits	22,260	22,660	23,103	23,525	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Self- employment income	60,787	62,455	64,123	65,781	48,923	49,527	N/A	N/A	1.24	1.26	N/A	N/A
Investment income	144,509	146,476	156,083	164,432	136,596	138,779	N/A	N/A	1.06	1.06	N/A	N/A
Property income	1,345	1,512	1,543	1,595	1,667	1,866	N/A	N/A	0.81	0.81	N/A	N/A
Private pensions	31,095	31,654	32,272	32,862	32,124	31,161	N/A	N/A	0.97	1.02	N/A	N/A
Private transfers	3,476	3,476	3,476	3,476	3,712	3,478	N/A	N/A	0.94	1.00	N/A	N/A

Table 4.5-Tax benefit instruments included but not simulated in EUROMOD

	EUROMOD	External				Ratio			
	2016	2016	2017	2018	2019	2016	2017	2018	2019
Benefits									
Old-age pension	2335.4	2316.0	2345.7	N/A	N/A	1.01	1.00	N/A	N/A
Disability pensions	364.0	396.5	378.3	N/A	N/A	0.92	0.96	N/A	N/A
Survivor's pension	54.8	60.7	59.0	N/A	N/A	0.90	0.93	N/A	N/A
Sickness benefits	1373.6	1394.8	1402.1	N/A	N/A	0.98	0.98	N/A	N/A
Unemployment benefits	423.3	404.3	387.3	N/A	N/A	1.05	1.09	N/A	N/A
Social assistance (not means-tested)	60.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Education related allowance	541.9	504.6	496.7	N/A	N/A	1.07	1.09	N/A	N/A
Parent's allowance	955.6	812.5	850.9	N/A	N/A	1.18	1.12	N/A	N/A
Taxes and Social Insurance contributions									
Property tax	2702.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

	EUROMOD				External				Ratio			
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019
Benefits												
Old-age pension	422,967	441,598	453,117	466,997	425,581	444,692	N/A	N/A	0.99	0.99	N/A	N/A
Disability pensions	38,721	40,427	41,481	42,752	40,056	38,378	N/A	N/A	0.97	1.05	N/A	N/A
Survivor's pension	2,336	2,439	2,502	2,579	2,374	2,278	N/A	N/A	0.98	1.07	N/A	N/A
Sickness benefits	39,758	40,730	41,615	42,691	42,559	41,152	N/A	N/A	0.93	0.99	N/A	N/A
Unemployment benefits	24,663	25,266	25,815	26,482	25,707	24,860	N/A	N/A	0.96	1.02	N/A	N/A
Social assistance (not means-tested)	4,739	4,827	4,925	5,001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Education related allowance	30,898	31,246	31,735	32,432	28,270	28,892	N/A	N/A	1.09	1.08	N/A	N/A
Parent's allowance	29,110	29,822	30,470	31,257	28,928	29,880	N/A	N/A	1.01	1.00	N/A	N/A
Taxes and Social Insurance contributions												
Property tax	26,634	26,634	26,634	26,634	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 4.7-Tax benefit instruments simulated in EUROMOD

	EUROMOD				SILC	Ratio	External				Ratio			
	2016	2017	2018	2019	2016	2016	2016	2017	2018	2019	2016	2017	2018	2019
Benefits														
Child benefit	1921.5	1921.5	1921.5	1921.5	1159.7	1.66	1343.4	1414.2	N/A	N/A	1.43	1.36	N/A	N/A
Child benefit and educational support	2162.5	2162.5	2162.5	2162.5	1627.9	1.33	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Housing allowance	364.2	367.5	364.0	358.0			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Housing allowance for pensioners	557.6	520.7	541.0	520.7	630.1	1.46	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Social assistance (means-tested)	383.8	375.6	369.4	370.1	205.5	1.87	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Taxes and Social Insurance contributions														
Personal income tax														
Basic Allowance	8455.3	8455.3	8455.3	8455.3	0.0	N/A	7676.1	7778.6	N/A	N/A	1.10	1.09	N/A	N/A
Municipal income tax and county council tax	7371.2	7374.8	7376.8	7377.2	0.0	N/A	7337.4	7434.5	N/A	N/A	1.00	0.99	N/A	N/A
Government income tax	1304.0	1340.2	1262.2	1068.4	0.0	N/A	1259.8	1313.4	N/A	N/A	1.04	1.02	N/A	N/A
Funeral tax	7369.6	7374.8	7374.8	7376.8	0.0	N/A	7284.3	7375.5	N/A	N/A	1.01	1.00	N/A	N/A
Tax credit for negative capital income	1642.2	1643.0	1634.5	1629.0	0.0	N/A	4029.3	4075.3	N/A	N/A	0.41	0.40	N/A	N/A
Earned income tax credit	5378.4	5380.6	5380.4	5383.2	0.0	N/A	5229.5	5324.0	N/A	N/A	1.03	1.01	N/A	N/A
Income tax	7109.4	7113.3	6760.7	6760.3	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tax on capital income excluding Capital Gain	3886.3	3885.5	3894.0	3899.5	0.0	N/A	2335.8	2367.2	N/A	N/A	1.66	1.64	N/A	N/A

EUROMOD	SILC	Ratio	External	Ratio

	2016	2017	2018	2019	2016	2016	2016	2017	2018	2019	2016	2017	2018	2019
Employees SIC														
Employees SIC	5217.2	5221.7	5227.6	5228.0	0.0	N/A	5391.6	5480.4	N/A	N/A	0.97	0.95	N/A	N/A
Employers SIC														
Employers - Work injury insurance contribution	5156.8	5160.0	5160.0	5160.8	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Employers - Life insurance	5156.8	5160.0	5160.0	5160.8	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Employers - Labour market contribution	5156.8	5160.0	5160.0	5160.8	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Employers - Parental leave programme	5156.8	5160.0	5160.0	5160.8	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Employers - Ordinary wage tax and Special wage tax	5486.3	5490.7	5492.0	5493.8	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Employer - Retirement benefit programme	5453.3	5465.1	5469.2	5493.8	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Employers - Sickness insurance	5156.8	5160.0	5160.0	5160.8	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Reduction of Employer contributions	0.0	0.0	0.0	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

	EUROMOD				SILC	Ratio	External				Ratio			
	2015	2016	2017	2018	2015	2015	2015	2016	2017	2018	2015	2016	2017	2018
Self-employed SIC														
Self-employed - Work injury insurance contribution	168.8	184.6	186.4	186.4	0.0	N/A	254.8	248.7	N/A	N/A	0.66	0.74	N/A	N/A
Self-employed - Life insurance	168.8	184.6	186.4	186.4	0.0	N/A	254.8	248.7	N/A	N/A	0.66	0.74	N/A	N/A
Self-employed - Labour market contribution	168.8	184.6	186.4	186.4	0.0	N/A	254.7	248.7	N/A	N/A	0.66	0.74	N/A	N/A
Self-employed - Parental leave programme	168.8	184.6	186.4	186.4	0.0	N/A	254.8	248.7	N/A	N/A	0.66	0.74	N/A	N/A
Self-employed - Ordinary wage tax and Special wage tax	177.7	194.2	196.0	196.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Self-employed - Retirement benefit programme	177.7	194.2	196.0	196.0	0.0	N/A	315.4	311.0	N/A	N/A	0.56	0.62	N/A	N/A
Self-employed - Sickness insurance	168.8	184.6	186.4	186.4	0.0	N/A	254.8	248.7	N/A	N/A	0.66	0.74	N/A	N/A

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

	EUROMOD				SILC				Ratio				External				Ratio			
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019
Benefits																				
Child benefit	25,809	26,058	30,444	30,444	26,268	26,756	27,302	27,723	0.98	0.97	1.12	1.10	26,277	27,215	N/A	N/A	0.98	0.96	N/A	N/A
Child benefit and educational support	29,111	29,362	34,368	34,368	30,558	31,126	31,760	32,250	0.95	0.94	1.08	1.07	29,317	30,323	N/A	N/A	0.99	0.97	N/A	N/A
Housing allowance	8,300	8,381	8,477	8,429									5,175	5,241	N/A	N/A	1.60	1.60	N/A	N/A
Housing allowance for pensioners	15,948	14,893	16,544	16,161	16,131	16,431	16,766	17,025	1.50	1.42	1.49	1.44	13,009	12,915	N/A	N/A	1.23	1.15	N/A	N/A
Social assistance (means-tested)	15,334	15,441	15,682	15,977	10,235	10,425	10,638	10,802	1.50	1.48	1.47	1.48	11,203	11,460	N/A	N/A	1.37	1.35	N/A	N/A

	EUROMOD				SILC				Ratio				External				Ratio			
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019
Taxes and Social Insurance contributions																				
Personal income tax																				
Basic Allowance	154,615	154,981	156,846	159,887	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	215,304	219,202	N/A	N/A	0.72	0.71	N/A	N/A
Municipal income tax and county council tax	666,035	686,748	699,271	715,337	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	665,228	695,113	N/A	N/A	1.00	0.99	N/A	N/A
Government income tax	54,574	56,770	56,148	51,713	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	55,200	58,047	N/A	N/A	0.99	0.98	N/A	N/A
Funeral tax	4,565	4,919	4,788	5,111	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,575	4,869	N/A	N/A	1.00	1.01	N/A	N/A
Tax credit for negative capital income	8,984	9,145	9,271	9,398	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17,295	17,610	N/A	N/A	0.52	0.52	N/A	N/A
Earned income tax credit	105,252	106,904	108,766	120,466	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	104,520	108,363	N/A	N/A	1.01	0.99	N/A	N/A
Income tax	504,167	522,677	512,181	508,806	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	N/A	N/A
Tax on capital income excluding Capital Gain	41,310	41,908	44,699	47,131	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	85,133	90,304	N/A	N/A	0.49	0.46	N/A	N/A
Employees SIC																				
Employees SIC	107,465	110,409	112,707	115,774	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	112,833	118,113	N/A	N/A	0.95	0.93	N/A	N/A

	EUROMOD				SILC				Ratio				External				Ratio			
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019
Employers SIC																				
Employers - Work injury insurance contribution	4,826	3,295	3,367	3,454	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,716	3,400	N/A	N/A	1.02	0.97	N/A	N/A
Employers - Life insurance	18,820	11,534	11,784	10,361	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18,809	11,905	N/A	N/A	1.00	0.97	N/A	N/A
Employers - Labour market contribution	42,465	43,499	44,443	45,588	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	42,452	44,905	N/A	N/A	1.00	0.97	N/A	N/A
Employers - Parental leave programme	41,822	42,840	43,770	44,897	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	41,803	44,225	N/A	N/A	1.00	0.97	N/A	N/A
Employers - Ordinary wage tax and Special wage tax	157,239	178,700	182,578	202,821	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	155,186	182,350	N/A	N/A	1.01	0.98	N/A	N/A
Employer - Retirement benefit programme	167,491	171,608	175,339	179,903	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	169,033	177,188	N/A	N/A	0.99	0.97	N/A	N/A
Employers - Sickness insurance	78,013	71,675	73,231	61,302	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	77,991	73,993	N/A	N/A	1.00	0.97	N/A	N/A
Reduction of Employer contributions	0	0	0	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	N/A	N/A
Self-employed SIC																				
Self-employed - Work injury insurance contribution	116	85	87	89	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	115	77	N/A	N/A	1.01	1.10	N/A	N/A
Self-employed - Life insurance	454	297	305	268	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	449	270	N/A	N/A	1.01	1.10	N/A	N/A
Self-employed - Labour market contribution	39	42	44	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	38	38	N/A	N/A	1.02	1.12	N/A	N/A
Self-employed - Parental leave programme	1,009	1,102	1,134	1,163	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	998	1,003	N/A	N/A	1.01	1.10	N/A	N/A

Self-employed - Ordinary wage tax and Special wage tax	4,036	4,855	4,993	5,525	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3,704	4,134	N/A	N/A	1.09	1.17	N/A	N/A
Self-employed - Retirement benefit programme	4,446	4,844	4,981	5,110	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,556	4,573	N/A	N/A	0.98	1.06	N/A	N/A
Self-employed - Sickness insurance	1,917	1,883	1,936	1,628	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,907	1,722	N/A	N/A	1.01	1.09	N/A	N/A

Table 4.9-Distribution of equivalised disposable income

	EUROMOD				External				Ratio			
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019
D1	3.8	3.8	3.8	3.7	3.2	3.3	N/A	N/A	1.18	1.14	N/A	N/A
D2	5.4	5.4	5.5	5.5	5.3	5.3	N/A	N/A	1.03	1.03	N/A	N/A
D2	5.4	5.4	5.5	5.5	5.3	5.3	N/A	N/A	1.03	1.03	N/A	N/A
D3	6.5	6.5	6.6	6.5	6.4	6.5	N/A	N/A	1.01	1.00	N/A	N/A
D4	7.6	7.6	7.6	7.6	7.6	7.7	N/A	N/A	0.99	0.99	N/A	N/A
D5	8.6	8.7	8.7	8.6	8.6	8.7	N/A	N/A	1.00	1.00	N/A	N/A
D6	9.6	9.7	9.6	9.6	9.6	9.8	N/A	N/A	1.00	0.99	N/A	N/A
D7	10.8	10.7	10.7	10.7	10.8	10.9	N/A	N/A	1.00	0.99	N/A	N/A
D8	12.1	12.1	12.0	12.0	12.1	12.3	N/A	N/A	1.00	0.98	N/A	N/A
D9	13.9	13.8	13.8	13.8	14.0	14.3	N/A	N/A	0.99	0.97	N/A	N/A
D10	21.7	21.7	21.8	21.9	22.4	21.3	N/A	N/A	0.97	1.02	N/A	N/A
Median	239,052	245,373	254,261	262,902	240,279.0	246,077.0	N/A	N/A	0.99	1.00	N/A	N/A
Mean	261,943	268,071	278,680	288,726	264,088.0	266,917.0	N/A	N/A	0.99	1.00	N/A	N/A
Gini	26.7	26.6	26.5	26.7	28.0	27.0	N/A	N/A	0.95	0.99	N/A	N/A
S80/S20	3.9	3.9	3.8	3.9	4.3	4.1	N/A	N/A	0.90	0.94	N/A	N/A

Table 4.10-Poverty rates by gender and age

	EUROMOD				External				Ratio			
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019
40% median HDI												
Total	3.2	3.4	3.4	3.7	4.6	4.4	N/A	N/A	0.70	0.78	N/A	N/A
Males	3.7	3.9	3.9	4.1	4.9	4.1	N/A	N/A	0.76	0.95	N/A	N/A
Females	2.7	3.0	3.0	3.3	4.2	4.7	N/A	N/A	0.64	0.64	N/A	N/A
50% median HDI												
Total	7.8	8.1	7.9	8.1	9.3	9.5	N/A	N/A	0.84	0.85	N/A	N/A
Males	8.3	8.6	8.5	8.7	9.5	9.2	N/A	N/A	0.88	0.94	N/A	N/A
Females	7.4	7.5	7.2	7.5	9.0	9.7	N/A	N/A	0.82	0.77	N/A	N/A
60% median HDI												
Total	15.0	15.3	14.4	14.7	15.8	16.4	N/A	N/A	0.95	0.93	N/A	N/A
Males	15.1	15.4	14.6	14.7	15.4	15.2	N/A	N/A	0.98	1.01	N/A	N/A
Females	14.8	15.2	14.3	14.6	16.2	17.7	N/A	N/A	0.92	0.86	N/A	N/A
70% median HDI												
Total	24.2	24.2	23.4	23.6	24.6	24.5	N/A	N/A	0.99	0.99	N/A	N/A
Males	22.8	22.7	22.1	22.2	23.0	22.2	N/A	N/A	0.99	1.02	N/A	N/A
Females	25.7	25.8	24.6	24.9	26.2	26.9	N/A	N/A	0.98	0.96	N/A	N/A
60% median HDI												
0-15 years	17.0	17.2	16.9	17.0	17.5	19.4	N/A	N/A	0.97	0.89	N/A	N/A
16-24 years	28.2	28.7	27.9	28.3	26.3	26.1	N/A	N/A	1.07	1.10	N/A	N/A
25-49 years	14.5	14.6	13.7	13.8	14.4	15.9	N/A	N/A	1.01	0.92	N/A	N/A
50-64 years	10.5	10.7	8.5	8.5	10.1	10.2	N/A	N/A	1.04	1.05	N/A	N/A
65+ years	11.0	11.5	11.6	12.3	15.8	14.6	N/A	N/A	0.70	0.79	N/A	N/A

Table 4.10-Minimum wage validation

	Baseline				Min Wage Incl.				Ratio			
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019
Equivalised disposable income	1830326.57	1873667.98	1948965.91	2019356.72	1830327.31	1873611.55	1948821.93	2019205.90	1.00	1.00	1.00	1.00
Employment income	1619090.87	1658667.06	1694709.67	1738526.18	1619091.67	1658667.85	1694710.45	1738526.95	1.00	1.00	1.00	1.00
Total income tax	504166.86	522677.02	512181.14	508805.77	504166.92	522617.96	512019.37	508642.26	1.00	1.00	1.00	1.00
Employee social insurance contributions	107465.19	110409.39	112706.93	115773.51	107465.19	110409.39	112706.93	115773.51	1.00	1.00	1.00	1.00
Social Assistance	15333.89	15441.15	15682.23	15976.69	15333.89	15442.80	15687.35	15981.38	1.00	1.00	1.00	1.00
Gini coeficient	26.66	26.61	26.46	26.72	26.66	26.61	26.46	26.72	1.00	1.00	1.00	1.00
Poverty rate (60% median HDI)	15.00	15.26	14.44	14.68	15.00	15.26	14.44	14.68	1.00	1.00	1.00	1.00