

# **EUROMOD**

## **COUNTRY REPORT**



# **NETHERLANDS (NL)**

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

EUROMOD has been enlarged to cover 27 Member States and is updated to recent policy systems using data from the European Union Statistics on Income and Living Conditions (EU-SILC) as the input database, supported by DG-EMPL of the European Commission.

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

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The results presented in this report are derived using EUROMOD version G2.0. EUROMOD is continually being improved and the results presented here may not match those that would be obtained with later versions of EUROMOD.

For more information, see: <http://www.iser.essex.ac.uk/research/euromod>

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

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## 1. BASIC INFORMATION

### 1.1 Basic information about the tax-benefit system

- The tax-benefit system is largely a unified, national system. The main exception is the immovable property tax (*Onroerende Zaak Belasting, OZB*) collected and determined by local authorities (municipalities).
- The tax system generally changes on 1<sup>st</sup> January, each year. Main benefit changes happen at the same time, but may also be implemented on 1<sup>st</sup> July.
- The state pension age is 65 for men and women. Beginning in 2013, the state pension age will gradually be increased to 67 in 2021.
- Minimum school leaving age is 16; dependent children are defined as age under 16 or under 18 and (largely) provided for by the parents.
- For benefit purposes lone parents are the parents of resident dependent children; they do not cohabit with a partner (but could live with other family members). For tax purposes a lone parent is a parent of a resident dependent child; here, the only other household members are children aged younger than 27.
- The income tax system is largely an individual system, with the spouses being assessed independently. However, spouses with low or zero taxable income may be entitled to tax credits dependent on the income of a higher earning partner.
- 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.
- Income tax withholdings are usually collected in such a way that the amount due in the financial year is more or less approximated. In principle all tax payers must file a tax return for income tax.
- Capital income taxation amounts to 30% of the assumed rate of return of 4% (taking account of a minimum threshold).
- Most taxation amounts are subject to automatic yearly indexation by the inflation rate. Net benefits are linked to the net minimum wage.
- Most social contributions and state benefits and pensions are assessed and delivered on a monthly basis. Amounts are referred to in monthly terms. The main exception is income tax, where liability is based on annual income and allowances and thresholds are referred to in annual terms. Another exception is child benefit, which is paid out on a three-monthly basis. Furthermore, the municipal property tax is levied annually.
- Self-employed who work a minimum number of hours (1,225 per year) in their own firm are entitled to self-employment deduction. They are not included in unemployment insurance and disability insurance and are subject to separate arrangements with respect to social assistance.

### 1.2 Social Benefits

**Child benefit (*kinderbijslag AKW*):** benefit paid to all couples and single parents with dependent children aged below 18. Amount per child depends on age of the child and, to a minor extent, on the number of dependent children. The benefit is not taxable.

**Survivor benefit (*nabestaandenuitkering ANW*):** paid to surviving spouses aged younger than 65, with a dependent child, a disability or born before 1<sup>st</sup> January, 1950. The benefit is means tested, income received ‘in relation with work’ (i.e. social insurance benefits) are deducted entirely, but part of income received from work is exempt. The person who in his household takes care of a child of whom one parent has died is entitled to a ‘half-orphan’-benefit (*halfwezenuitkering*).

**The state old age pension (*ouderdompensioen, AOW*)** is a flat rate benefit paid to all persons aged 65 or over who were resident in the Netherlands between the ages of 15 and 65. For each year of absence from the Netherlands during that time 2% of the full benefit is deducted. Persons with a spouse younger than 65 are entitled to a supplement.

**Social assistance (*bijstand, WWB*)** is paid to households (couples, single parents, single persons) with low income and low assets. Separate arrangements (*IOAW/IOAZ*) without asset test exist for unemployed persons aged above 50.

**Rent allowance (*huurtoeslag*)** is a benefit paid to tenants with low income and low assets whose rent exceeds a norm amount (but does not exceed a maximum ‘social rent’ threshold). The benefit is not taxable. Income and assets of the applicant, his/her benefit partner (‘*toeslagpartner*’) and other residents are taken into account.

**Unemployment benefit (*werkloosheidsuitkering WW*)** is paid to persons younger than 65 who lost their job. The benefit amount is a percentage of previous earnings (with a maximum). Entitlement requires a certain minimum employment history as well as active job search. Duration depends on age and employment history.

**Disability benefit (*arbeidsongeschiktheidsuitkering, WIA*):** two main arrangements, after two years of illness. IVA for persons who fully lost their ability for work (> 80%) with no/small recovery probability, WGA for persons who lost their ability for work for 35-80%. IVA pays 75% of earnings (with maximum) until age 65. WGA depends on rate of disability and extent to which remaining ability is used. Notably, WIA was introduced in 2006. Most disability benefit recipients keep the previous benefit (WAO). Moreover, separate disability arrangements exist for persons who were already disabled as a child (Wajong) and for disabled self-employed (WAZ, no new cases accepted).

**Care allowance (*zorgtoeslag*)** is a benefit paid by the tax authorities to persons with low income to (partly) enable them to pay for their (compulsory) private health insurance. Income of the applicant and his/her benefit partner (‘*toeslagpartner*’) is taken into account.

**Child care allowance (*kinderopvangtoeslag*)** is a benefit paid by the tax authorities to persons in work or education to (partly) enable them to pay for (professional) child care. The benefit consists of two parts: an income dependent part paid out of the government budget and a part dependent on the actual child care costs, paid for by the employer.

**Maternity allowance (*zwangerschapsuitkering*)** is a benefit paid for 16 weeks, equal to 100% of earnings (with a maximum).

There are a number of specific benefits for specific target groups such as artists, military, war victims 1940-45, persons active in the resistance 1940-45, and there are specific compensations for necessary expenditures by chronically ill and handicapped, and e.g. families with children younger than 18 who are in specific types of education not financed by the state. There are also specific social assistance arrangements for the self-employed.

- *Not strictly benefits*

In addition there are components of income that are not strictly part of the benefit system. These include:

**Scholarships** (*basisbeurs, aanvullende beurs*) are paid to students aged 18+. The basic scholarship (*basisbeurs*) depends on the level of education and on whether the student lives with his parents or not. The supplementary scholarship (*aanvullende beurs*) depends on the level of education and the income of the parents. The paid amounts also depend on the own income of the student and conditional on the progress in education. Additionally, student loans are available.

**Occupational** (employer-provided) **pensions** are earnings related pensions that for the majority of employees supplement the flat-rate state pension (AOW) after age 65. In a decreasing number of cases, the occupational pensions include early retirement arrangements (starting before the state pension age of 65).

In case of **sickness** the employer pays (at least) 70% of the wage for a period of at most two years (*wet loondoorbetaling bij ziekte*).

### 1.3 Social contributions

Many benefits are largely or wholly paid for by social contributions. A difference can be made between employees insurances (unemployment insurance, *Werkloosheidswet (WW)* and disability insurance, *Wet Werk en Inkomen naar Arbeidsvermogen (WIA)*) where the contributions are shared between employee and employer or paid by the employer, and peoples insurances (basic state pension: *Algemene Ouderdomswet (AOW)*, survivor benefit *Algemene Nabestaandenwet (ANW)* and the General act on special health care costs: *Algemene Wet Bijzondere Ziektekosten (AWBZ)*) which are collected by the tax authorities in combination with income tax. In addition, all residents are obliged to take out private health insurance, which is partly paid for by amounts determined by the insurance companies and partly by income related amounts which are compensated by the employer, if any (health care insurance act, *Zorgverzekeringswet (ZVW)*).

#### Employees insurances:

**Unemployment insurance contribution** (*werkloosheidswet, WW*) is partly paid by the employer and partly by the employee. A distinction can be made between a national component and a component which differs by sector.

**Disability insurance contribution** (*Wet Werk en Inkomen naar Arbeidsvermogen (WIA)*) is paid by the employer. Unemployment and disability insurance have the same tax base and the same ceiling determining the maximum contribution and the maximum benefit).

#### Peoples insurances:

**Basic state pension contribution** (*Algemene Ouderdomswet (AOW)*) is paid by all persons with taxable income from work and/or accommodation aged younger than 65. It is calculated as a percentage up to a maximum.

**Survivor benefit contribution** (*Algemene Nabestaandenwet (ANW)*) is paid by all persons with taxable income from work and/or accommodation. It is calculated as a percentage up to a maximum.

**General act on special health care cost contribution (*Algemene Wet Bijzondere Ziektekosten (AWBZ)*)** is also paid by all persons with taxable income from work and/or accommodation. It is also calculated as a percentage up to a maximum.

### Other:

**Health insurance contribution (*Zorgverzekeringswet ZVW*):** all residents have to insure privately and pay health insurance premiums to health insurance companies. In addition, an income related contribution is levied up to a maximum; this contribution is usually paid for by a (taxable) compensation by the employer or benefit agency in the case of earnings and most benefits (not: old age pensions).

## 1.4 Taxes

**Personal Income Tax (*inkomstenbelasting*):** it is taxed at the individual level, but tax credits of partners with a low income may depend on the income of the higher earning spouse. The base of the income tax is relatively broad. The main exceptions are child benefit and child support, and rent allowance, care allowance and child care allowance. Mortgage interest payments for the main residence are deductible from taxable income but imputed rent is taxed. Apart from the main residence, (returns from) properties and assets are taxed by a separate schedule. Income tax is largely collected at source (*loonbelasting*) but the final assessment is made on the basis of tax returns sent in after the end of the tax year (= calendar year).

**Corporate Income Tax (*vennootschapsbelasting*)** is taxed on the profits of (larger) firms.

**Dividend Tax (*dividendbelasting*):** companies paying dividends to their shareholders have to pay a fixed percentage as dividend tax. For shareholders who also pay income tax the dividend tax withheld by the company is deducted from the income tax due.

**Inheritance tax (*successierecht*):** It is charged using flat tax rates. There are exemptions and deductions as well as different rates, dependent on the type of relationship the individual has/had with the deceased and the nature of the donation or bequest.

**Value Added Tax (*belasting toegevoegde waarde*):** there are two rates: 6 percent for books, magazines and newspapers, food and non-alcoholic beverages, agricultural products and services, personal transport, rent of holiday homes and campings, access to cultural and sports events, services of hair dressers, repairs of clothing, shoes and bicycles, medicines; and 19 percent for other goods and services. Immovable property older than two years, medical services, education, sports services to club members, socio-cultural services and products, child care, care and housekeeping services, most bank services and services by composers, writers and journalists are exempt.

**Excise duties (*accijnzen*):** are charged on alcohol and alcoholic beverages, beer, tobacco, and fuels.

**Motor vehicle tax (*motorrijtuigenbelasting*)** is charged on owners of motor vehicles.

**Tax of passenger cars and motorcycles (*belasting personenauto's en motorrijwielen*)** is charged on new and/or imported cars and other motor vehicles.

A **Transfer tax (*overdrachtsbelasting*)** of 6% (as of July 2011: 2%) is charged when one buys an immovable property (except newly built properties).

**Energy tax (*energiebelasting*)** is charged on the use of electricity, natural gas, and various fuels.



**Immovable property tax (*onroerend zaak belasting*):** is levied by municipal authorities on the owned residence. Municipalities determine the tax as a percentage of the estimated value of the house.

## 2. SIMULATION OF TAXES AND BENEFITS IN EUROMOD

### 2.1 Scope of simulation

Most of the taxes and benefits mentioned in the previous section are simulated by EUROMOD, but not all. Some of the taxes or benefits are beyond its scope (i.e. indirect and business taxation), others cannot be simulated based on the available data, and therefore are excluded from further simulations or imputations into the model. If feasible, though, they are included in the EUROMOD database either as individual or/and aggregate income sources. When possible, the output includes both the simulated and the original survey reported variables.

Table 2.1 and Table 2.2 list the main tax-benefit instruments in the Netherlands, as discussed in Section 1, and provide a brief explanation in which format the instruments are included in the EUROMOD database or why they are not (fully) simulated. The benefits that are simulated in EUROMOD include family benefits that depend on the number of children and their age. Furthermore, simulations are possible for a number of contributory (social insurance based) benefits, such as the state pension and non-contributory benefits such as social assistance assigned to low income households. A number of benefits with entitlement rights dependent on contribution history (i.e. unemployment, etc.) are only partially simulated due to the lack of data on previous employment history and salaries received

Most of the direct income taxes and social insurance contributions are simulated (except some minor ones). Nevertheless, application of some income tax allowances or estimation of some income taxation is not possible or not accurate enough due to the lack of more detailed information on a person's disability degree, economic activity type or other specific socio-economic information that is not collected in the EU-SILC database. In such cases, basic tax allowance levels or other general income taxation rules are applied.

Table 2.1 Simulation of benefits in EUROMOD

	Variable name(s)	Treatment in EUROMOD					Why not fully simulated?
		2009	2010	2011	2012	2013	
State pension	poa_s	S	S	S	S	S	
Survivor benefit	psu_s	S	S	S	S	S	
Other pensions	poacm	I	I	I	I	I	Insufficient information on contributions/rules etc
Contributory Unemployment benefit	bunct	PS	PS	PS	PS	PS	Insufficient information on unemployment history
Other unemployment benefit	bunst	I	I	I	I	I	Insufficient information
Disability benefit	pdi	I	I	I	I	I	Insufficient information on earnings history, extent of disability etc
General Social assistance	bsa00_s	S	S	S	S	S	
Other taxable social assistance	bsaot	I	I	I	I	I	Insufficient information
Other nontaxable social assistance	bched	I	I	I	I	I	Insufficient information
Scholarships etc	bed	I	I	I	I	I	Insufficient information
Sickness benefit	bhl	I	I	I	I	I	Insufficient information
Care allowance	bhlmt_s	S	S	S	S	S	
Child benefit	bfa_s	S	S	S	S	S	
Child allowance	bch_s	S	S	S	S	S	
Housing benefit	bho_s	S	S	S	S	S	

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

Table 2.2 Simulation of taxes and social contributions in EUROMOD

	Variable name(s)	Treatment in EUROMOD					Why not fully simulated?
		2009	2010	2011	2012	2013	
Personal Income Tax	tin_s	S	S	S	S	S	
Corporate Income Tax		E	E	E	E	E	Insufficient information
Inheritance tax		E	E	E	E	E	Insufficient information
Immovable Property tax		E	E	E	E	E	Insufficient information
Other direct taxes		E	E	E	E	E	Insufficient information
Value Added Tax		E	E	E	E	E	Insufficient information
Excise duties		E	E	E	E	E	Insufficient information
Other indirect taxes		E	E	E	E	E	Insufficient information
Unemployment insurance employees	tsceui_s	S	S	S	S	S	
Unemployment insurance employers	tscerui_s	S	S	S	S	S	
Disability insurance Employers	tscerdi_s	S	S	S	S	S	
Health insurance	tschl_s	S	S	S	S	S	
Peoples insurance:	tscepi_s	S	S	S	S	S	
AOW	Temp_PIpension						
AWBZ	Temp_PHealth	S	S	S	S	S	
ANW	Temp_PSurvivor	S	S	S	S	S	

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

- **Structural changes between 2009 and 2010**

- 1) Social assistance (from October 2009)

- a) For persons younger than 27 normal Social Assistance (WWB) was replaced by the WIJ (*Wet Investeren in Jongeren* – Law on the investment in young people). Instead of a social assistance benefit, persons younger than 27 have to accept an offer for work or schooling. The level of the means tested benefit they may receive remains unchanged. Under the WIJ, a number of persons eligible for Social Assistance under the old law would not receive a benefit. However, it is unclear how many persons will be affected, in particular because this depends on individual circumstances and choices. Moreover, persons who already received social assistance before 1 October 2009 would not lose their benefit for a certain transitional period.

- **Structural changes between 2010 and 2011**

- 1) Income tax

- a) (Starting in 2009), pay-out of the general tax-credit to the fiscal partner with a low taxable income (and low amounts of income tax and peoples’ insurance

contributions to be paid) will gradually be abolished, so that it is zero in 2024. In 2011 the reduction is 20%, unless the fiscal partner with the low income was born before January 1, 1972 or had a child living at home born after December 31, 2004.

- b) From 2011, the threshold between the second and third income tax band (and the threshold above which no peoples' insurance contributions are levied) will be different for persons born before 1 January 1, 1946, and younger persons. As a result younger elderly will pay more taxes than older persons.

- ***Structural changes between 2011 and 2012***

- 1) Social assistance (from January 2012)
  - a) The separate social assistance benefit for persons younger than 27 (WIJ) has been abolished. Social assistance for persons younger than 27 is transferred to the normal Social Assistance benefit (WWB).
  - b) Further reforms of the normal social assistance benefit (WWB) include the introduction of a household means test. This reform appears to have been suspended following the fall of the Rutte government.
- 2) Income tax
  - a) The reduction of the pay-out of the general tax credit to the fiscal partner is 26.67% if he/she is born after December 31, 1971 and does not have a child born after December 31, 2005.
  - b) The reduction of the pay-out of the general tax credit to the fiscal partner is 13.33% if he/she is born between December 31, 1962 and January 1, 1972, or if he/she is born after December 31, 1971 and has a child born after December 31, 2005.
  - c) The increases in the work credit for persons aged 57 or over have been abolished. In addition, the bonus on continued work for persons aged 62 or over have been reduced.
  - d) The tax allowance for self-employed is no longer dependent on income.

- ***Structural changes between 2012 and 2013***

- 1) State pension
  - a) The state pension age of 65 has been increased with 1 month. In the coming years, the pension age is to be increased gradually until age 67. Further increases can be expected in line with increases in life expectancy
- 2) Health insurance contribution
  - a) In cases where the earnings related health insurance contribution used to be compensated by a taxable compensation from the employer or benefit agency, employers and benefit agencies now have to pay the earnings related health insurance contribution directly. This contribution is not taxable.
- 3) Income tax
  - a) The bonus on continued work has been abolished. Instead a work bonus has been introduced for persons born in 1949, 1950, 1951 and 1952 with taxable earnings between €17,139 and €32,326.
  - b) A temporary tax credit for persons in early retirement has been introduced.
  - c) For mortgage interest to be tax deductible, new mortgages need to fulfil certain conditions with respect to repayment of the loan.

## 2.2 Order of simulation and interdependencies

The following table shows the order in which the main elements of the Dutch system are simulated. Notably, although yem\_nl is switched on, the minimum wage is not implemented (see section 4.3) in the baseline. Social assistance is calculated after all other benefits that are

included in the means test have been simulated (bsanet\_nl, bsa\_gross\_nl). The final calculation of social assistance also includes the recalculation of income tax and social insurance contributions. Care allowance and health allowance are calculated at the end because they depend on taxable income.

**Table 2.3 EUROMOD Spine: order of simulation**

<b>Policy</b>	<b>Description</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
uprate_nl	Definition of uprating factors	on	on	on	on	on
ildef_nl	Definition of income lists	on	on	on	on	on
tundef_nl	Definition of tax units	on	on	on	on	on
constdef_nl	Definition of constants	on	on	on	on	on
InitVar_nl	Definition of variables	on	on	on	on	on
yem_nl	Minimum wage	on	on	on	on	on
yse_nl	Recode negative income from self-employment to zero	on	on	on	on	on
bfa_nl	Child Benefit	on	on	on	on	on
bunct_nl	Unemployment ins. benefit	on	on	on	on	on
psu_nl	Survivor pension	on	on	on	on	on
poa_nl	State pension	on	on	on	on	on
eestic_nl	Employee social ins. contr.	on	on	on	on	on
tschl_nl	Health ins. contr.	on	on	on	on	on
tin_nl	Gross income tax (box1)	on	on	on	on	on
tinkt_nl	Gross income tax (box3)	on	on	on	on	on
peoplesic_nl	Gross people insurance contribution	on	on	on	on	on
tintc_nl	Income tax credits	on	on	on	on	on
chall_nl	Child allowance	on	on	on	on	on
bsanet_nl	Social assistance benefit (net)	on	on	on	on	on
bsagross_nl	Social assistance benefit (gross)	on	on	on	on	on
bhlmt_nl	Care allowance	on	on	on	on	on
ersic_NL	Employer social ins. contr.	on	on	on	on	on
bho_nl	Housing benefit	on	on	on	on	on
	Output policies	on	on	on	on	on

## **2.3 Policy switches**

Currently, the Dutch EUROMOD model does not use policy switches. Policies can be switched on or off by changing the relevant parameters. A case in point is the minimum wage policy (see also section 4.3). This is switched off in the baseline but can be switched on by changing the value of the final function of the yem\_nl policy from ‘off’ to ‘on’.

## **2.4 Social benefits**

### **2.4.1 Child benefit (*bfa\_s*)**

- *Brief description*

Benefit targeted to all benefit units with children aged below 18.

- **Definitions**

Unit of analysis is the benefit unit consisting of the head, spouse or cohabitant partner and children under 16 or under 18 years if they are in education (at least 213 hours per quarter), or unemployed, or at least 45% disabled. Eligible children living in the household, but without parents (i.e. so called “loose children”), are also counted as dependent children.

- **Eligibility conditions**

Parents (including foster-parents) are eligible for child benefits for children aged less than 18 but eligibility for children aged above 15 and less than or equal to 17 requires that they are in education, or unemployed, or at least 45% disabled. In EUROMOD, the condition that children aged 16 and 17 are in education is assumed to be met if *dec* (current education) > 0, or if *les* = 6 (self-defined economic status = pupil, student, further training, unpaid work experience)

- **Income test**

For children aged 16 or 17, the parents should contribute to the sustenance of the children to an important extent, which translates to the condition that the income of the children in this age group should be less than €1,240 + 1,200/4 net per quarter (or €13.33 per month).

Table 2.4 Child benefit: income limits

Income limits	2009	2010	2011	2012	2013
Amount per quarter	1,240	1,240	1,240	1,240	1,266
+	1,200/4	1,200/4	1,250/4	1,250/4	1,300/4
= per month	513.33	513.33	517.5	517.5	530.33

- **Benefit amount**

The base amount is €194.99 per quarter per child. Different multipliers apply depending on whether the child was born before or after (and including) 1994. If born before 1<sup>st</sup> October 1994, the multiplier depends on both parity and age:

Table 2.5 Child benefit: base amounts

	2009	2010	2011	2012	2013
Base amount	194.99	194.99	194.99	188.57	191.65

Table 2.6. Child benefit: multipliers for children born before October 1<sup>st</sup>, 1994

AGE	Total number of eligible Children									
	1	2	3	4	5	6	7	8	9	10+
6 to 11	1.2143	1.3717	1.4241	1.5394	1.6086	1.6547	1.6876	1.7480	1.7950	1.8325
<18	1.4286	1.6138	1.6754	1.8111	1.8925	1.9467	1.9855	2.0565	2.1117	2.1560

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If born after 1<sup>st</sup> October 1994, the amount depends only on age:

**Table 2.7 Child benefit: multipliers for children born after 1<sup>st</sup> October 1994**

AGE	
<6	1
6 to 11	1.2143
<18	1.4286

The resulting multipliers for 2009 are as follows:

**Table 2.8 Child benefit: Multipliers 2009**

AGE	Total number of eligible Children									
	1	2	3	4	5	6	7	8	9	10+
<=5	1	1	1	1	1	1	1	1	1	1
6 to 11	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143
12, 13, 14	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286
15, 16, 17	1.4286	1.6138	1.6754	1.8111	1.8925	1.9467	1.9855	2.0565	2.1117	2.1560

A household with 4 children: 1 aged 3, 1 aged 10, 1 aged 14 and 1 aged 15 would be entitled to (1 + 1.2143 + 1.4286 + 1.8111) times the base amount per three months.

For 2010 - 2013 this would change to:

**Table 2.9 Child benefit: multipliers 2010-2013**

	AGE	Total number of eligible Children									
		1	2	3	4	5	6	7	8	9	10+
<b>2010</b>	<=5	1	1	1	1	1	1	1	1	1	1
	6 to 11	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143
	12 to 15	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286
	16, 17	1.4286	1.6138	1.6754	1.8111	1.8925	1.9467	1.9855	2.0565	2.1117	2.1560
<b>2011</b>	<=5	1	1	1	1	1	1	1	1	1	1
	6 to 11	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143
	12 to 16	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286
	17	1.4286	1.6138	1.6754	1.8111	1.8925	1.9467	1.9855	2.0565	2.1117	2.1560
<b>2012, 2013</b>	<=5	1	1	1	1	1	1	1	1	1	1
	6 to 11	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143	1.2143
	12 to 17	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286

No taxes/contributions are payable on child benefit. It is not included in the means test for the calculation of social assistance, rent subsidy and other benefits.

## 2.4.2 Survivor benefit (*psu\_s*)

- **Brief description**

Benefit for surviving spouse younger than the state pension age (see section 2.4.3).

- **Definitions**

Unit of analysis is the benefit unit - consisting of the head, spouse or cohabitant partner and own children under 18 years - if it consists of a surviving spouse with or without children.

- **Eligibility conditions**

Entitlement to the survivor benefit exists for the survivor younger than the state pension age who:

- has an unmarried child younger than 18 who does not belong to somebody else's household or
- is disabled for work for at least 45% or
- was born before 1<sup>st</sup> January 1950

Entitlement to the survivor benefit stops if the survivor repartners, but not if he/she starts living with two or more adults.

The person who in his household takes care of a child of whom one parent has died is entitled to a 'half-orphan'-benefit.

- **Income test**

The survivor benefit is income dependent: income received 'in relation with' work (i.e. social insurance benefits) is deducted entirely, but a part of income received from work (earnings, profits, private pensions (A)) is exempt ( $0.5 * \text{the minimum wage of } \text{€}1,381.20 \text{ per month (B)}$ ), plus a third of the remainder). In other words, the disregard equals:  $\max(0, \min(A, 0.5 * B) + 0.333 * \max(A - 0.5 * B, 0))$ . As a result, the benefit is paid in full if income from work is below €690.60, and zero if income from work is above €2,294.07. Notably, all these amounts are net of holiday allowance.

Table 2.10 Survivor benefit: relevant thresholds

	2009	2010	2011	2012	2013
Minimum wage (B)	1,381.2	1,407.6	1,424.4	1,446.6	1,469.4
Full benefit paid below (A)	690.6	703.8	712.2	723.3	734.7
No benefit paid above	2,294.07	2,335.74	2,359.02	2391.23	2,413.98

- **Benefit amount**

Survivor benefit: maximum: €1,154.03 = €1,068.98 + €68.27 holiday allowance + €16.78 extra allowance per month

'Half-orphan' benefit: €261.04 + 19.48 holiday allowance per month.



As of 2007, recipients of the survivor benefit are awarded an extra allowance<sup>1</sup>.

**Table 2.11 Survivor benefit: base amounts**

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Amount	1,068.98	1,087.96	1,097.88	1,111.95	1,119.52
Holiday allowance	68.27	68.70	70.17	73.27	82.56
Extra allowance	16.78	16.78	15.61	15.88	16.23
<b>Total</b>	<b>1,154.03</b>	<b>1,173.44</b>	<b>1,183.56</b>	<b>1,201.10</b>	<b>1,218.31</b>
Half orphan benefit (HOB)	261.04	263.98	265.46	269.65	265.76
Holiday allowance HOB	19.48	19.62	20.04	20.92	23.58
<b>Total HOB</b>	<b>280.52</b>	<b>283.60</b>	<b>285.5</b>	<b>290.57</b>	<b>289.34</b>

The survivor benefit is taxable. It is included in the means test for social assistance and other benefits.

- *EUROMOD notes*

In EUROMOD, it is assumed that a holiday allowance of 8% is already included in income from work and benefit income. The holiday allowance added to the survivor benefit is reduced by the same percentage by which the survivor benefit is reduced as a result of the means test.

In EUROMOD, private pensions received by males younger than 60 and females younger than 65<sup>2</sup> are assumed to be private survivor pensions, and, as such, not counted as income. Private pensions received by males aged between 60 and 65 are assumed to be old-age pensions, and counted as income received from work.

Notably, the current survivor benefit act ('Algemene Nabestaandenwet', ANW) was introduced on 1<sup>st</sup> July 1996. Special rules apply for persons who were already survivor before that date, and for persons born between 1<sup>st</sup> January 1950 and 1<sup>st</sup> July 1956 who lost their partner before 1<sup>st</sup> July 1999. These special cases are not taken into account in EUROMOD. Entitlement to ANW may also apply to divorcees if the ex-spouse dies. This is also not taken into account in EUROMOD.

The half-orphan benefit is not included in (or subject to) the means test: entitlement does not depend on income. It is added on top of the survivor benefit even if that is calculated as zero.

<sup>1</sup> The extra allowance is an addition to the regular allowance. It is added to maintain the purchasing power of the benefit separate from the normal indexation.

<sup>2</sup> We try to distinguish (private) survivor pensions from (early-retirement) old-age pensions. Relatively few women are working up to their early retirement age; therefore we assume that their pensions are survivor pensions (if they are survivor). On the other hand most men receiving pensions between age 60 and age 65 would be entitled to old age pensions based on their own work history. If younger than 60, the likelihood that they are already receiving an early retirement pension is small, and hence we assume that the pension they receive is a survivor pension if they are survivor.

### 2.4.3 State pension (*poa00\_s*)

- **Brief description**

Flat rate state pension for all residents aged 65<sup>3</sup> or above.

- **Definitions**

Unit of analysis is the individual.

- **Eligibility conditions**

All residents aged 65 or above are entitled to the flat rate State Pension (AOW). If both spouses are above 65 they both receive (in net terms) slightly more than half the (net) minimum wage, whilst single persons receive about 70% of the minimum wage. Persons with a spouse younger than 65 receive 50% of the minimum wage, with a supplement of at most 50% of the minimum wage. The supplement depends on the means of the younger spouse.

For every year between age 15 and 65 the pensioner lived abroad the State Pension is reduced by 2% (however, reductions are not taken into account in EUROMOD).

- **Income test**

The only means to be taken into account in the calculation of the State Pension are the means of the younger spouse (if aged < 65). When both spouses are 65 or older, they are both entitled to the full flat rate State Pension, irrespective of their income.

Means = max(0, Income 'in relation with' work (i.e. benefits))

+ max(0, 2/3 \* max (0, Income from work(A) - 0.15\*gross minimum wage(B)).

In other words, there is a disregard of: max (0, min(A, 0.15\*B) +1/3 \* (max(0, A - 0.15 \* B))

Gross minimum wage equals €1,381.2 in 2009. Notably, these amounts are net of holiday allowance. In EUROMOD, it is assumed that in income from work and benefit income a holiday allowance of 8% is included. The holiday allowance added to the supplement of the state pension is to be reduced by the same percentage as the supplement.

Private pensions are counted as income in relation with work.

- **Benefit amount**

Amounts for the state pension (per month):

Single, 65+: €1,001.94 + €6.5 holiday allowance + €6.45 extra allowance= €1094.89

Married/cohabiting, 65+ €86.78 + €40.36 + €6.45 = €133.59 (per person)

Supplement if spouse < 65: at most €86.78 + €40.36 = €127.14

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<sup>3</sup> From 2013 the official pension age will gradually be increased to 67 in 2023. Wherever relevant, from 2013 onward age 65 in this section should be replaced by 'the official pension age'

**Table 2.12 State pension: benefit amounts**

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Single person	1,001.94	1,017.97	1,034.38	1,046.28	1056.72
Holiday allowance	56.5	56.97	58.62	60.87	69.12
Extra allowance	36.45	34.26	33.09	33.65	28.14
Married/cohabiting	686.78	698.58	710.41	718.47	722.21
Supplement	686.78	698.58	710.41	718.47	722.21
Holiday allowance	40.36	40.69	41.87	43.47	49.36
Supplement holiday allowance	40.36	40.69	41.87	43.47	49.36
Extra allowance	36.45	34.26	33.09	33.65	28.14

Supplement = max (0, maximum supplement - means of younger spouse)

The latter amounts are valid for pensions started from 1<sup>st</sup> July 1996. For pensions started earlier, rules for persons with a spouse aged < 65 differ to some extent (not taken into account in EUROMOD). If the pension started between 1/2/1994 and 1/6/1996, the person with a spouse < 65 receives €1,001.94 + €56.5 holiday allowance + €36.45 extra allowance a supplement of max. €379.19 + €24.41. If the pension started before 1/2/1994 these amounts are also valid, but no distinction between income from work and other means of the younger spouse is made in the calculation of the supplement: all income is counted as income from work.

Since 2007, recipients of the state pension are awarded an extra allowance. This extra allowance does not affect the calculation of the supplement.

The state pension is taxable. It is included in the means test for social assistance and other benefits.

#### **2.4.4 Social assistance (*bsa00\_s*)**

- **Brief description**

A means tested benefit for benefit units lacking other sources of income.

- **Definitions**

Unit of analysis is the benefit unit consisting of the head, spouse or cohabitant partner and children under 16 or under 18 years if they are in education (at least 213 hours per quarter), or unemployed, or at least 45% disabled. Eligible children living in the household, but without parents (i.e. so called “loose children”), are also counted as dependent children.

- **Eligibility conditions**

A benefit unit (couple, single person, lone parent) is eligible for social assistance if:

- they are not a student and
- if single, assets are less than single asset limit of €5,455
- if married/cohabiting/lone parent, assets are less than married asset limit of €10,910
- aged 18 or over or
- a parent (Note: Even if a parent, persons below 18 are not generally entitled)

Self-employed persons with (temporary) low incomes (which includes those in receipt of the separate social assistance benefit (*Besluit Bijstandsverlening Zelfstandigen* BBZ) for self-employed) are not entitled to the regular social assistance benefit (*Wet Werk en Bijstand* WWB), indicated as BSA in this report.

**Table 2.13 Social assistance: Asset test amounts**

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Single persons	5,455	5,480	5,555	5,685	5,795
Couples, lone parents	10,910	10,960	11,110	11,370	11,590

Assets include financial assets (savings, cash, shares) of all members of the benefits unit but also the value of cars, motorcycles, caravans, boats, houses. The local authorities (municipalities) have some discretionary power in taking into account the value of cars, motorcycles and caravans (if not extremely expensive, they may be excluded). Debts are subtracted if the recipient of social assistance can show that the debt in question has to be repaid. Homeowners are usually excluded from social assistance (they have to 'eat' their house first).<sup>4</sup>

- **Income test**

The income base for the means test consists of all other employment income<sup>5</sup>, benefits and pensions except child benefits and allowances such as rent allowance and care allowance. Because the benefit is calculated as a net (after tax) amount, this requires the calculation of the taxes and social insurance contributions on all other income components before the entitlement to Social Assistance can be calculated. Notably, Social Assistance is subject to social insurance contributions and income tax as well. It is paid out as a net amount, on top of which the municipalities pay taxes and social insurance contributions directly to the relevant authorities.

So, to obtain net means, income taxation and social insurance contributions payable on gross means have to be calculated. In EUROMOD, the policy modules designed to compute income taxation and social insurance contributions are also used for the purpose of calculating the means taken into account for the calculation of social assistance. The withdrawal rate is 100%.<sup>6</sup>

In the case of a couple, the resulting net BSA amount is supposed to be shared equally among both spouses.

<sup>4</sup> In EUROMOD we approximate financial capital afc on the basis of investment income yiy. Similarly, we could have imputed the value of property on the basis of property income ypr. However, ypr may be income from the rental of rooms in the (rented) house it should be counted as income in the means test. For the time being we count ypr as income in the means test, and do not include an imputed value of property in the asset test.

<sup>5</sup> Employment income of dependent children is not taken into account.

<sup>6</sup> In exceptional cases (not taken into account in EUROMOD) (persons 57.5 - 64, single parents with child younger than 5, persons who are deemed to be dependent on part-time jobs for medical or social reasons) municipalities may allow that (for at most six months) min (0.25\*inc, 184) per month is not taken into account when calculating the BSA. Furthermore the interest received on assets below the asset-limit is not taken into account. Some lump sum benefits for necessary education and for accepting a job are not taken into account. In addition, the child tax credit is not taken into account, and for single parents with a child under 5, the child tax credit, the combination credit, the supplementary combination credit and the supplementary single parent credit are not taken into account in the means test.

Next, gross social assistance is approximated, by applying grossing-up factors to net BSA: gross BSA = *factor1* \* net BSA

**Table 2.14 Social assistance: Factor 1**

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
age < 65 <sup>[a]</sup>	1.557911	1.557832	1.551771	1.549189	1.587302

<sup>[a]</sup>For persons aged 65 or over factor 1 may assumed to be 1.

Finally, income taxation and social insurance contributions payable on gross social assistance are calculated and added to the amounts calculated earlier.

Notably, this procedure leads to incorrect results when the total amount of income tax and peoples' insurance contributions calculated for the BSA recipient (single person, single parent or couple) is negative. In these cases a revised calculation of net means applies in which income tax, people's insurance contributions and tax credits are not taken into account.

- ***Benefit amount***

- a) **Couples with children**

- €1,283.86 (if both aged 21-64)
- €1,353.95 (if both 65+)
- €1,353.95 (if one 65+, one 21-64)
- €700.39 (if both 18-20)
- €1,120.51 (if one 18-20, one 21+)

- b) **Couples without children**

- €1,283.86 (if both aged 21-64)
- €1,353.95 (if both 65+)
- €1,363.95 (if one 65+, one 21-64)
- €443.62 (if both 18-20)
- €863.74 (if one 18-20, one 21+)

- c) **Lone Parent**

- €98.7 + €256.77 (if 21-64)
- €1,240.38 (if 65+)
- €478.58 (if 18-20)

- d) **Single person**

- €641.93+ €256.77 (if really living alone) (21-64)
- €985.42 (if 65+)
- €221.81 (if 18-20)

Table 2.15 Social assistance: base amounts

	2009	2010	2011	2012	2013
Couple with children					
21-64	1283.86	1299.94	1313.85	1336.42	1321.96
65+	1353.95	1374.32	1388.16	1412.71	1397.3
1 21-64, 1 65+	1353.95	1374.32	1388.16	1412.71	
18-20	700.39	708.67	716.77	729.10	721.17
1 18-20, 1 20+	1120.51	1133.76	1146.70	1166.40	1153.76
Couple no children					
21-64	1283.86	1299.94	1313.85	1336.42	1321.96
65+	1353.95	1374.32	1388.16	1412.71	1397.3
1 21-64, 1 65+	1353.95	1374.32	1388.16	1412.71	
18-20	443.62	448.86	454.00	461.82	456.78
1 18-20, 1 20+	863.74	873.95	883.93	899.12	889.37
Single parents					
21-64	898.7	909.33	919.7	935.49	925.37
supplement	256.77	259.81	262.77	267.28	264.39
65+	1240.38	1255.47	1268.72	1291.60	1277.52
18-20	478.58	484.24	489.77	498.19	492.78
Single persons					
21-64	641.93	649.52	656.93	668.21	660.98
supplement	256.77	259.81	262.77	267.28	264.39
65+	985.42	999.17	1008.30	1026.35	1015.16
18-20	221.81	224.43	227.00	230.91	228.39

Persons aged below 65 who became unemployed after age 50 and exhausted their entitlement to (earnings related) unemployment benefits are entitled to a separate social assistance benefit: IOAW.<sup>7</sup> The difference with the general BSA (WWB) is that no asset test is applied to calculate the entitlement for IOAW. The IOAW also applies to persons partially disabled for work, younger than 50, who were already disabled for work at age 17 and who are receiving a disability benefit (Wajong) based on their partial disability (< 80%).

- *EUROMOD notes*

The separate social assistance act (WIJ) for persons younger than 27, in force between 1-10-2009 and 1-1-2012, was not modelled separately.

<sup>7</sup> Since the eligibility for IOAW can only be approximated (in particular the age at which one became unemployed is not registered in the data) previous EUROMOD versions overestimated the number of persons receiving IOAW and underestimated ordinary BSA. In actual fact, the number of recipients of IOAW is less than 5% of that of BSA. Lacking better data, we do not model IOAW in EUROMOD

## 2.4.5 Rent allowance (*bho\_s*)

- **Brief description**

Rent allowance is a benefit targeted to tenant households with high (but not too high) rents given their income. These households are entitled to a monthly means-tested rent subsidy.

- **Definitions**

Unit of analysis is the household: in addition to the income of the benefit unit, income of other household members is also taken into account. Income of children younger than 23 is only taken into account above a threshold.

Actual rent: rent to be paid to the landlord/owner of the accommodation

Norm rent: Rent amount used in the formula for the computation of the rent allowance, depending on the income of the tenant and his household composition.

- **Eligibility conditions**

Since 2006, the current taxable income (*il\_taxabley*) is taken into account. There is also an asset test: the tax unit is not entitled to rent subsidy if income in Box 3 (Income from saving and investment - see section 2.6.4) produces a positive amount of income tax.

The eligible household can follow into one of four groups depending on age and number of people in the household:

A. Single person household ( $nPersInTUt=1$ ) age under 65 ( $dag < \$PenAge$ )

C. multipersons household ( $nPersInTu \geq 2$ ) in which more than half of income is received by persons under 65 on 1/1/2009. The latter condition is assumed to be satisfied if the head is age <65 in 2009.

E. Single person ( $nPersInTUt=1$ ) elderly (over 64 on 1/1/2009) household ( $dag \geq \$PenAge$ ).

G. multipersons elderly household ( $nPersInTu \geq 2$ ) in which more than half of income is received by persons 65+ on 1/1/2009 ( $dag \geq \$PenAge$ )

- **Income test**

The rent allowance is a means-tested benefit as it depends on income as described in the next section.

Asset test: no rent subsidy is paid if tax payable on income in Box 3 is nonzero.

Income disregard: for children younger than 23 up to €4341 of their income is not taken into account.

Table 2.16 Rent allowance: disregarded child income

	2009	2010	2011	2012	2013
Disregarded child income	4341	4424	4451	4527	4627

- **Benefit amount**

Computation of rent subsidy (amounts per month): If the actual rent is between €200.70 (*lo\_rent\_lt*) and €31.73 (*up\_rent\_lt*) per month in 2009, the monthly rent subsidy is calculated as follows:

Table 2.17 Rent allowance: relevant amounts

	2009	2010	2011	2012	2013
lo_rent_lt	200.70				
up_rent_lt	631.73	647.53	652.52	664.66	681.02
rent1_lt	348.99	357.37	361.66	366.37	374.44
rent21_lt	499.51	511.50	517.64	524.37	535.91
rent22_lt	535.33	548.18	554.76	561.98	574.35
subsidy2_rt	0.75	0.75	0.75	0.75	0.75
subsidy3_rt	0.5	0.5	0.5	0.5	0.5

1) norm rent < actual rent <= €348.99 (*rent1\_lt*):

$$\text{subsidy} = \text{actual rent} - \text{norm rent}$$

2) (norm rent < actual rent) & (€348.99 < actual rent <= B).

$$(B = \text{€}499.51 \text{ (1,2pers)}, (\text{rent21\_lt}), B = \text{€}535.33 \text{ (3+ pers)} (\text{rent22\_lt}));$$

$$\text{subsidy} = 0.75(\text{subsidy2\_rt}) * (\text{actual rent} - \max(\text{norm rent}, 348.99)) + \max(0, 348.99 - \text{norm rent})$$

3) norm rent < actual rent & Actual rent > B:

$$\text{subsidy} = 0.5(=\text{subsidy3\_rt}) * (\text{actual rent} - \max(B, \text{norm rent})) + 0.75 * \max(0, B - \max(\text{norm rent}, 348.99)) + \max(0, 348.99 - \text{norm rent})$$

Notably, the *subsidy3\_rt* of 0.5 reduces to zero unless the household is a single person household or one of the household members is aged 65 or over.

No subsidy if income higher than highest amounts (maximum income) in Table 30 or if actual rent above €631.73 (*up\_rent\_lt*) or below €200.70 (*lo\_rent\_lt*).

Norm rent calculation: it depends on the age and the number of persons in the household and the taxable income.

Since 2008, the norm rent is no longer derived from a table but calculated on the basis of a formula:  $a * \text{income} * \text{income} + b * \text{income} + c$ . There is a minimum norm rent, and a maximum income threshold above which no rent allowance is received. The minimum norm rent holds for incomes below the minimum threshold.



Table 2.18 Parameters used for the calculation of norm rent (2009, 2010, 2011, 2012, 2013)

2009	A	C	E	G
a	0.000000811353	0.000000468962	0.000001377834	0.000000799752
b	0.000891346453	0.001198428415	-0.006924833530	-0.005006518373
c	17.05	17.05	17.05	17.05
minimum	204.86	204.86	203.04	201.23
minimum thr	15250	19700	15775	21275
maximum income	20975	28475	19800	27075
2010	A	C	E	G
a	0.000000692008	0.000000393459	0.000001223301	0.000000691278
b	0.002058027571	0.002033539981	-0.007072060881	-0.005671181587
c	17.05	17.05	17.05	17.05
minimum	209.37	209.37	207.55	205.74
minimum thr	15450	19975	15900	21425
maximum income	21450	29125	20200	27575
2011	A	C	E	G
a	6.74894E-07	3.82988E-07	1.18258E-06	6.70694E-07
b	0.002076557	0.002013353	-0.006695505	-0.005468796
c	17.91	17.91	17.91	17.91
minimum	212.24	212.24	210.42	208.61
minimum thr	15700	20350	16100	21725
maximum income	21625	29350	20325	27750
2012	A	C	E	G
a	6.69608E-07	3.79874E-07	1.15684E-06	6.57239E-07
b	0.002099551	0.002050539	-0.006463066	-0.005330777
c	18.64	18.64	18.64	18.64
minimum	215.50	215.50	213.68	211.87
minimum thr	15650	20224	16075	21675
maximum income	22025	29900	20675	28225
2013	A	C	E	G
a	7.48531E-07	4.18659E-07	1.11439E-06	6.45458E-07
b	0.001957364	0.002104458	-0.006236885	-0.00527828
c	27.44	27.44	27.44	27.44
minimum	222.18	222.18	220.36	218.55
minimum thr	14875	19200	16250	21775
maximum income	21025	28550	21100	28725

Rent allowance is not taxable. It is not included in the means test for social assistance and other benefits.

#### 2.4.6 Unemployment benefit (*bunct\_s*)

- *Brief description*

The (contributory) unemployment insurance benefit comprises two types of benefits:

- General (short-term) benefit;
- Extended (earnings related) benefit

The unemployment insurance scheme covers all employees under 65. *Self-employed* are not covered.

- ***Definitions***

The unit of analysis is an individual person.

- ***Eligibility conditions***

Short term benefit: eligible are persons who have been at least 26 weeks in paid employment during the last 36 weeks. Notably, short term benefit is received only if one is not eligible for extended benefit.

Extended benefit: eligible persons are those who have been at least 26 weeks in paid employment during the last 36 weeks plus they have worked at least 52 days or more during at least four of the last five years.

- ***Benefit amount***

Short term and extended benefit: 75% of previous earnings up to a maximum daily wage of €183.15 during the first two months, 70% thereafter.

*Payment duration:*

Short term benefit: three months

Extended benefit: duration in months equals the number of years worked (employment record), with a maximum of 38 (the minimum being four months with a minimum employment record of four years).

*Employment record (when relevant)*

The employment record includes each of the previous five years in which the recipient has been employed 52 or more days plus the number of calendar years since 18<sup>th</sup> birthday minus five<sup>8</sup> if he/she is age >22. Moreover, for people who were not in paid employment in the last five years, calendar years spent taking care of children younger than 6 are taken into account, as well as half of the years in which he/she took care of children aged between 6 and 12.

*Previous earnings:* is defined as gross employment income minus pension contributions minus tax exempt savings.

Notably, when the total net household income (defined according to the means test for Social Assistance) is below the Social Assistance level, persons entitled to Unemployment Benefit are entitled to a supplement to reach the SA-level without an asset test, according to the *Toeslagenwet* ('extra allowances act') (this is comparable to the way the IOAW benefit is calculated). During at most two years (or until age 65 when having become unemployed when older than 57.5 years) part of the income from work may not be taken into account when computing this extra allowance: all if less than 5% of the minimum wage, 30% up to 15% of the minimum wage.

No extra allowance is granted to single persons younger than 21 living with their parent(s), and to persons with a partner, when born after 31/12/1971 and not having a child younger than 12.

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<sup>8</sup> Notably, since 1<sup>st</sup> January 2005, if possible, the actual number of years worked is taken into account.

Minimum wage for persons younger than 23:

AGE	22	21	20	19	18	17	16	15
%	85	72.5	61.5	52.5	45.5	39.5	34.5	30

Unemployment benefit is taxable. It is included in the means test for social assistance and other benefits.

- **EUROMOD notes**

In EUROMOD, eligibility is assessed chiefly by checking who is actually in receipt of unemployment benefits in the data. But rather than simply using the observed receipt as part of the eligibility criteria, all eligibility rules are covered. However, as not all required information (e.g. detailed work or unemployment history) is available; several assumptions are made, among else considering some rules automatically fulfilled for those in receipt. This approach is chosen so that the benefit can be also modelled for those currently employed if needed (e.g. to simulate their entitlement to unemployment support if they become unemployed from the current year, for replacement rates calculations).

Therefore, EUROMOD distinguishes individuals into three groups:

- Those currently employed ( $yem \neq 0$  &  $lunmy\_s = 0$  &  $bunct = 0$ )
- Those currently unemployed ( $lunmy\_s > 0$ ) and in receipt ( $bunct > 0$ )
- Those currently unemployed ( $lunmy\_s > 0$ ) and not in receipt ( $bunct = 0$ )

Both general and extended unemployment benefits are simulated. Which benefit one is entitled to depends on its employment history duration.

*Unemployment duration (lunmy\_s)*: it is set equal to the maximum between the observed unemployment duration (*lunmy*) and the observed benefit receipt (*bunctmy*) for the unemployed whilst for those currently employed (in case they are simulated to be unemployed), the unemployment duration is set equal to the reported number of months in employment in the current year (*liwmy*).

*Contributory history (liwmy\_s)*: is based on the reported number of weeks in employment (*liwmy*) subject to be maximum equal to the total number of weeks in work (*liwwh*). The qualifying period is computed for the three groups described above making sure that individual currently unemployed and in receipt of the benefit satisfy the qualifying condition (taking the maximum between their time in work and the limit of 26 weeks necessary to qualify for the UB). For people currently unemployed and not in receipt of the benefit, qualifying period is set to zero.

Short term unemployment benefit duration (*bunctmy\_s*) is calculated according to the rules above, using modelled contribution history (*liwmy\_s*), while also controlling for the unemployment duration (*lunmy\_s*). It is set to be equal to the unemployment duration subject to the maximum benefit duration (three months).

Extended unemployment benefit duration (*bunctmy01\_s*) is also set to be equal to the unemployment duration (*lunmy\_s*) subject to the maximum benefit entitlement period.

Although it is possible that some unemployment spells had started before the beginning of the reference year, SILC does not record information on unemployment history. Setting the UB duration to *bunctmy\_s* or *bunctmy01\_s* it is like assuming that unemployment spells always start from the reference year (*lunmy\_s* varies between 0-12 months and refers only to the reference

year). Although this is a strong assumption, we think this assumption becomes acceptable when considering that the main aim of the unemployment policy simulation is to simulate variation in the current employment status of employees.

When applying the upper daily threshold to previous gross earnings, we assume that there are 30.38 days per month and  $52/12 = 4.34$  weeks per month.

At this point, working age people who are unemployed (*lunmy\_s* > 0), have sufficient contribution history and are not self-employed (i.e. have employment earnings or no self-employment status as defined by *temp\_tinyse* (income from self-employed work represents more than 60% of earnings)) are considered eligible. It is assumed that all of them are involuntary unemployed and capable and available for work (there is a variable in the SILC data identifying the latter but only filled in for those currently unemployed).

Benefit amount is calculated based on previous earnings and benefit duration, subject to the lower and upper thresholds. For those currently employed, current earnings are used. For those currently unemployed and in receipt, previous earnings are used which have been imputed by reversing unemployment insurance benefit rules. For those currently unemployed and not in receipt, imputed wage is used. Finally, the benefit amount is adjusted with the number of months in receipt (*bunctmy\_s* and *bunctmy01\_s*).

EUROMOD simulates the contributory part of the unemployment benefit in the Netherlands, but when this policy is switched off, income lists using simulated contributory unemployment benefit *bunct\_s* should replace this with the observed SILC variable *bunct*. This is done by making use of EUROMOD's *fnv\_SetDefault* which sets *bunct\_s=bunct* (from SILC) when *bunct\_s* is not found because the UB policy is switched off.

### 2.4.7 Care allowance (*bhlmt\_s*)

- **Brief description**

This benefit provides partial compensation for the obligatory private health insurance premium for residents aged 18+ with a Dutch health insurance and low taxable income.

- **Definitions**

Tax unit is the individual with his/her 'allowance partner' which could be:

- 1) the spouse in a married or registered couple
- 2) the fiscal partner
- 3) the spouse with a cohabitation contract
- 4) the other parent of a child
- 5) last year's allowance partner
- 6) the pension partner
- 7) the co-owner of the accommodation (with shared responsibility for the mortgage) or
- 8) a person of aged 18+ living with the reference person for 6+ months.

The allowance partner cannot be parents, grandparents, children, grandchildren. They cannot be brother or sister of the individual if both live with their parents. As of 2013, conditions 5) and 8) no longer apply. Family members can be fiscal partners if one of the other conditions applies. In addition, for parent and child to be allowance partners, both have to be aged 27 or older.

- **Eligibility conditions**

All residents aged 18 or over with a Dutch health insurance are eligible if their total taxable income (Box 1, Box 2 and Box 3) passes the income test.

- **Income test**

There are separate income tests for single tax payers and for tax payers with allowance partners. In 2009, eligibility was limited to single tax payers with total taxable income less than €32,502 per year and tax payers with allowance partners with total taxable income less than €47,880 per year.

**Table 2.19 Income limits health care allowance**

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Single tax payers	32,502	33,743	36,022	35,059	30,939
Tax payers with allowance partners	47,880	50,000	54,264	51,691	42,438

- **Benefit amount**

The benefit is calculated as follows: the norm premium is calculated as  $0.05 \cdot \max(0, \text{total taxable income} - 19,135) + 926 \cdot (1 \text{ if person with allowance partner, } 0 \text{ otherwise}) + 516 \cdot (1 \text{ if person without allowance partner, } 0 \text{ otherwise})$ .

Norm premium =  $A \cdot \max(0, \text{total taxable income} - B) + C \cdot (1 \text{ if person with allowance partner, } 0 \text{ otherwise}) + D \cdot (1 \text{ if person without allowance partner, } 0 \text{ otherwise})$

Health care allowance = (E – norm premium) for persons with allowance partners

= (F – norm premium) for persons without allowance partners

The health care allowance is then calculated as (2418 – norm premium) in the case of persons with allowance partners, and (1209 – norm premium) in the case of persons without allowance partners.

**Table 2.20 Parameters used in calculation of health care allowance**

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
A	0.05	0.05	0.0503	0.05435	0.08713
B	19,135	19,528	19,890	20,079	19,043
C	926	976	997	1,110	894
D	516	527	540	588	418
E	2,418	2,524	2,750	2,852	2,956
F	1,209	1,262	1,375	1,426	1,478

## 2.4.8 Child related budget (*bch\_s*)

- *Definitions*

The child related budget was introduced in 2008 as child allowance (see CHALL\_nl), instead of the previously existing child tax credit. The main difference with the child tax credit is that the child related budget is also payable in the case of low or zero income.

- *Eligibility Conditions*

Presence of (at least one) child aged below 18.

- *Income test*

The child related budget is a means tested benefit of which the amount depends on total taxable income of the tax payer (including the income of their fiscal partner income where applicable).

- *Benefit Amount*

The allowance amounts to  $C - D * (\text{income} - B)$  where ‘income’ is the sum of taxable income in Box 1, 2 and 3 net of all deductions (tax allowances) of the tax payer and his/her fiscal partner (*temp\_TotalTaxableIncome*). The amount C is differentiated by the number of children for whom there exists entitlement to child benefit.

The child credit is only received by the fiscal partner with the highest taxable income – in the case where both fiscal partners have the same taxable income, it is received by the oldest – where the partner’s age is the same, the male will receive the tax credit.

Table 2.21 Income related child allowance parameters

	2009	2010	2011	2012	2013
Income threshold					
B	29,914	28,897	28,897	28,897	28,897
C	1,011	1,011	1,011	1,017	1,017
D	6.5%	7.6%	7.6%	7.6%	7.6%
C 2 kids	1,322	1,322	1,466	1,478	1,553
C 3 kids	1,505	1,505	1,826	1,661	1,736
C 4 kids	1,611	1,611	2,110	1,767	1,842
C 5+ kids, extra per child	51	51	189	106	106
Increase 12-15		231	231	231	231
Increase 16-17		296	296	296	296

## 2.5 Social contributions

Social contributions for unemployment and disability insurance are paid by employees and employers. However, from 2009 employees’ contributions were set to zero. In addition, all recipients of earnings and benefits pay peoples’ insurance contributions. Statutory health insurance contributions consist of flat rate private insurance contributions and income related

health insurance contributions. Self-employed do not pay separate social contributions since before 2006.

### 2.5.1 Employee social contributions

#### a) Employee contributions to unemployment insurance

Employees in the private sector aged below 65 are insured against (loss of income as a result of) unemployment. On average they pay a total contribution of x% on wages between y and z per month:  $0.01 * x * (\text{wage} > y) * \min(\text{wage} - y, z - y)$ . Similar rules apply for public sector employees who are not identified separately in EUROMOD.

The basis for the calculation of unemployment insurance contributions (*il\_sic*) includes next to gross wages net of (occupational) pension contributions and ‘spaarloon’, also wage replacement benefits such as unemployment and disability benefits. The relevant tax unit is the *individual*.

From 2009 the employees unemployment contribution was (not abolished, but) set to zero.

Table 2.22 Parameters employee contribution to unemployment insurance

	2009	2010	2011	2012	2013
x	0%	0%	0%	0%	0%
y					
z					

### 2.5.2 Employer social contributions

Employers pay social contributions divided into unemployment insurance contribution and disability insurance contribution<sup>9</sup>.

#### a) Employer contributions to unemployment insurance (*tscerui\_s*)

Employers of employees in the private sector aged below 65 on average pay a contribution of 1.4% on wages below €1,370.25, and a total contribution of 4.15% on wages between €1,370.25 and €3,983.51 per month:  $0.014 * \min(\text{wage}, 1,370.25) + 0.0415 * (\text{wage} > 1,370.25) * \min(\text{wage} - 1,370.25, 3,983.51 - 1,370.25)$  For public sector employees rules are the same.

The income basis for the employer contribution to unemployment insurance is the same as for the employee contribution to unemployment insurance (*il\_sic*).

Table 2.23 Parameters employer contribution to unemployment insurance

	2009	2010	2011	2012	2013
rate1	1.4%	1.85%	2.24%	2.75%	
rate2	4.15%	4.2%	4.2%	4.5%	4.85%
lower_lt	1,370.25	1,392.00	1,413.75	1435.83	0
maxbase	3,983.51	4,059.63	4,108.08	4172.08	4237.75

#### b) Employer contributions to disability insurance (*tscerdi\_s*)

<sup>9</sup> In addition, most employers pay occupational pension fund contributions, differing by sector or firm (not modelled in EUROMOD)

Employers of employees in the private sector aged below 65 pay, on average, a total contribution of 6.32% on wages with a wage limit of €3983.51 per month:  $0.0632 * \min(\text{wage}, 3,983.51)$ . For public sector employees rules are the same.

The income basis for the employer contribution to disability insurance is the same as for the employee contribution to unemployment insurance (*il\_sic*).

**Table 2.24 Parameters employer contribution to disability insurance**

	2009	2010	2011	2012	2013
rate2	6.32%	6.36%	5.72%	5.67%	5.17%
Maxbase2	3,983.51	4,059.63	4,108.08	4,172.08	4,237.75

**c) Employer contributions to health insurance**

**See section 2.5.4**

As mentioned in section 2.5.4, all residents are obliged to take out private health insurance. Strictly speaking there is no longer an employer contribution to health insurance but employers are obliged to compensate their employees for the income related health insurance contribution. As such, this compensation is subject to income tax and peoples insurance contributions.

**2.5.3 Self-employed social contributions**

a) Self-employed contributions to disability insurance

Not in force in 2009.

b) Self-employed contributions to health insurance

Similar to other residents, self-employed pay a flat rate health insurance premium as well as an income related contribution. See section 2.5.4.

**2.5.4 Other social contributions**

a) Peoples' insurances (*tsceepi\_s*)

The so-called peoples' insurances or national insurances include the State pension insurance (AOW), the Survivor benefit insurance (ANW) and the General act on special health care costs (AWBZ). All income tax payers contribute to these insurances where the taxable income (Box 1) (see section 2.6.4) acts as the basis for the calculation of these contributions (*tsceepi\_s*). In other words: all persons with income in Box 1 are subjected to these contributions. Therefore in EUROMOD we do not distinguish between employees and self-employed because the contributions are the same for both groups.

The contribution rates are reported for each year in Table 40 below. In 2009 they are 17.9%, 1.1% and 12.15 % respectively for AOW, ANW and AWBZ. Hence, the total contribution in 2009 amounts to 31.15%. Persons aged 65 or older do not pay AOW contributions and their contribution rate is 13.25%.

The maximum base for the calculation of these contributions is €2,127 per year. Note that tax credits apply to income tax and peoples' insurance contributions as a whole. They reduce the



income tax and peoples' insurance contributions proportional to the tax/contribution rates on the lowest income tax bracket<sup>10</sup>.

Table 2.25 Contribution rates and maximum base peoples' insurances

	2009	2010	2011	2012	2013
AOW	17.9%	17.9%	17.9%	17.9%	17.9%
ANW	1.1%	1.1%	1.1%	1.1%	0.6%
AWBZ	12.15%	12.15%	12.15%	12.15%	12.65%
pi_maxbase	32127	32738	33436 <sup>11</sup>	33863 <sup>12</sup>	33363 <sup>13</sup>

- **EUROMOD notes**

As tax credits apply both to income tax and people's insurance contribution, in EUROMOD the calculation of this contribution is divided into two parts. The first policy sheet is PEOPLESIC\_NL which calculates a "gross" amount of the contribution just applying the rates in the table above to the taxable income from Box 1 (*il\_taxable\_box1*).

After the calculation of tax credits in TINTC\_nl and social assistance by BSAnet\_nl, EUROMOD computes the final people's insurance liability (*tscepi\_s*) in BSAgross\_nl.

**b) Health insurance contributions (*tschl\_s*)**

All residents are obliged to take out private health insurance. Part of this is financed by flat rate health insurance premiums paid by the individual and part of this is financed by income related contributions. For wage earners, these income related contributions are compensated by the employer, and as such, included in the tax base (Box 1). In other words, in that case, they are subject to income tax and peoples insurance contributions. Moreover, none of the health insurance contributions are deductible from taxable income.

In 2009, the average flat rate health insurance premium (*tschlfx\_s*) amounted to €1,064 per adult (aged 18+) per year.

The earnings related contribution amounts to 6.9% of gross earnings and benefits (including the basic state pension AOW). On self-employment income and supplementary pensions the contribution rate is 4.8%. The maximum tax base is €32,369. Notably, employers and benefit agencies have to compensate this income related contribution. This compensation is taxable. In general, pension recipients are not compensated.

<sup>10</sup> In 2009, the lowest income tax rate was 2.35%. The peoples insurance contribution rate is (17.9 + 1.1 + 12.15 =) 31.15% (13.25% for 65+). So 2.35/(2.35+31.15) of the tax credit is to be subtracted from the income tax (2.35/(2.35+13.25) for 65+) and the remainder from the peoples insurance contributions. (Notably, in cases where this leads to zero income tax and insurance contributions in Box 1 all of the remaining amount of tax credit can be subtracted from income tax in Box 3).

<sup>11</sup> pi\_maxbase is 33485 for persons born before January 1, 1946

<sup>12</sup> pi\_maxbase is 34055 for persons born before January 1, 1946

<sup>13</sup> pi\_maxbase is 33555 for persons born before January 1, 1946

**Table 2.26 Parameters health insurance contribution**

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Average flat rate	1,064	1,107	1,211	1,222	1,273
Contribution rate:					
Earnings etc	6.9%	7.05%	7.75%	7.1%	7.75%
Self-employment etc	4.8%	4.95%	5.65%	5.0%	5.65%
maxbase	32,369	33,189	33,427	50,065	50,853

In the case of multiple sources of income, the contribution is calculated as follows: Firstly, as indicated above, the total maximum base is €32,369 per year. This maximum base consists of three possible components.

The first component (*tschl01\_s*) is wages, unemployment benefits, disability benefits and social assistance benefits and other earnings replacing benefits (except pensions). Here the contribution is 6.9%. This contribution *tschl01\_s* is compensated for by the employer or benefit agency, but this compensation is included in the tax base for income tax and peoples insurance contributions.

Because compensation for the health insurance contribution on earnings (including earnings replacing sickness benefits) is included in taxable income from work as used in the calculation of various tax credits (see section 2.6.6), EUROMOD also calculates *tschl00\_s* (the share of the first component *tschl01\_s* paid on earnings).

The second possible component (*tschl02\_s*) is the state pension, with a contribution rate of 6.9% (not compensated). Contribution: *tschl02\_s*.

The third possible component (*tschl03\_s*) consists of other pensions (*poacm*) as well as self-employment income (*yse*), with a contribution rate of 4.8% on *poacm* + max(0, *yse*). Contribution: *tschl03\_s*

So a person with €20,000 in wages and €30,000 in self-employment income would pay 6.9% of €20,000 (compensated by his employer) + 4.8% of €12,369.

From 2012, the maximum threshold for the computation of the health insurance contribution is harmonized with (i.e. raised to) the maximum threshold for the unemployment and disability insurance contributions.

From 2013, the earnings related health insurance contribution is paid for by the employer, and no longer included in taxable income of the employee. Pensioners and others who were not entitled to compensation by the employer (e.g. self-employed) still have to pay the earnings related health insurance contribution themselves.

## **2.6 Personal income tax**

### **2.6.1 Tax unit**

In general, the tax unit for income taxation is the individual. Income of other members in the household is taken into account in the calculation of the income tax credits (section 2.6.6). It is also important for the decision on who is paying taxes on components of household income such as imputed income from owner-occupied housing and for the decision on who can deduct expenditures such as mortgage interest, gifts etc. In the latter case, there is a difference between the treatment of married couples and other persons living together. In the case of married

couples all non-personal income components and deductions are attributed to the individual with the highest personal income. Unmarried persons living together each add/deduct their own share in these components. Registered partnerships are counted as married couples.

### 2.6.2 Exemptions

Following Verbist (2004), we define exemptions as “income components (that) are part of pre-tax income, but do not have to be declared to the tax authorities, and thus are not included in the concept of taxable income (e.g. child benefits in most countries)”.

Child benefits, rent allowance, care allowance and child care allowance are not included in taxable income, as are child maintenance payments made by the former spouse.

### 2.6.3 Tax allowances

Here, we define tax allowances as any amount subtracted from pre-tax income (including social insurance contributions). Differently from Verbist (2004) there is no distinction between those that are fixed amounts (tax allowances) and those whose level is a function of pre-tax income (deductions).

The most important tax allowance is formed by mortgage interest payments (*xhcmomi*), both in terms of the number of tax payers concerned and the amounts involved. Mortgage interest payments are deducted from personal income in Box 1 (see below).

From personal income (earnings, benefits, pensions) the amounts to be paid as occupational pension contributions, tax-exempt savings (‘spaarloon’), and employee contributions to unemployment insurance are also deducted. However, employer contributions to health insurance are taxable and should be added.

Alimony paid to the ex-spouse is also tax deductible.

Self-employed are entitled to self-employment deduction (*tinta00\_s*). Amounts and thresholds:

Table 2.27 Parameters self-employment deduction

	2009	2010	2011	2012	2013
lower_lt1	13,695	13,960	14,045		
lower_lt2	15,890	16,195	16,295		
lower_lt3	18,080	18,425	18,540		
lower_lt4	51,765	52,750	53,070		
lower_lt5	53,955	54,985	55,315		
lower_lt6	56,150	57,220	57,565		
lower_lt7	58,340	59,450	59,810		
amt_1	9,251	9,427	9,484	7,280	7,280
amt_2	8,600	8,764	8,817		
amt_3	7,953	8,105	8,154		
amt_4	7,087	7,222	7,266		
amt_5	6,470	6,593	6,633		
amt_6	5,785	5,895	5,931		
amt_7	5,106	5,204	5,236		
amt_8	4,488	4,574	4,602		
starters	2,070	2,110	2,123	2,123	2,123
65+	50%	50%	50%	50%	50%

The thresholds refer to self-employment income: *amt\_1* holds for self-employment incomes below *lower\_lt1*, *amt\_x* ( $x = 2...7$ ) for self-employment incomes between *lower\_ltx* and *lower\_ltx+1*, and *amt\_8* holds for self-employment incomes above *lower\_lt7*. Notably, the self-employed in question needs to have worked a minimum number of hours in his/her own firm: more than 1,225 hours per year and more than 50% of the total time worked<sup>14</sup>. Starters get an extra deduction during the first three years of self-employment. This starter deduction is not implemented in EUROMOD because of missing information on when employment spells start.

From 2012, the amount of self-employment deduction is no longer income dependent. Instead it is a fixed amount (but not higher than the self-employment income).

#### 2.6.4 Tax base

The tax base for the income taxation is divided in three components (boxes).

Box 1. Income from work and house (including benefits)

Box 2. Income from substantial interest (income received by shareholders owning more than 5% of the shares in a company) (ignored in EUROMOD)

Box 3. Income from saving and investment

##### Box 1.

Included in the income tax base are personal income components such as earnings from labour, (earnings replacing) benefits and pensions. If an employee drives a car provided by the

<sup>14</sup> This hours criterion was not implemented in the earliest versions of EUROMOD. In the current version we approximate it by the condition that self-employment income makes up more than 60% of income from work and the number of hours worked exceeds 23 hours per week.

employer, 20% of the catalogue value of the car is to be added (24% if the distance between home and work is more than 30 km). This component of taxable income is not modelled within EUROMOD, but read directly from the data (variable *kfb*).

Income from abroad is also included in the tax base, but usually to the extent that it had not been taxed abroad.

Alimony received from the ex-spouse (not: alimony paid for the maintenance of children) is taxable as well.

Next to these personal income components, the tax base also includes imputed income from owner occupied housing, and some categories of allowances from life insurances. Imputed income from owner occupied housing (per year) is calculated as a percentage (in most cases 0.6%) of the value of the house as determined by the Act on Immovable Objects (WOZ) with a maximum of €8,900 per year. To the extent that the imputed income from owner occupied housing exceeds the mortgage interest tax allowance, it is exempt from taxation. As a result, home owners with low or zero mortgage interest payments do not pay income tax on the imputed income from owner occupied housing. In Euromod, the imputed income from owner occupied housing is included in the data (*kivho*).

**2.6.5 Tax schedule**

Box 1

The income tax schedule, applied to taxable income minus all deductions in Box 1, is as follows:

**Table 2.28 Parameters income tax schedule**

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
tax_rate1	2.35%	2.3%	1.85%	1.95%	5.85%
tax_rate2	10.85%	10.8%	10.8%	10.8%	10.85%
tax_rate3	42%	42%	42%	42%	42%
tax_rate4	52%	52%	52%	52%	52%
band1 up to	17,878	18,218	18,628	18,945	19,645
band2 up to	32,127	32,738	33,436 <sup>15</sup>	33,863 <sup>16</sup>	33,363 <sup>17</sup>
band3 up to	54,776	54,367	55,695	56,491	55,991

Hence for 2009:

<b>Tax band</b>	<b>Per year</b>		<b>Per month</b>	<b>Tax-rate</b>	
1	0	17,878	1,489.83	<i>tax_band1</i>	<i>tax_rate1: 2.35%</i>
2	17,878	32,127	2,677.25	<i>tax_band2</i>	<i>tax_rate2: 10.85%</i>
3	32,127	54,776	4,564.66	<i>tax_band3</i>	<i>tax_rate3: 42%</i>
<i>nbands: 4</i>	54,776			<i>tax_band4</i>	<i>tax_rate4: 52%</i>

<sup>15</sup> For persons born before January 1, 1946, the threshold is 33,485.

<sup>16</sup> For persons born before January 1, 1946, the threshold is 34,055.

<sup>17</sup> For persons born before January 1, 1946, the threshold is 33,555.

**Box 2**

Income from substantial interest is taxed with a flat rate of 25%. In EUROMOD, information on this income component is not available.

**Box 3**

Income from capital is generally taxed in Box 3. For that purpose assets (*afc*) (savings, shares, value of 2<sup>nd</sup> accommodation etc) minus max (0, debts minus €2,900) are calculated on 1<sup>st</sup> January and 31<sup>st</sup> December and averaged. (Mortgages on owned (1<sup>st</sup>) accommodation are excluded from debts but mortgage interest is taken into account in Box 1). From this taxable asset base a tax free asset allowance is deducted. The remaining taxable amount (if positive) is assumed to have generated a taxable income of 4%, with a tax rate of 30% (or 1.2% of the taxable amount).

The general tax free asset allowance is €20,661 per person. For minor children (aged less than 18) an additional tax free asset allowance of €2,762 per child is awarded. From 2012, the asset allowance for minor children is abolished.

Couples may choose which part of their assets is reported by which spouse. They can also transfer the full amount of tax free asset allowance to their spouse. Only one of them is entitled to the asset allowance for minor children.

Persons older than 65 on 31<sup>st</sup> December are entitled to an additional asset allowance. The old age asset allowance is zero if the taxable asset base exceeds €273,391 or if taxable income in Box 1 exceeds €19,445. If income in Box 1 is between €13,978 and €19,445, the old age allowance equals €13,675. However, if the average taxable asset base (A) minus the general tax free asset allowance (B) and the asset allowance for minor children (C) is lower than €13,675 the old age allowance is equal to the amount (A-B-C), so that the resulting taxable asset base after deducting all tax allowances would be zero:  $(A-B-C)-(A-B-C)=0$  if  $A-B-C < €13,675$ . If income in Box 1 is below €13,978 the maximum old age allowance is €27,350.

The old age allowance may be transferred to the fiscal partner. No old age allowance is awarded if the taxable asset base of the individual plus his fiscal partner exceeds  $2 * €273,391$ .

**Table 2.29 Parameters old age allowance**

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Debts ignored	2,900	2,900	2,900	2,900	2,900
General t.f.a.	20,661	20,661	20,785	21,139	21,139
t.f.a. children	2,762	2,762	2,779	0	0
Old age allowance:					
Asset limit	273,391	273,391	275,032	279,708	279,708
Income limit	19,445	19,445	19,562	19,895	19,895
Lower limit	13,978	13,978	14,062	14,302	14,302
Allowance1	13,675	13,675	13,758	13,992	13,992
Allowance2	27,350	27,350	27,516	27,994	27,994

**2.6.6 Tax credits**

The amount resulting from adding all taxable income components and subtracting all deductions described in the first part of section 2.6.4 is taxable income in Box 1 (*il\_taxable\_box1*), upon which the tax schedule as described in section 2.6.5 is applied. In addition, (imputed) taxable income from saving and investing (Box 3) (*temp\_taxbase\_box3*) is taxed with a constant rate of

30%. However, tax credits are deducted from the full amount of taxes and peoples' insurance contributions (in proportion to the rates on the lowest tax bracket in Box 1).

The tax credits may consist of several components:

- a) general tax credit (*tintc00\_s*)

All tax payers receive a general tax credit of €2,007 per year or €167.25 per month (*amount1*). For persons aged 65 or more, the general tax credit is €935 per year (€77.92 per month). In principle, tax credits are not transferable between spouses. However, the general tax credit is also paid to a spouse with a low (or zero) income if his/her spouse pays income tax and peoples' insurance contributions. In that case the tax credit is not higher than the amount of income tax and peoples' insurance contributions paid by the spouse (after deducting his/her own tax credits): total tax/contributions paid by a couple is never negative.

Starting in 2009, the payment of the general tax credit to a spouse with a low or zero income will be reduced to zero in 15 years (i.e. by 6.67% per year). This reduction does not hold if the spouse in question was born before 1<sup>st</sup> January 1972 or has a child living at home who was younger than 6 years at 31<sup>st</sup> December 2008.

- b) work credit (*tintcee\_s*)

Tax credit on income from work (*il\_taxabley\_work*) (including self-employment income): normally, at most €1,504 per year (65+: €1059 per year).

The work credit amounts to 1.738% (*band\_rate 1*) on the first €8,859 (*band\_uplim 1*) of income from work plus 12.381% (*band\_rate 2*) of the remainder; the maximum amount being €1,504 (*uplim*). Income from work (*il\_taxabley\_work*) includes: employment income (*yem*), self-employment income (*yse*), the earnings related health insurance contribution paid on *yem*, income from employer provided car, minus the occupational pension contributions (*tpcpe*) and minus the unemployment insurance contribution paid by the employee (*tsceei\_s*). Sickness benefits (*bhl*) should also be counted as income from work.

Starting in 2003, the work credit for persons aged 57 and over was increased, in order to stimulate labour force participation in the age group concerned. The relevant amounts and percentages for 2009 are included in the following table.

**Table 2.30 Work credit 2009**

<b>Age</b>	<b>band_rate 2</b>	<b>uplim</b>
57, 58, 59	14.747%	1,726
60, 61	17.095%	2,018
62, 63, 64	19.442%	2,274

For persons aged 65 or over, the work credit is 0.8126% on the first €8,859 of income from work plus 9.054% of the remainder, with a maximum of €1059.

For persons with income from work higher than €42,509, the work credit is reduced by 1.25% of the income above €42,509 with a maximum of €24 (65+: 0.573%, with a maximum of €1).

Next to the age related work credit, as of 2009 persons born in 1947 or earlier with income from work above €8,859 are awarded a bonus on continued work. It amounts to x% of income above €8,859 with a maximum of y, with x and y dependent on the year of birth (min(x\*(income-8,859), y)).

Table 2.31 Bonus on continued work, 2009

Age	x	y
62	5%	2,296
63	7%	3,215
64	10%	4,592
65, 66	2%	919
67+	1%	460

As of 2012, the higher work credit for persons aged 57 or over was abolished. Instead of the bonus on continued work, a work bonus for persons aged 60-63 was introduced in 2013. It amounts to 57.763% of income from work above €17,139 with a maximum of €1,100 per year. For every euro earned above €2,852 10.5% is deducted from this maximum, so that persons with income from work above €3,326 do not receive the work bonus.

c) child credit (*tintch\_s*)

As of 2008, the child credit was replaced by an income related child allowance, renamed child related budget in 2009 (see section 2.4.8).

d) supplementary child credit

The supplementary child credit had already been abolished before 2006.

e) income related combination credit (*tintch00\_s*)

As of 2009, the earlier combination credit and supplementary combination credit were replaced by the income related combination credit. The income related combination credit amounts to €770 + 0.038\*(income – 4,619) with a maximum of €1,765. It is received if earnings from paid employment exceed €4,619 and a child under 12 is present. In the case of a couple it is received only by the lower earning spouse. If the earnings of both spouses are equal, only the older spouse receives the credit. For 65+, the amount is €360 + 0.0177\*(income – 4,619) with a maximum of €323 per year.

f) single parent credit (*tintclp\_s*)

A single tax payer who:

- was unmarried or lived separated for more than six months in 2009,
- lived in a household with only his own children (including step-children, foster-children) who were all younger than 27 on 31<sup>st</sup> December 2008,
- contributed to an important extent (at least €408 per three months) to the cost of living of at least one of these children and/or was entitled to child benefit,

is entitled to single parent tax credit which in 2009 amounts to €902 (*amount1*) per year for under 65 and €421 per year for over 65.

The assessment unit used in EUROMOD is *tu\_SingleParent\_nl* which includes lone parents with children younger than 27 on 31 Dec 2008. However, as the entitlement to this credit is linked to family benefit (*bfa*) receipt, in practice children here are maximum 18.

g) supplementary single parent credit (*tintclp00\_s*)

The tax payer who:



- was entitled to the single parent credit (*tintclp\_s*),
- one of the children was younger than 12 on 31/12/2008,
- had income from work outside the household,

is entitled to a supplementary single parent tax credit which amounts to:

4.3% of (taxable) income from work (*il\_taxabley\_worktc*) outside the household (including income from employer provided car). The supplementary single parent credit is not higher than €1,484 (*comp\_uplim*) per year (65+: 2.00% with a maximum €692). Income from work: see work credit.

h) old age credit (*temp\_tcOA*)

Tax payers aged 65 or over (*\$PenAge*) on 31/12/2009 are entitled to an additional tax credit: €661 per year if total taxable income ('verzamelinkomen') from Box 1, 2 and 3 net of all deductions is lower than €34,282 per year.

i) old age credit single persons (*temp\_SuppOA*)

Tax payers entitled to an old age credit and to the state pension for single persons or single parents (section 2.1.3) obtain the old age credit for single persons of €410 per year next to the old age credit.

j) temporary credit early retirement (from 2013: *temp\_ERTc*)

As of 2013, persons receiving a pension before the state pension age are entitled to a temporary credit of 1% of the pension with a maximum of €182 per year.

**Table 2.32 Parameters tax credits**

	2009	2010	2011	2012	2013
general tax credit	2,007	1,987	1,987	2,033	2,001
65+	935	925	910	934	1,034
work credit:					
band_rate 1	1.738%	1.737%	1.716%	1.733%	1.827%
band_uplim 1	8,859	9,041	9,209	9,296	8,816
band_rate 2	12.381%	11.888%	12.152%	12.32%	16.115%
uplim	1,504	1,489	1,574	1,611	1,723
band_rate 2 57	14.747%	14.235%	14.418%		
uplim 57	1,726	1,752	1,838		
band_rate 2 60	17.095%	16.555%	16.667%		
uplim 60	2,018	2,012	2,100		
band_rate 2 62	19.442%	18.884%	18.915%		
uplo, 62	2,274	2,273	2,362		
work bonus 60-63:					
maximum					1,100
minimum threshold					17,139
rate					57.736%
decrease starts from					22,852
rate of decrease					10.502%
reduction %	1.25%	1.25%	1.25%	1.25%	4%
max	24	56	77	78	1,173
from	42,509	43,385	44,126	45,178	40,248

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	2009	2010	2011	2012	2013
<b>Work credit 65+:</b>					
band_rate 1 65	0.8126%	0.807%	0.785%	0.796%	0.943%
band_rate 2 65	9.054%	8.779%	8.655%	5.658%	8.319%
uplim 65	1,059	1,058	1,081	740	890
reduction %	0.573%	0.581%	0.571%	0.574%	2.064%
max	11	26	35	36	606
from	42,509	43,385	44,126	45,178	40,248
Bonus on continuing	8,859	9,041	9,209	9,295	
Work: thresholds	54,775	55,831	56,280	57,166	
Rate 62	5%	5%	5%	1.5%	
Max 62	2,296	2,340	2,354	719	
Rate 63	7%	7%	7%	6%	
Max 63	3,215	3,276	3,295	2,873	
Rate 64	10%	10%	10%	8.5%	
Max 64	4,592	4,679	4,708	4,070	
Rate 65, 66	2%	2%	2%	2%	
Max 65, 66	919	936	942	958	
Rate 67+	1%	1%	1%	1%	
Max 67+	460	468	471	479	
<b>Income related</b>					
<b>Combination credit</b>					
Earnings threshold	4,619	4,706	4,734	4,814	4,814
Minimum	770	775	780	1,024	1,024
Rate	3.8%	3.8%	3.8%	4%	4%
Maximum	1,765	1,859	1,871	2,133	2,133
Max inc	30,800	33,233	33,444	32,539	32,539
Minimum 65+	360	361	358	470	529
Rate 65+	1.77%	1.77%	1.738%	1,838%	2.064%
Max 65+	823	865	857	980	1,102
<b>Single parent credit</b>					
Amount	902	945	931	947	947
Suppl. Rate	4.3%	4.3%	4.3%	4.3%	4.3%
Max	1,484	1,513	1,523	1,319	1,319
65+ amount	421	440	427	435	490
65+ suppl. Rate	2.00%	2.0%	1.97%	1.98%	2.28%
65+ max	692	705	698	606	682
Old age credit	661	684	739	762	1,032
threshold	34,282	34,649	34,857	35,450	35,450
<b>Higher income credit</b>					
Single persons	410	418	421	429	429
<b>Temporary credit early retirement: rate</b>					
Maximum					182

As mentioned earlier, tax credits are not transferable between spouses and the amount of income tax and peoples' insurance contributions paid cannot be negative. However, some tax credits are also paid to a spouse with a low (or zero) income if his/her spouse pays income tax and peoples'

insurance contributions. In that case the tax credit is not higher than the amount of income tax and peoples' insurance contributions paid by the spouse (after deducting his/her own tax credits): total tax/contributions paid by a couple is never negative. The tax credits for which this holds are: the general tax credit, work credit, child credit and (supplementary) combination credit.

- **EUROMOD notes**

In EUROMOD simulated values for income tax and peoples' insurance contributions may be negative at the individual level as long as the total amount for the couple is not negative.

### **Tax credits not taken into account in EUROMOD**

a) life course leave credit

As of 2006, the so-called 'life course arrangement' was introduced. This arrangement allows employees tax exempt saving to enable them to take unpaid leave at suitable periods during their life course. During these periods of leave, employees are entitled to life course leave credit of €195 per calendar year that they saved. The credit is not higher than the amount taken out. In future years, credits received earlier are deducted in the calculation of the maximum amount of credit available.

b) young disabled credit

Persons receiving the benefit for young disabled persons 'Wajong' are entitled to the young disabled credit of €678 per year

c) parental leave credit

Persons taking out parental leave can be entitled to parental leave credit. The credit amounts to €3.68 per hour of parental leave, the maximum being the difference between the earnings in 2005 and 2006.

d) credit for investment in venture capital, and green/ethical investment funds

Some categories of investments which are normally subject to the capital gains taxation (Box 3) are tax exempt up to certain limits.

- **EUROMOD notes**

As mentioned above, starting in 2009, the payment of the general tax credit to a spouse with a low or zero income is to be reduced to zero in 15 years (i.e. by 6.67% per year). This reduction does not hold if the spouse in question was born before 1<sup>st</sup> January 1972 or has a child living at home who was younger than 6 years at 31<sup>st</sup> December 2008. In previous EUROMOD versions this reduction was not implemented before 2011. In that year the reduction amounted to 20%. By 2012 the reduction was 26.66% for persons born after 1<sup>st</sup> January 1972 without a child younger than 6 years living at home, and 13.33% for persons born between 1<sup>st</sup> January 1963 and 1<sup>st</sup> January 1972 and for persons born after 1<sup>st</sup> January 1972 with a child younger than 6 years living at home. In 2013, these percentages were increased to 33.33% and 26.66%, respectively.

EUROMOD does not take into account a number of possible tax allowances, such as public transportation costs (home-work), gifts to charities, specific health care expenditures, and study costs.

### 3. DATA

#### 3.1 General description

The Dutch database consists of the Dutch part of the European Union Statistics on Income and Living Conditions (EU-SILC). This is a rotating panel survey (4 rotational groups), aimed to be representative of the Dutch population in private households. The panel is drawn from persons who participated in the Labour Force Survey (Enquête Beroepsbevolking EBB), supplemented by persons aged 65 or over. The unit of assessment is the household. The User Data Base on which the EUROMOD database is based, is provided by Eurostat (UDB\_c10\_ver 2010-1 from 01-03-12). The data consist of register data, supplemented by telephone interviews (CATI).

Table 3.1 EUROMOD database description

EUROMOD database	
Original name	EU-SILC UDB
Provider	Eurostat
Year of collection	2010
Period of collection	Feb-March
Income reference period	2009
Sample size	10134 hh
Response rate	80% <sup>1</sup>

Notes: <sup>1</sup>10134 out of 12704 used addresses

Statistics Netherlands (2013) reports that 10134 interviews were accepted from a total number of 12,704 valid addresses selected, which amounts to a response rate of 80%. Statistics Netherlands (2013) reports that cross-sectional weights were calculated in compliance with the Eurostat recommendations for these calculations. The final cross-sectional weights were obtained by a calibration of the joint cross-sectional and longitudinal sample. The following variables were included in the calibration scheme: sex, age, household size, region, tenure status, disposable income, main source of income, low income category, at risk of poverty rate.

As income data are based on register information most income variables do not suffer from item non-response. Only the inter-household transfers (paid and received) and the income from rental of a property or land are partly derived from the EU-SILC questionnaire. Notably, part of the labour market information is collected from the questionnaire and asked at the selected household member only. As a result, this information suffers from considerable item non-response.

#### 3.2 Data adjustment

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 (141 children) have been dropped from the sample. The final sample includes 24,498 individuals in 10,134 households.

Except for a very small number of adjustments to the household relationship variables, no further adjustments to variables have been made.

### 3.3 Imputations and assumptions

#### 3.3.1 Time period

The EU-SILC information on demographic variables mainly refers to the time of data collection (February-March 2010). However, some information also indicates the status quo at the end of the income reference period (2009). If possible, the demographic, labour and socio-economic information in the EUROMOD dataset was based on the EU-SILC variables referring to the income reference period.

The EU-SILC UDB information on incomes refers to the calendar year of 2009, based on a 12 month receipt period. All monetary incomes in the EUROMOD database are converted into monthly terms. In most of the EUROMOD calculations it is implicitly assumed that income is received at the same rate throughout the year.

#### 3.3.2 Gross incomes

Only gross incomes are available in the EU-SILC UDB database. Therefore, no net to gross imputations have been made.

#### 3.3.3 Disaggregation of harmonized variables

The following imputations of key variables (not available in the EU-SILC UDB survey) are produced:

- Financial capital is imputed, assuming that investment income reflects a rate of return of 4%.
- Pension income is disaggregated into state pension and complementary pension income, by approximating entitlement to the state pension.
- Social assistance is disaggregated into general social assistance, other taxable social assistance and other non-taxable social assistance. Other taxable social assistance is mainly targeted to disabled persons, other non-taxable social assistance to children aged 12-25.
- Unemployment benefits are disaggregated into contributory unemployment benefits and non-contributory unemployment benefits.
- Employee (occupational) pension contributions are imputed using approximate average contribution rates; employer pension contributions are not taken into account.

#### 3.3.4 Other imputations

As noted in section 3.1, part of the labour market information in the Dutch EU-SILC UDB data bases suffers from considerable item non-response. One key variable used in the simulation of unemployment benefits is the labour market history: the number of years in paid employment (*liwwh*). In cases where this variable is missing, an imputation procedure is used, in which the number of years in paid employment is based on a regression with age, gender and household composition as explanatory variables.

### 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. Up-rating 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 up-rating factor as well as the sources that have been used, see Annex 1.

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

## **4. VALIDATION**

### **4.1 Aggregate Validation**

EUROMOD results are validated against external benchmarks. Detailed comparisons of the number of people receiving a given income component and total yearly amounts are shown in Annex 2. Both market incomes and non-simulated taxes and benefits in the input dataset as well as simulated taxes and benefits are validated against external official data. The main discrepancies between EUROMOD results and external benchmarks are discussed in the following subsections. Factors that may explain the observed differences are also discussed.

#### **4.1.1 Components of disposable income**

Table 4.1 compares the definition of disposable income in EUROMOD with the definition of the disposable income variable HY020 in EU-SILC. The EUROMOD definition does not include non-cash components such as the company car, and it does not include tax adjustments pertaining to tax years other than the reference year.

Table 4.1 Components of disposable income

	EUROMOD 2009-2013	EU-SILC 2010
	ils_dispy	HY020
Employee cash or near cash income	+	+
Employer's social insurance contribution		0
Company car		+
Contributions to individual private pension plans		0
Cash benefits or losses from self-employment	+	+
Pension from individual private plans		0
Unemployment benefits	+	+
Old-age benefits	+	+
Survivor' benefits	+	+
Sickness benefits	+	+
Disability benefits	+	+
Education-related allowances	+	+
Income from rental of a property or land	+	+
Family/children related allowances	+	+
Social exclusion not elsewhere classified	+	+
Housing allowances	+	+
Regular inter-household cash transfer received	+	+
Interests, dividends, etc.	+	+
Income received by people aged under 16	+	+
Regular taxes on wealth		-
Regular inter-household cash transfer paid	-	-
Tax on income and social contributions	-	-
Repayments/receipts for tax adjustment		+

Notes: Some variables in EUROMOD are aggregate variables. They consist of several components, some of which have been simulated in EUROMOD and some not.

#### 4.1.2 Validation of incomes inputted into the simulation

##### a) Number of employed and unemployed

Table 4.2 compares the numbers of employed and unemployed as derived from EU-SILC and used in EUROMOD with external statistics. It should be noted that the comparability of these statistics is questionable as the EU-SILC statistics are based on the number of months in which the main activity consisted of full-time or part-time employment or self-employment (in the case of the employed) and unemployment (in the case of the unemployed). This is likely to cause ambiguity in the case of e.g. students with part-time jobs and partly disabled workers and unemployed. The external statistics count as employed persons who work 12 hours per week or more, and as unemployed persons who currently do not work or work less than 12 hours per week, but who would want to work 12 hours per week or more. In doing so, the number of unemployed exceeds the number of persons registered as unemployed<sup>18</sup>, and those entitled to an unemployment benefit.

All in all, the number of employed persons in EU-SILC approximates the external statistics fairly closely, whilst the number of unemployed appears to be underestimated in 2009. Obviously, this may be caused by the different definitions of unemployment. A cause for concern is the fact that unemployment in the Netherlands has increased considerably between 2009 and 2012, whilst it remains constant in the updated data used in the EUROMOD

<sup>18</sup> Only persons who would be entitled to benefits such as unemployment benefit or social assistance need to register themselves as unemployed.

simulations. This is explained by the fact that EUROMOD simulations are based on EU-SILC 2010 data. EUROMOD is a static microsimulation model which by nature does not impose changes in demographics and labour market conditions, but takes them from the underline input dataset. Consequently the simulations presented here do not pick up changes in unemployment rate between 2009 and 2012, but they reflect the scenario where no changes apply to people's demographic and employment status. Thus comparisons across years identify changes in policies rather than total changes including changes in the population or changes in the labour market.

### b) Number of recipients of various types of market income

Recent external statistics on the number of recipients of various types of market income are difficult to obtain. Statistics Netherlands does provide numbers of employed persons and numbers of jobs at various points in time, but not numbers of recipients of employment income in one calendar year. Assuming that the number of jobs per recipient of employment income has remained constant since 2005 we obtain the figures as presented in the first row of table 4.3, and these figures coincide nicely with the EU-SILC statistics for 2009. The number of households receiving self-employment income appears to be clearly overestimated in EU-SILC. This may suggest that the definition of self-employment income used by EU-SILC is somehow broader than the definition used by Statistics Netherlands. The number of recipient households of investment income in EUROMOD is about 5% higher than the figure derived from Statistics Netherlands.

### c) Amounts of various types of market income

Average employment income and total employment income as derived from EU-SILC exceed external statistics by a couple of percentage points, as may be inferred from Table 4.4 in Annex 2. Notably, the real difference between both sources is probably higher as the EUROMOD definition of employment income does not include the employer compensation for the employee health insurance contribution. Self-employment income in EUROMOD also exceeds external statistics considerably, consistent with the above finding that the definitions in both sources may be different. Moreover, because self-employment income in EUROMOD is uprated with the consumer price index, the variability of self-employment income in the external statistics is not replicated in EUROMOD. Investment income in EUROMOD underestimates the actual amounts by about 17% in 2009 and 2010, and by about half of that percentage in 2011 and 2012. Although no exact equality could be expected since both statistics derive from subsamples of the total population, we have no clear indication about the cause of these differences.

### d) Number of recipients of various types of non-simulated benefits

As can be inferred from Table 4.5, the number of recipients of 'other social assistance benefits' is underestimated by about 3% in 2009. As an imputation procedure had to be implemented to separate out these benefits from regular social assistance, this seems acceptable. It appears, however, that the number of recipients of these benefits has increased by almost 20% from 2009 to 2013, a phenomenon which is not captured in EUROMOD. Similarly, the number of recipient households of occupational pensions is replicated quite nicely in EUROMOD 2009, but the increase of this statistic in the years since then is again beyond the scope of EUROMOD. Likewise, the number of recipients of disability benefits is underestimated in EUROMOD 2009, but since this number has been decreasing since then, it has moved quite close to the (constant) EUROMOD figure in 2012.

### e) Amounts of various types of non-simulated benefits

The aggregate amount of 'other social assistance benefits' is underestimated by about 17% during the period 2009-2011, as can be seen from Table 4.6 in Annex 2. The imputation procedure used to separate out these benefits from regular social assistance benefits results in a



fairly arbitrary division between regular and other social assistance benefits. From Table 4.8 (to be discussed in the next section) we can infer that the resulting regular social assistance benefits as derived from EU-SILC are also underestimated. Because the other social assistance benefits are uprated with the CPI, the degree of underestimation of other social benefits is lower in 2012, when the external statistics show a notable drop in the total amount of these benefits. The total amount of occupational pensions is overestimated by 6% in 2009, but because the external statistics increase slightly faster than the uprating factor used (the CPI), the degree of overestimation decreases between 2009 and 2011. Disability benefits show a reverse trend: here the external statistics show a decrease not captured by the uprating factor but mainly caused by the decrease in the number of recipients. As a result, the degree of underestimation of the EUROMOD figure decreases between 2009 and 2012.

### 4.1.3 Validation of outputted (simulated) incomes

#### a) Number of recipients

Table 4.7 shows that the number of recipients of family benefits is underestimated by about 3%. Because the total number of children aged younger than 18 in EU-SILC is much closer to the external statistics, and the number of households with children aged younger than 18 who are not entitled to family benefits is simulated to be less than 1%, the main explanation of this difference appears to be a difference in the household size distribution between EU-SILC and the external statistics: EU-SILC counts a somewhat larger number of large households as well as single person households, and as a result, a slightly lower number of households entitled to family benefits. The number of recipients of the (means tested) child allowance is also underestimated by EUROMOD, but here the degree of underestimation appears to be considerably larger. One possible reason for this underestimation is that the external statistics include recipients whose payments of child allowances were revoked after the final assessment of their taxable income.

In 2009, EUROMOD overestimates the number of recipients of care allowance by 6%, and in 2012 the degree of overestimation has risen to 10%. A likely explanation is that EUROMOD lacks sufficient information to identify exactly those recipients who fulfil one of the conditions to be allowance partners, and as a result, overestimates the number of individual recipients of care allowance. To some extent the overestimation may also be caused by non-take-up, e.g., in cases where the amount to be received is small. Non-take-up may also play a role in the slight overestimation of the number of recipients of housing benefit (rent allowance), although here the overestimation of 2009 can be seen to turn into underestimation by 2012. The latter phenomenon may reflect the fact that the procedure used to uprate the data pertaining to 2009 to later years does not take into account structural changes, and hence does not adequately capture the consequences of the credit crisis, as can also be witnessed from the numbers of recipients of social assistance and unemployment benefits<sup>19</sup> in comparison to the external statistics. Similarly, the number of recipients of the state pension remains constant in EUROMOD, although the population numbers of persons aged 65 or over show a gradual increase. With respect to the survivor benefits, the number of recipients in EUROMOD remains well below the external statistics. The likely explanation here is that EUROMOD does not model entitlement to a more generous survivor benefit of persons who were widowed before the latest reforms in the laws in question. A final notable figure in table 4.7 is that the number of recipients of housing benefits according to the original EU-SILC data is much higher than both the simulated figures and the external statistics. The underlying cause of this difference is unclear, especially since the difference in the amounts (to be discussed below) is negligible.

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<sup>19</sup> In contrast to earlier Country Reports, the external statistics now reflect the total number of recipients of unemployment benefits in a calendar year, rather than the (much lower) number of recipients at a certain point in time.

### b) Amounts

From Table 4.8 in Annex 2 we infer that the total amount of family benefits and child allowances simulated by EUROMOD coincides quite closely with the amount derived from the original EU-SILC data. However, whilst the simulated amount of family benefits hardly deviates from external statistics, the child allowance as simulated in EUROMOD appears to be underestimated by almost 30% in most years. At least partly, this difference can be explained by the fact that the external statistics include a non-negligible amount that will be paid back to the tax authorities once the final assessment of taxable income has been completed.

In contrast to the number of recipients, the total amount of care allowance appears to be underestimated in EUROMOD. This confirms the suspicion that the number of recipients per household may be overestimated due to insufficient information to identify allowance partners. Some degree of underestimation is also, again, to be expected because the external statistics include payments which after the final assessment may have to be returned. The latter phenomenon is also likely to play a role with the rent allowance of which the amount is underestimated in EUROMOD by only 1% in 2009 and almost 10% in 2012.

The overestimation of the number of recipients of social assistance benefits is accompanied by an underestimation of the amounts of about 10% in 2009, 2010 and 2011, and of almost 25% in 2012. This suggests that benefit units entitled to the full social assistance benefit, i.e., with no other sources of income, are underrepresented in the data, and, again, the developments after 2009 are not captured by the uprating factors applied. This point is also illustrated by comparing the simulated amounts of unemployment benefits with the external statistics: unemployment does not change in EUROMOD, and as a result, the simulated amounts of unemployment benefits cannot be expected to reflect the trends in the external statistics.

In 2009, the amount of state pensions is overestimated by EUROMOD by about 5%. Apart from the slight overestimation of the number of recipients, this may also be caused by the fact that EUROMOD cannot take into account that recipients may not be entitled to the full state pension, as a result of having lived abroad during their working life. Conversely, the extent to which the amount of survival benefits is underestimated approximates the extent to which the number of recipients is underestimated.

Income tax receipts are slightly overestimated in 2009 but overestimated by more than 10% in 2012, whilst peoples' insurance contributions are overestimated by 14% in 2009 and just 4% in 2012. It should be noted that the external statistics on income tax receipts reflect actual amounts paid in the calendar years, whilst, up to 2011, the peoples' insurance contributions were calculated net of payments made for earlier years<sup>20</sup>. Employer social insurance contributions are overestimated by about 17% throughout the whole period, whilst health insurance contributions are underestimated by 9% in 2009 and 2010, but not in 2011 and 2012. Part of the overestimation of the social insurance contribution is caused by the fact that the actual unemployment insurance contribution for public sector employees is notably lower than the private sector rate that is used for all employees in EUROMOD. The underestimation of health insurance contributions in 2009 and 2010 appears to be caused by the fact that the external statistics include components (government contributions for children aged below 18, compulsory co-payments) which are not included in EUROMOD. In addition, the external statistics appear to reflect the health care expenditures financed through the health insurance rather than the health insurance contributions. This may also partly explain the differences between 2009 and 2010 on the one hand and 2011 and 2012 on the other.

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<sup>20</sup> In 2013, the tax service discontinued the publication containing this statistic (*Beheerverslag – management report*).

### 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 in Annex 2 presents a number of indicators of the income distribution and compares them to Eurostat figures on the basis of EU-SILC data on disposable income of the calendar year in question. Given that the data sources are the same, it is encouraging that the distributions of measured and simulated income in 2009 do not differ very much. As far as the income shares are concerned, the biggest difference is found in share of the lowest decile, which overestimated by 9% by EUROMOD. It is likely that this is mainly caused by the fact that EUROMOD assumes 100% take-up of benefits such as social assistance on the one hand, and 100% entitlement to (and take-up of) the state pension on the other. EUROMOD overestimated both median and mean income by about 3%, whilst the Gini and S80/S20 indicators are underestimated by 2% and 5%, respectively. It can also be seen that for 2010 the differences between EUROMOD and Eurostat are slightly larger, owing to the fact that the EUROMOD 2010 distribution hardly differs from the 2009 distribution, whilst the Eurostat 2010 distribution shows slightly larger differences with its 2009 counterpart. In 2011 the income share of the lowest decile according to Eurostat is back to the 2009 figure, and the same holds for the degree of overestimation by EUROMOD.

#### 4.2.2 Poverty rates

Comparing the poverty rates resulting from EUROMOD with the Eurostat figures (Table 4.10 in Annex 2) we find that in 2009, EUROMOD underestimates extreme poverty (drawing the poverty line at 40% of median equivalized income) but it slightly overestimates poverty using the 60% of the median threshold. Differentiated by age group we see that this overestimation is concentrated in the 16-24 and 25-49 age groups. By contrast, Eurostat underestimates poverty among the elderly. Over the years, EUROMOD does not in all cases show the same trends as the Eurostat figures. The poverty statistics using the 50 and 60% thresholds show a decrease between 2009 and 2010 according to EUROMOD but an increase according to Eurostat. The diverging trends using the 60% threshold can also be noted in most age groups. However, in the 50-64 age group, Eurostat finds a decrease in the poverty rate between 2009 and 2010 that is even faster than the decrease in EUROMOD. Between 2010 and 2011 most EUROMOD poverty rates again show a slight increase, whilst the Eurostat figures now show a clear decrease. As noted earlier, uprating the 2009 figures does not capture all the structural changes with a distributional impact.

### 4.3 Validation of minimum wage

In the Netherlands employees have been entitled to a minimum wage for several decades. However, the wage information as included in EU-SILC suggests that in some cases the wage received is below the minimum wage. Therefore, EUROMOD has an option to award the minimum wage to persons whose (hourly) earnings are below the minimum. Table 4.11 in Annex 2 compares a number of results of the baseline discussed so far with results including this minimum wage option. It can be seen that total disposable income, employment earnings,

income tax and peoples' insurance contribution, as well as inequality as represented by the Gini coefficient, differ less than 2% from the baseline. However, the total amount of General Social Assistance is about 3% higher when the minimum wage option is not switched on, and in some years, poverty is also about 3% higher.

Notably, there are several reasons why the results of this exercise should not be taken too seriously. First and foremost, the wage information in the Dutch EU-SILC is based on register data whilst hours information is based on survey data. Therefore, it is unlikely that the amounts resulting from correcting wage information on the basis of hours information are in any sense more correct than the original amounts. Moreover, the EUROMOD minimum wage option assumes that all working hours of wage recipients are spent in paid employment while some of them also spend time earning self-employment income. In those cases, EUROMOD uses an incorrect number of hours to calculate the original hourly wage. Finally, hourly wages are uprated to the NMW assuming that a full-time working week consists of 38 hours. However, in some cases the actual full-time working week might be higher so that in fact the original wage already exceeded the minimum wage.

#### 4.4 Summary of “health warnings”

- Care should be taken in interpreting results for small sub-groups.
- No adjustments are made for structural changes in the characteristics of the population between the data year (2009) and the simulation years.
- Non-takeup of benefits is not modelled. This has the effect of (a) inflating the simulated incomes of households who do not take up these benefits in reality and, possibly, reducing the number of people in very poor households, (b) inflating the cost of benefits and the cost of making them more generous, (c) diminishing the relative impact of benefits that do not have problems of non-takeup. In particular, means-tested benefits such as housing benefits and social assistance are likely to be affected by non-takeup, for example when the entitlements would be small.
- The quality of the rent variable used to simulate entitlement to housing benefit is subject to doubt.
- In a number of cases, benefit disaggregation is only possible using fairly arbitrary choices, in particular where social assistance is concerned
- Child care allowance is not modelled.
- A number of potential income tax deductions is not taken into account. Potential deductions include specific health care costs, study costs and gifts to charities.
- The consequences of the introduction of a separate Social Assistance arrangement for persons younger than 27 years old (WIJ: *Wet Investeren in Jongeren*) in October 2009 could not be modelled very accurately because the outcome depends on individual circumstances, choices and decisions beyond the scope of EUROMOD. The same holds for the subsequent integration of the WIJ in regular social assistance (WWB) as of 2012.
- Uprating factors for 2013 are still provisional.

## 5. REFERENCES

Verbist, G. (2004) “Redistributive effect and progressivity of taxes An International Comparison across the EU using EUROMOD”, EUROMOD Working Paper No. EM5/04.

Statistics Netherlands (2013), “Final Quality Report EU-SILC 2010 The Netherlands”, Division of Social and Spatial Statistics, Heerlen, available at [http://epp.eurostat.ec.europa.eu/portal/page/portal/income\\_social\\_inclusion\\_living\\_conditions/quality/national\\_quality\\_reports](http://epp.eurostat.ec.europa.eu/portal/page/portal/income_social_inclusion_living_conditions/quality/national_quality_reports)

- *Sources for tax-benefit descriptions/rules*

General sources for tax-benefit descriptions/rules

In Dutch: Kluwer Fiscale encyclopedie De Vakstudie; Kluwer Encyclopedie Sociale Verzekeringen; Kluwer Encyclopedie Sociale Voorzieningen; [www.belastingdienst.nl](http://www.belastingdienst.nl); [www.st-ab.nl](http://www.st-ab.nl); [www.svb.nl](http://www.svb.nl); [www.uwv.nl](http://www.uwv.nl);

In English: [www.svb.nl](http://www.svb.nl)

ANNEX 1.

Table 1. Uprating factors

Index	Income Source/index type	2009-2010	2009-2011	2009-2012	2009-2013
<i>default</i>	Annual average inflation	1.010	1.034	1.064*	1.0971*
<i>yem</i>	INCOME : Employment	1.013	1.030	1.044*	1.0582*
<i>yfb</i>	INCOME : Fringe Benefits				
<i>yyi</i>	INCOME : Investment				
<i>ypr</i>	INCOME : Property				
<i>ypt</i>	INCOME : Private Transfers	1.024	1.032	1.045	1.063
<i>yse</i>	INCOME : Self Employment				
<i>bed</i>	BENEFIT/PENSION : Education	1.025	1.025	1.025	1.036
<i>bfa</i>	BENEFIT/PENSION : Family	1.015	1.000	.967	.982
<i>bho</i>	BENEFIT/PENSION : Housing	-	-	-	
<i>bsa</i>	BENEFIT/PENSION : Social Assistance				
<i>bun</i>	BENEFIT/PENSION : Unemployment	1.019	1.031	1.047	1.064
<i>pdi</i>	BENEFIT/PENSION : Disability	1.019	1.031	1.047	1.064
<i>phl</i>	BENEFIT/PENSION : Health	see yem			
<i>poa00</i>	BENEFIT/PENSION : State pension	1.013	1.028	1.042	1.054
<i>psu</i>	BENEFIT/PENSION : Survivors	1.017	1.026	1.041	1.056
<i>tpcpe</i>	TAX/CONTR : Occ. pension contr. employees	see yem			

Notes: source: inflation, yem: Eurostat; yfb, yse: statline.cbs.nl; ypt: [www.alimentatiewijzer.nl](http://www.alimentatiewijzer.nl), bed, bun, pdi: [www.overheid.nl](http://www.overheid.nl), bfa, poa00, psu: [www.svb.nl](http://www.svb.nl);

\*:provisional figures based on statline.cbs.nl (Statistics Netherlands)

**ANNEX 2. VALIDATION TABLES.**

Table 4.2 Number of employed and unemployed

	EUROMOD	External	Ratio							
	2009	2009	2010	2011	2012	2013	2009	2010	2011	2012
Number of employed	7342816	7469000	7391000	7392000	7387000	N/A	0.98	0.99	0.99	0.99
Number of unemployed	572217	763000	825000	817000	928000	N/A	0.75	0.69	0.70	0.62

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

	EUROMOD	External	Ratio							
	2009	2009	2010	2011	2012	2013	2009	2010	2011	2012
Employment income	8262	8288	8243	8288	8227	N/A	1.00	1.00	1.00	1.00
Self-employment income	1339									
<i>households</i>	1180	776	802	825	N/A	N/A	1.52	1.47	1.43	N/A
Investment income	10153									
<i>households</i>	6223	5955	5963	5974	N/A	N/A	1.05	1.04	1.04	N/A

Table 4.4 Market income in EUROMOD -Annual amounts (in millions)

	EUROMOD					External				Ratio			
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2009	2010	2011	2012
Average employment income	28760	29134	29623	30025	30434	28182	28455	28825	29053	1.02	1.02	1.03	1.03
Employment income	237627	240716	244756	248083	251457	233570	234552	238903	239022	1.02	1.03	1.02	1.04
Self-employment income	27310	27583	28238	29044	29962	25289	25909	23748	N/A	1.08	1.06	1.19	N/A
Investment income	10946	11055	11318	11641	12009	13521	12178	12631	N/A	0.81	0.91	0.90	N/A

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

	EUROMOD	External				Ratio			
	2009	2009	2010	2011	2012	2009	2010	2011	2012
<b>Benefits</b>									
Education benefits	880	695	746	761	773	1.27	1.18	1.16	1.14
Other social assistance	291	300	321	332	346	0.97	0.91	0.88	0.84
Occupational pensions	2773								
<i>households</i>	2421	2375	2780	2664	N/A	1.02	0.87	0.91	N/A
Disability benefits	589	636	627	608	590	0.93	0.94	0.97	1.00



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

	EUROMOD				External				Ratio				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2009	2010	2011	2012
<b>Benefits</b>													
Education benefits	2792	2862	2862	2862	2893	2057	2354	2502	2152	1.36	1.22	1.14	1.33
Other social assistance	2363	2387	2443	2513	2592	2865	2885	2985	2763	0.82	0.83	0.82	0.91
Occupational pensions	37197	37569	38461	39559	40809	35050	36608	37852	N/A	1.06	1.03	1.02	N/A
Disability benefits	8141	8296	8393	8524	8662	9107	8984	8811	8753	0.89	0.92	0.95	0.97

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

	EUROMOD					SILC	Ratio		External		Ratio					
	2009	2010	2011	2012	2013		2009	2009	2009	2010	2011	2012	2009	2010	2011	2012
<b>Benefits</b>																
Family benefits	1882	1882	1882	1882	1882	1976	0.95	1933	1928	1933	1912	0.97	0.98	0.97	0.98	
Child allowance	849	775	794	758	856	0	N/A	981	945	892	900	0.87	0.82	0.89	0.84	
Health allowance	5343	5487	5759	5472	4684	0	N/A	5041	5219	5269	5004	1.06	1.05	1.09	1.09	
Rent allowance	1134	1134	1111	1097	1089	1650	0.69	1098	1124	1106	1162	1.03	1.01	1.00	0.94	
General social assistance	423	448	420	408	410											
<i>households</i>	377	402	373	367	368	282	1.34	317	345	356	361	1.19	1.17	1.05	1.01	
Unemployment benefit	579	579	579	579	579	584	0.99	598	684	678	772	0.97	0.85	0.85	0.75	
State pension	2414	2414	2414	2414	2414	2402	1.01	2348	2414	2468	2591	1.03	1.00	0.98	0.93	
Survival benefit	75	73	61	55	39	76	0.99	107	98	87	75	0.70	0.74	0.70	0.73	
<b>Taxes and Social Insurance contributions</b>																
Income tax	11788	11787	11643	11592	11778	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Social insurance contributions:																
peoples' insurances	11755	11751	11591	11535	11754	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Employer social insurance contributions	8125	8125	8125	8125	8125	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Health insurance contributions	13142	13142	13142	13142	13142	0	N/A	12762	12863	12947	13037	1.03	1.02	1.02	1.01	

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

	EUROMOD					SILC					Ratio					External					Ratio			
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2009	2010	2011	2012	
<b>Benefits</b>																								
Family benefits <sup>21</sup>	3369	3344	3325	3196	3249	4197	4197	4197	4059	4122	0.98	0.98	1.00	0.99	1.01	3401	3371	3346	3236	0.99	0.99	0.99	0.99	
Child allowance	746	778	867	807	925											1044	1120	1193	1140	0.71	0.69	0.73	0.71	
Health allowance	3515	3768	4481	4246	4460	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	4069	4585	5333	4608	0.86	0.82	0.84	0.92	
Rent allowance	2418	2447	2447	2475	2516	2439	2463	2522	2597	2676	0.99	0.99	0.97	0.95	0.94	2470	2679	2744	2767	0.98	0.91	0.89	0.90	
General social assistance	3360	3423	3457	3516	3571	3242	3275	3352	3453	3557	1.04	1.05	1.03	1.02	1.00	3863	4056	4043	4855	0.87	0.84	0.86	0.72	
Unemployment benefit	4240	4321	4372	4440	4511	4465	4550	4604	4675	4751	0.95	0.95	0.95	0.95	0.95	4246	5024	4557	5557	1.00	0.86	0.96	0.80	
State pension	26881	27238	27657	28016	28244	25994	26332	26722	27086	27398	1.03	1.03	1.03	1.03	1.03	25593	26479	27804	29120	1.05	1.03	0.99	0.96	
Survival benefit	858	831	723	659	458	784	797	804	816	828	1.09	1.04	0.90	0.81	0.55	1224	1137	1040	901	0.70	0.73	0.70	0.73	
<b>Taxes and Social Insurance contributions</b>																								
Income tax	49474	49989	50682	52333	53066	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	49002	49942	48565	46070	1.01	1.00	1.04	1.14	
Social insurance contributions: peoples' insurances	39456	40864	41438	42007	44188	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	34633	36451	35456	40333	1.14	1.12	1.17	1.04	
Employer social insurance contributions	18879	19792	19157	20213	21052	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	16086	16640	16397	17619	1.17	1.19	1.17	1.15	
Health insurance contributions	30974	32253	35706	37115	39620	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	34143	35553	36030	36545	0.91	0.91	0.99	1.02	

<sup>21</sup> SILC amounts and ratio include both family benefits and child allowance

Table 4.9-Distribution of equivalised disposable income

	EUROMOD					External				Ratio			
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2009	2010	2011	2012
D1	4.1	4.1	4.1	4.1	4.1	3.8	3.5	3.8	N/A	1.09	1.19	1.09	N/A
D2	5.8	5.9	5.9	5.9	5.8	5.9	5.9	5.9	N/A	0.99	0.99	0.99	N/A
D3	6.8	6.8	6.8	6.8	6.8	6.8	6.9	6.9	N/A	1.00	0.99	0.99	N/A
D4	7.6	7.6	7.6	7.6	7.6	7.7	7.7	7.7	N/A	0.99	0.99	0.99	N/A
D5	8.6	8.5	8.5	8.5	8.5	8.5	8.5	8.5	N/A	1.01	1.00	1.00	N/A
D6	9.4	9.4	9.4	9.4	9.4	9.5	9.5	9.5	N/A	0.99	0.99	0.99	N/A
D7	10.5	10.5	10.5	10.5	10.6	10.5	10.6	10.5	N/A	1.00	0.99	1.00	N/A
D8	12.0	12.0	11.9	12.0	12.0	11.9	12.0	11.9	N/A	1.01	1.00	1.00	N/A
D9	14.1	14.1	14.1	14.0	14.2	14.1	14.0	13.9	N/A	1.00	1.01	1.01	N/A
D10	21.0	21.0	21.0	21.0	21.0	21.3	21.3	21.3	N/A	0.98	0.98	0.99	N/A
Median	20888	21043	21368	21656	21874	20292	20310	20562	N/A	1.03	1.04	1.04	N/A
Mean	23283	23475	23829	24106	24392	22692	22556	22952	N/A	1.03	1.04	1.04	N/A
Gini	25.0	25.0	25.0	25.0	25.2	25.5	25.8	25.4	N/A	0.98	0.97	0.98	N/A
S80/S20	3.5	3.5	3.5	3.5	3.5	3.7	3.8	3.6	N/A	0.95	0.92	0.97	N/A

Table 4.10 Poverty rates by gender and age

	EUROMOD					External				Ratio			
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2009	2010	2011	2012
<b>40% median HDI</b>													
Total	2.2	2.1	2.2	2.3	2.2	2.8	2.6	2.4	N/A	0.80	0.83	0.93	N/A
Males	2.1	2.0	2.1	2.1	2.1	2.5	2.5	2.1	N/A	0.84	0.79	0.98	N/A
Females	2.4	2.3	2.4	2.4	2.3	3.0	2.7	2.8	N/A	0.79	0.86	0.85	N/A
<b>50% median HDI</b>													
Total	4.8	4.5	4.7	4.9	5.1	4.9	5.2	5.2	N/A	0.99	0.87	0.91	N/A
Males	4.4	4.2	4.3	4.6	4.6	4.5	4.9	5.0	N/A	0.98	0.85	0.86	N/A
Females	5.3	4.9	5.2	5.3	5.5	5.2	5.5	5.4	N/A	1.01	0.89	0.95	N/A
<b>60% median HDI</b>													
Total	10.8	10.7	10.7	10.9	11.2	10.3	11.0	10.1	N/A	1.05	0.98	1.06	N/A
Males	10.4	10.3	10.2	10.4	10.8	9.7	10.8	9.5	N/A	1.07	0.96	1.08	N/A
Females	11.2	11.2	11.2	11.3	11.6	10.8	11.1	10.6	N/A	1.04	1.01	1.05	N/A
<b>70% median HDI</b>													
Total	19.2	19.0	19.0	19.2	19.4	18.8	18.2	17.9	N/A	1.02	1.05	1.06	N/A
Males	18.4	18.3	18.2	18.3	18.5	18.1	17.7	17.3	N/A	1.02	1.03	1.05	N/A
Females	20.0	19.8	19.8	20.2	20.3	19.6	18.7	18.5	N/A	1.02	1.06	1.07	N/A
<b>60% median HDI</b>													
0-15 years	13.7	13.9	13.5	14.4	14.7	13.5	15.7	13.6	N/A	1.01	0.89	1.00	N/A
16-24 years	21.4	21.2	21.1	21.5	21.4	18.6	20.2	17.8	N/A	1.15	1.05	1.19	N/A
25-49 years	10.2	10.2	10.0	10.2	10.5	9.3	9.8	8.9	N/A	1.10	1.04	1.13	N/A
50-64 years	7.7	7.5	7.8	7.6	8.2	7.6	6.9	8.0	N/A	1.01	1.09	0.97	N/A
65+ years	4.8	4.7	4.8	4.5	4.8	5.9	6.5	5.5	N/A	0.81	0.72	0.87	N/A

Table 4.11 Minimum wage validation

	Baseline					Min Wage Incl.					Ratio				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Equivalised disposable income	263110	265318	269291	272561	275650	264562	266808	270788	274097	277215	0.99	0.99	0.99	0.99	0.99
Employment income	237627	240716	244756	248083	251457	239401	242539	246588	249949	253358	0.99	0.99	0.99	0.99	0.99
Total income tax	49474	49989	50682	52333	53066	49502	50018	50709	52360	53102	1.00	1.00	1.00	1.00	1.00
Social insurance contributions: peoples' insurances	39456	40864	41438	42007	44188	39593	41009	41581	42146	44320	1.00	1.00	1.00	1.00	1.00
General social assistance	3360	3423	3457	3516	3571	3254	3315	3349	3406	3460	1.03	1.03	1.03	1.03	1.03
Gini coefficient	25.0	25.0	25.0	25.0	25.2	24.8	24.7	24.8	24.8	24.9	1.01	1.01	1.01	1.01	1.01
Poverty rate (60% median HDI)	10.8	10.7	10.7	10.9	11.2	10.6	10.6	10.4	10.7	10.9	1.02	1.01	1.03	1.01	1.03