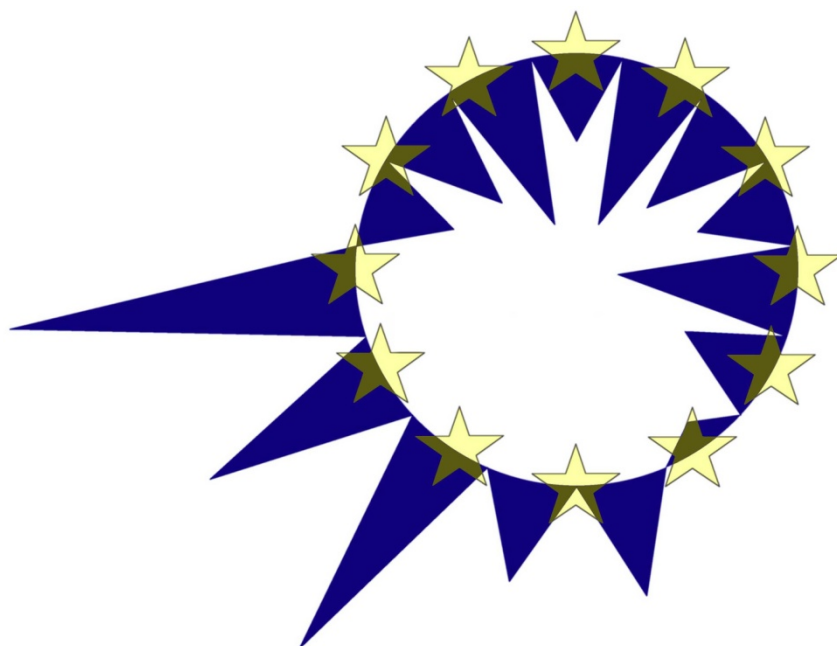


EUROMOD

COUNTRY REPORT



NETHERLANDS (NL)

2007-2010

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EUROMOD version F6.0



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

EUROMOD 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 F6.0 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>

This document is supported by the European Union Programme for Employment and Social Solidarity – PROGRESS (2007-2013).

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

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

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

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

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



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INTRODUCTION

This country report gives an overview of the Dutch country model in EUROMOD. The report presents basic information on the Dutch tax-benefit system valid in 2007-10 (as of 30th June in corresponding year), it explains which and how different taxes and benefits are simulated in the EUROMOD and how well the model represents actual income distribution and monetary aggregates.

1. BASIC INFORMATION

1.1 Basic figures

Table 1. Basic figures

	Pop. (m.)	Pop. < 18 (%)	Pop. ≥ 65 (%)	Life expect. (years)	Fertility rate	Unemp. rate	GDP per head (PPP)	Currency Name	Exch. rate ^[a]
2006	16.3	21.9	14.3	79.96	1.72	4.4	131 ^[b]	Euro	1
2007	16.4	21.8	14.5	80.42	1.72	3.6	132 ^[b]	Euro	1
2008	16.4	21.6	14.7	80.54	1.77	3.1	133 ^[b]	Euro	1
2009	16.5	21.4	15.0	80.8	1.79	3.7	131 ^[b]	Euro	1
2010	16.6		15.3	80.95	1.79	4.5	133 ^[b]	Euro	1

^[a] Euro exchange rate on 30th June.

^[b] EU-27=100

Source: Eurostat (2010, 2011) (<http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/themes>)

1.2 The tax-benefit system

Table 2. Tax-benefit system and government budget

	Total general government revenue ^[a] % of GDP	Total tax receipts ^[a] % of GDP	Total general government expenditure ^[a] % of GDP	Social protection ^[b] % of GDP
2006	47.2	39.3	46.7	28.8
2007	46.3	37.5 ^[c]	45.9	28.3
2008	46.4	39.1 ^[d]	45.5	28.5
2009	46.0 ^[b]	38.4 ^[b]	51.5 ^[b]	31.6 ^[e]
2010	46.2 ^[b]	38.8 ^[b]	51.2 ^[b]	

Source:

^[a] OECD in Figures (2007, 2008, 2009)

^[b] Eurostat (2012)

^[c] OECD Factbook (2010),

^[d] OECD (2011) (www.oecd.org)

^[e] Provisional figure



Table 3. Social benefits by function (as % of total benefits)

	Sickness/ health care	Disability	Old age	Survivors	Family/ children	Unemployment	Housing	Social exclusion
2006	32.7	8.7	35.2	5.3	5.4	5.0	1.4	6.2
2007	32.4	9.0	36.1	4.7	5.8	4.3	1.4	6.3
2008	34.9	8.8	35.8	4.5	4.4	3.8	1.4	6.5
2009	34.8	8.4	35.2	4.2	4.4	4.9	1.3	6.9

Source: Eurostat (2012) (<http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/themes>) (2009: provisional figures)

Table 4. Taxation (as % of total tax receipts)

	Personal income tax	Corporate income tax	Social security contributions		Taxes on goods and services	Other taxes
			Employees*	Employers		
2006	18.8	8.5	17.3	11.8	30.5	13.1
2007	n/a	n/a	n/a	n/a	n/a	n/a

* Includes self-employed

Source: OECD in Figures (2009)

1.2.1 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 1st January, each year. Main benefit changes happen at the same time, but may also be implemented on 1st July.
- The state pension age is 65 for men and women.
- Minimum school leaving age is 16; dependent children are defined as aged 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.

1.3 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 1st 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 the person was absent 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 is 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).

- *Scope and scale*

Table 5 and Table 6 provide an indication of the relative scale and coverage of each benefit by showing the number of recipients and the expenditure on each benefit.

Table 5. Social benefits: recipients (as % of population)

	2006	2007	2008	2009	2010
Child benefit	11.8	11.8	11.7	11.7	11.6
Survivor benefit	0.8	0.8	0.7	0.6	0.6
State old age pension	16.0	16.2	16.7	17.0	17.4
Social assistance					
WWB	2.0	1.9	1.8	1.9	2.1
IOAW/IOAZ	0.1	0.0	0.0	0.1	0.1
Rent allowance	6.3	6.6	6.7	6.7	6.8
Disability benefit					
WIA	0.1	0.2	0.4	0.5	0.7
WAO	3.9	3.6	3.4	3.2	2.9
Wajong	1.0	1.0	1.1	1.2	1.2
WAZ	0.3	0.3	0.2	0.2	0.2
Care allowance	30.2	30.5	30.8	30.6	31.4
Child care allowance	1.4	2.1	2.7	2.8	2.9
Maternity allowance	0.9	0.8	0.8	0.8	0.8
Unemployment benefit (WW)	1.5	1.2	1.0	1.9	1.6

Notes: Income related child allowance (2008) not included

Source: Jaarverslag SVB (2007, 2008, 2009, 2010), Jaarverslag SZW (2007, 2008, 2010), Beheersverslag Belastingdienst (2007, 2008, 2009, 2010),

Statistische tijdreeksen UWV (2008, 2009, 2010)



Table 6. Social benefit: expenditure (as % of total expenditure)

	2006	2007	2008	2009	2010
Annual expenditure (10⁹ Euro)	54.3	56.5	60.3	63.6	66.3
Child benefit	6.0	5.9	5.6	5.3	5.1
Survivor benefit	2.6	2.4	2.1	1.9	1.7
State old age pension	45.0	45.4	44.6	43.4	43.1
Social assistance					6.1
WWB	7.7	7.0	6.4	6.1	
IOAW/IOAZ	0.4	0.3	0.2	0.3	
Rent allowance	3.8	4.1	4.0	3.9	4.0
Disability benefit					
WIA	0.3	0.8	1.3	1.7	2.1
WAO	14.9	14.2	13.3	12.1	11.0
Wajong	3.1	3.3	3.3	3.5	3.5
WAZ	0.8	0.7	0.6	0.5	0.5
Care allowance	4.6	5.2	6.1	6.4	6.9
Child care allowance	1.7	3.7	4.7	4.8	5.0
Maternity allowance	1.5	1.7	1.8	1.8	1.6
Unemployment benefit (WW)	7.5	5.5	4.5	6.7	7.6
Income related child allowance	-	-	1.4	1.6	1.7

Source: Jaarverslag SVB (2007, 2008, 2009, 2010), Jaarverslag SZW (2007, 2008, 2010), Beheersverslag Belastingdienst (2007, 2008, 2009, 2010), Statistische tijdreeksen UWV (2008, 2009, 2010)

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 loonbetaling bij ziekte*).



1.4 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).

- *Scope and scale*

The following tables show the number of contributors and the composition of social contributions, as a percentage of overall revenue.



Table 7. Social contributions: contributors (as % of population)

	2006	2007	2008	2009	2010
Social contributions					
Employees insurances	43.3	44.3	44.6	42.9	42.8
Unemployment insurance					
Disability insurance					
Peoples insurances					
Basic State Pension					
Survivor benefit					
General act on special health care cost					
Health insurance contribution					
Income related					
Private	78.1	78.2	78.4	78.6	78.7

Notes: All contributions (except private health insurance premiums) collected by tax service. Tax service does not publish the relevant figures.

Unemployment insurance figures refer to numbers of employees insured as published by UWV (Statistische tijdschriften UWV, 2009). Private health insurance figures approximated by the share of the population aged 18 or over (statline.cbs.nl)

Source:

Table 8. Social contributions: revenue (as % of total revenue)

	2006	2007	2008	2009	2010
Social contributions (€mln)	62,010	64,448	72,456	65,317	67,568
Employees insurances					
Unemployment insurance	26.1	27.4	26.2	24.6	24.6
Disability insurance					
Peoples insurances					
Basic State Pension					
Survivor benefit	53.4	49.7	50.6	49.9	49.9
General act on special health care cost					
Health insurance contribution	20.5	22.8	23.2	25.5	25.5

Notes: Excludes private health insurance contributions and occupational pension contributions

Source: Beheersverslag belastingdienst 2007, 2008, 2009, 2010

1.5 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% 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.

- *Scope and scale*

The following table shows the composition of taxes as a percentage of the overall tax revenue. The number of taxpayers as proportion of the total population is not available for the Netherlands.



Table 9. Taxes: revenue (as % of overall tax revenue)

	2006	2007	2008	2009	2010
Annual revenue (€mln)	126,843	134,941	138,062	124,893	134,481
as % of total revenue:					
Direct Taxes	46.7	47.5	47.1	50.4	48.3
Personal Income Tax	31.0	32.1	32.0	39.2	37.1
Corporate income tax	14.1	13.7	13.6	9.3	9.5
Inheritance tax	1.4	1.4	1.3	1.5	1.3
Indirect Taxes	53.3	52.4	52.8	49.6	51.7
Value Added Tax	31.5	31.3	31.4	27.9	31.2
Excise duties	7.7	7.4	7.6	8.6	8.2
Motor vehicle tax	2.1	2.1	2.2	2.7	2.7
Tax on passenger cars and motorcycles	2.7	2.7	2.4	1.7	1.5
Environmental taxes	3.5	2.9	3.4	4.0	3.6
Transfer tax, insurance tax	4.2	4.3	3.9	2.9	2.7
Other indirect taxes, import duties	1.7	1.8	1.9	1.8	1.8
N.e.c.	0.0	0.1	0.1	0.0	0.0

Source: Beheersverslag Belastingdienst 2007, 2008, 2009, 2010

Notes: Only includes revenues collected by the national tax authorities.

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 10 and Table 11 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 10. Simulation of benefits in EUROMOD

	Variable name(s)	Treatment in EUROMOD					Why not fully simulated?
		2006	2007	2008	2009	2010	
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	
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	
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	This is converted from TC since 2008
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 11. Simulation of taxes and social contributions in EUROMOD

	Variable name(s)	Treatment in EUROMOD					Why not fully simulated?
		2006	2007	2008	2009	2010	
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	tsceei_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:	tsceepi_s	S	S	S	S	S	
AOW	Temp_PIpension						
AWBZ	Temp_PIhealth	S	S	S	S	S	
ANW	Temp_PIsurvivor	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.



2.2 Simulated policies and order of simulation

2.2.1 Simulated policies

The model allows simulating changes in the tax rates and contribution rates, changes in tax deductions and allowances, family benefits, and major rules for social assistance benefit. 2006 is the first simulated year of the Netherlands policies in EUROMOD. The order of simulation is reported below.

2.2.2 Order of simulation and interdependencies

The following table shows the order in which the main elements of the Dutch system are simulated.

Table 12. EUROMOD Spine: order of simulation, 2006-2009,

Policy	Description	2006	2007	2008	2009	2010
uprate_nl	Definition of uprating factors	on	on	on	on	on
constdef_nl	Definition of constants	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
PSU_nl	Survivor pension	on	on	on	on	on
POA_nl	State pension	on	on	on	on	on
BUNCT_nl	Unemployment ins. benefit	on	on	on	on	on
EESIC_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 (2008)**	off	off	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

** Simulated for 2008-2010 in the model (was introduced in 2008)

2.2.3 Structural changes over time

- *Structural changes between 2006 and 2007*

- 1) Unemployment benefit (after 1st October 2006):
 - a) Duration of general unemployment benefit: 3 months
 - b) Duration of extended unemployment benefit: duration in months equals employment record in years, with a maximum of 38 months.



- c) Unemployment benefits amounts are equal to 75% of previous earnings (during the first two months of unemployment), 70% of previous earnings (later).

• **Structural changes between 2007 and 2008**

- 1) Rent allowance (after 1st January 2008)
 - a) Norm rent to be calculated via formula: $a * income^2 + b * income + c$ with a, b (and possibly c) different for the four different groups distinguished in the rent allowance rules.
- 2) Tax credits (from January 2008)
 - a) child credit was abolished and replaced by the introduction of an income related child allowance. The tax unit ($tu_Childunder18_nl$) is eligible if:
 - i. taxable income of the couple ($ink = il_taxable_box1 + temp_taxbase_box3$) is less than 46700: $C - D/100 * max((ink-B), 0)$;
 - ii. and there are children for whom child benefit is received.
 - b) In 2008: B= 29,413, C = 994, D = 5.75
 - c) In 2009: $max(0, C - D/100 * max((ink-B), 0))$, B = 29,914, D= 6.5. C = 1011 (1ch), 1,322 (2ch) , 1,505 (3ch), 1,611 (4ch) + 51 per additional child

Notably, this allowance is also paid when the tax unit has a lower income tax/peoples insurance contribution burden. (In other words, it is calculated as a benefit, but info on taxable income is needed for the calculation).

• **Structural changes between 2008 and 2009**

- 1) Tax credits (from January 2009)
 - a) reduction of maximum work credit if earnings are greater than €42,509;
 - b) 1.25% with a maximum of €24 (65+: 0.573% with a maximum of €11)
- 2) From January 2009:
 - a) combination credit and supplementary combination credit have been replaced by income dependent combination credit.
 - b) The new tax credit is paid to the spouse with the lowest earnings in a household with at least a child younger than 12 ($tu_Childunder12_nl$).
 - c) For receivers younger than 65 years old, it amounts to €770 + $0.038 * (il_taxable_worktc - 4619)$ if earnings (yem) are between €4,619 and €30,800. For earnings greater than € 30800 per year, the combination credit amounts to €1,765. For earnings lower than €4,619 per year, the combination credit is zero.
 - d) For receivers over 65 with earnings between €4,619 and €30,800, it amounts to €60 + $0.0177 * (il_taxable_worktc - 4,619)$. If yearly earnings are lower than €4,619, the combination credit is zero, whilst if earnings are greater than €30,800 per year, the combination credit is €23.

• **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.

2.2.4 Policy constants

Policy parameters used in more than one policy are defined as constants. For the Netherlands, this is pension age which is 65 years old for both males and females.

Table 13. Policy constants

Name	Period	Abbreviation	Policies where used
Official pension age	-	\$PenAge	Minimum wage, survivor and state pension, unemployment insurance benefit, employee and employer social insurance contribution, gross income tax (box1), gross people's insurance contribution, income tax credit, social assistance benefit (net and gross), care allowance and housing benefit

2.3 Minimum wage

The national minimum wage holds for all employees aged between 23 and 65. It is indexed by the minister of Social Affairs and Employment on 1st January and 1st July, following the average development of the contractual wages in the private and public sector. However, indexation may be suspended if it is considered harmful by the government. In addition to the minimum wage in question, employees are entitled to 8% holiday allowance. Employees younger than 23 are entitled to a percentage of the minimum wage, depending on their age. By law, the minimum wage amount is determined per month, week and day. The hourly minimum wage depends on the number of hours that make up full-time employment (which differs by sector and firm).

Table 14. Minimum wage (net of holiday allowance)

	2006	2007	2008	2009	2010	2011
Per month	1,272.60	1,300.80	1,335.00	1,381.20	1,407.60	1,424.40
Per week	293.70	300.20	308.10	318.75	324.85	328.70
Per day	58.74	60.04	61.62	63.75	64.97	65.74

Table 15. Minimum wage percentages by age

Age	%
22	85.0
21	72.5
20	61.5
19	52.5
18	45.5
17	39.5
16	34.5
15	30.0



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 €1,175 + 1,100/4 net per quarter (or €483.33 per month).

Table 16. Child benefit: income limits

Income limits	2006	2007	2008	2009	2010	2011
Amount per quarter	1,175	1,196	1,217	1,240	1,240	1,240
+	1,100/4	1,100/4	1,150/4	1,200/4	1,200/4	1,250/4
= per month	483.33	490.33	501.5	513.33	513.33	517.5

- **Benefit amount**

The base amount is €177.89 per quarter per child. Different multipliers apply depending on whether the child was born before or after (and including) 1994. If born before 1st October 1994, the multiplier depends on both parity and age:

Table 17. Child benefit: base amounts

	2006	2007	2008	2009	2010	2011
Base amount	177.89	187.42	190.19	194.99	194.99	194.99

Table 18. Child benefit: multipliers for children born before October 1st, 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 1st October 1994, the amount depends only on age:

Table 19. Child benefit: multipliers for children born after 1st October 1994

AGE	
<6	1
6 to 11	1.2143
<18	1.4286

The resulting multipliers for 2006 are as follows:

Table 20. Child benefit: Multipliers 2006

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 to 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 <=5, 1 aged 6 to 11 and 2 aged 12 to 17 would be entitled to $(1 + 1.2143 + 2 \cdot 1.8111)$ times the base amount per three months.

For 2007 - 2009 this would change to:



Table 21. Child benefit: multipliers 2007-2011

	AGE	Total number of eligible Children									
		1	2	3	4	5	6	7	8	9	10+
2007	<=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	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286
	13 to 17	1.4286	1.6138	1.6754	1.8111	1.8925	1.9467	1.9855	2.0565	2.1117	2.1560
2008	<=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	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286	1.4286
	14 to 17	1.4286	1.6138	1.6754	1.8111	1.8925	1.9467	1.9855	2.0565	2.1117	2.1560
2009	<=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
2010	<=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
2011	<=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

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 65)

- *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 65 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



c) was born before 1st 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 ($0.5 * \text{the minimum wage of } \text{€}1,272.60 \text{ per month (B)}$), 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 €36.30, and zero if income from work is above €1,128.65. Notably, all these amounts are net of holiday allowance.

Table 22. Survivor benefit: relevant thresholds

	2006	2007	2008	2009	2010	2011
Minimum wage (B)	1,272.6	1,300.8	1,335	1,381.2	1,407.6	1,424.4
Full benefit paid below (A)	636.3	650.4	667.5	690.6	703.8	712.2
No benefit paid above	2,128.65	2,175.435	2,231.82	2,294.07	2,335.74	2,359.02

- **Benefit amount**

Survivor benefit: maximum: €1,059.6 = €94.97 + €64.63 holiday allowance per month

'Half-orphan' benefit: €228.49 + 18.45 per month.

As of 2007, recipients of the survivor benefit are awarded an extra allowance.

Table 23. Survivor benefit: base amounts

	2006	2007	2008	2009	2010	2011
Amount	994.97	1,016.69	1,042.88	1,068.98	1,087.96	1,097.88
Holiday allowance	64.63	65.87	64.69	68.27	68.70	70.17
Extra allowance		13.82	14.86	16.78	16.78	15.61
Total	1,059.50	1,096.28	1,122.43	1,154.03	1,173.44	1,183.56
Half orphan benefit (HOB)	228.49	235.29	240.23	261.04	263.98	265.46
Holiday allowance HOB	18.45	18.82	18.47	19.48	19.62	20.04
Total HOB	246.94	254.11	258.70	280.52	283.60	285.5

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 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 1st July 1996. Special rules apply for persons who were already survivor before that date, and for persons born between 1st January 1950 and 1st July 1956 who lost their partner before 1st 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.

2.4.3 State pension (*poa_s*)

- **Brief description**

Flat rate state pension for all residents aged 65 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 ≤ 64). When both spouses are older than 64, 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))

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

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 = €1,272.6. 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+: €32.67 + €3.22 holiday allowance = €85.89

Married/cohabiting, 65+ €36.69 + €8.02 = €74.71 (per person)

Supplement if spouse < 65: at most €36.69 + €8.02 = €74.71

Table 24. State pension: benefit amounts

	2006	2007	2008	2009	2010	2011
Single person	932.67	956.18	984.86	1,001.94	1,017.97	1,034.38
Holiday allowance	53.22	54.36	53.68	56.5	56.97	58.62
Extra allowance		13.82	14.86	36.45	34.26	33.09
Married/cohabiting	636.69	653.73	673.84	686.78	698.58	710.41
Supplement	636.69	653.73	673.84	686.78	698.58	710.41
Holiday allowance	38.02	38.83	38.35	40.36	40.69	41.87
Supplement holiday allowance	38.02	38.83	38.35	40.36	40.69	41.87
Extra allowance		13.82	14.86	36.45	34.26	33.09

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

The latter amounts are valid for pensions started from 1st 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 €32.67 + €3.22 holiday allowance + a supplement of max. €40.71 + €2.82. 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.

As of 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 €5,180
- if married/cohabiting/lone parent, assets are less than married asset limit of €10,360
- 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 25. Social assistance: Asset test amounts

	2006	2007	2008	2009	2010	2011
Single persons	5,180	5,245	5,325	5,455	5,480	5,555
Couples, lone parents	10,360	10,490	10,650	10,910	10,960	11,110

Assets include financial assets (savings, cash, shares) of all members of the benefits unit but also the value of cars, motor cycles, caravans, boats, houses. The local authorities (municipalities) have some discretionary power in taking into account the value of cars, motor cycles 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).¹

- **Income test**

The income base for the means test consists of all other employment income², 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

¹ 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.

² Employment income of dependent children is not taken into account.



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%.³

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

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

Table 26. Social assistance: Factor 1

	2006	2007	2008	2009	2010	2011
age < 65 ^[a]	1.57158	1.558537	1.562969	1.557911	1.557832	...

^[a]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, peoples insurance contributions and tax credits are not taken into account.

- **Benefit amount**

- a) Couples with children

- €1,201.20 (if both aged 21-64)
- €1,261.72 (if both 65+)
- €1,261.72 (if one 65+, one 21-64)
- €655.34 (if both 18-20)
- €1,048.39 (if one 18-20, one 21+)

- b) Couples without children

- €1,201.20 (if both aged 21-64)
- €1,261.72 (if both 65+)

³ 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) $\min(0.25 \cdot \text{inc}, 172) + (\text{if } \text{inc} > \text{€}89): (50\% \text{ of } \min(163, \text{inc}) - 89)$ 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.



€1,261.72 (if one 65+, one 21-64)
 €415.10 (if both 18-20)
 €808.15 (if one 18-20, one 21+)

c) Lone Parent

€840.84 + €240.24 (if 21-64)
 €1,133.09 (if 65+)
 €447.79 (if 18-20)

d) Single person

€600.6 + €240.24 (if really living alone) (21-64)
 €13.18 (if 65+)
 €207.55 (if 18-20)

Table 27. Social assistance: base amounts

	2006	2007	2008	2009	2010	2011
Couple with children						
21-64	1201.20	1236.86	1260.28	1283.86	1299.94	1313.85
65+	1261.72	1295.1	1321.84	1353.95	1374.32	1388.16
1 21-64, 1 65+	1261.72	1295.1	1321.84	1353.95	1374.32	1388.16
18-20	655.34	674.81	687.56	700.39	708.67	716.77
1 18-20, 1 20+	1048.39	1079.52	1099.95	1120.51	1133.76	1146.70
Couple no children						
21-64	1201.20	1236.86	1260.28	1283.86	1299.94	1313.85
65+	1261.72	1295.1	1321.84	1353.95	1374.32	1388.16
1 21-64, 1 65+	1261.72	1295.1	1321.84	1353.95	1374.32	1388.16
18-20	415.10	427.44	435.5	443.62	448.86	454.00
1 18-20, 1 20+	808.15	832.15	847.89	863.74	873.95	883.93
Single parents						
21-64	840.84	856.8	882.2	898.7	909.33	919.7
supplement	240.24	247.37	252.06	256.77	259.81	262.77
65+	1133.09	1163.67	1187.92	1240.38	1255.47	1268.72
18-20	447.79	461.09	469.81	478.58	484.24	489.77
Single persons						
21-64	600.60	618.43	630.14	641.93	649.52	656.93
supplement	240.24	247.37	252.06	256.77	259.81	262.77
65+	913.18	944.86	963.78	985.42	999.17	1008.30
18-20	207.55	213.12	217.75	221.81	224.43	227.00

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.⁴ 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 new social assistance act (WIJ) for persons younger than 27 is not modelled separately.

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**

As of 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 1/1/2006. The latter condition is assumed to be satisfied if the head is age <65 in 2006.

E. Single person ($nPersInTUt=1$) elderly (over 64 on 1/1/2006) household ($dag \geq \$PenAge$).

G. multipersons elderly household ($nPersInTu \geq 2$) in which more than half of income is received by persons 65+ on 1/1/2006 ($age1 \geq 65$)

- **Income test**

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

Asset test: from 2006: no rent subsidy is paid if tax payable on income in Box 3 is nonzero.

⁴ 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



Income disregard: for children younger than 23 up to €4137 of their income is not taken into account.

Table 28. Rent allowance: disregarded child income

	2006	2007	2008	2009	2010	2011
Disregarded child income	4137	4204	4268	4341	4424	4451

- **Benefit amount**

Computation of rent subsidy (amounts per month): If the actual rent is between €167.32 (*lo_rent_lt*) and €604.72 (*up_rent_lt*) per month in 2006. The monthly rent subsidy is then calculated as follows:

Table 29. Rent allowance: relevant amounts

	2006	2007	2008	2009	2010	2011
<i>lo_rent_lt</i>	167.32	195.89	197.74	200.70		
<i>up_rent_lt</i>	604.72	615.01	621.78	631.73	647.53	652.52
<i>rent1_lt</i>	331.78	339.08	343.49	348.99	357.37	361.66
<i>rent21_lt</i>	474.88	485.33	491.64	499.51	511.50	517.64
<i>rent22_lt</i>	508.95	520.12	526.89	535.33	548.18	554.76
<i>subsidy2_rt</i>	0.75	0.75	0.75	0.75	0.75	0.75
<i>subsidy3_rt</i>	0.5	0.5	0.5	0.5	0.5	0.5

1) norm rent < actual rent ≤ €331.78 (*rent1_lt*):

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

2) (norm rent < actual rent) & (€331.78 < actual rent ≤ B).

(B = €474.88 (1,2pers), (*rent21_lt*), B = €508.95 (3+ pers) (*rent22_lt*)):

$$\text{subsidy} = 0.75(\text{subsidy2_rt}) * (\text{actual rent} - \max(\text{norm rent}, 331.78)) + \max(0, 331.78 - \text{norm rent})$$

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

$$\text{subsidy} = 0.5(=\text{subsidy3_rt}) * (\text{actual rent} - \max(B, \text{norm rent})) + 0.75 * \max(0, B - \max(\text{norm rent}, 331.78)) + \max(0, 331.78 - \text{norm rent})$$

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 in table or if actual rent above €604.72 (*up_rent_lt*) or below €167.32 (*lo_rent_lt*).

Norm rent calculation: it depends on the age and the number of persons in the household and the taxable income. It can be derived from Table 30 below.



Table 30. Norm rent given taxable income by regime (2006)

A		C		E		G	
inc. (year)	norm.rent (month)	inc. (year)	norm.rent (month)	inc. (year)	norm.rent (month)	inc. (year)	norm.rent (month)
<i>y₁ - y₂₂</i>	<i>norm_rent_1 - norm_rent_22</i>	<i>y₁ - y₂₈</i>	<i>norm_rent_1 - norm_rent_28</i>	<i>y₁ - y₁₇</i>	<i>norm_rent_1 - norm_rent_17</i>	<i>y₁ - y₂₂</i>	<i>norm_rent_1 - norm_rent_22</i>
14,125	192.82	18,075	192.82	13,850	191.00	17,825	189.19
14,225	199.07	18,225	199.96	13,900	198.65	17,900	197.78
14,450	203.18	18,450	203.58	14,125	203.39	18,125	201.66
14,675	208.95	18,675	207.96	14,350	211.27	18,350	207.54
14,900	214.8	18,900	212.40	14,575	219.30	18,575	213.51
15,125	220.74	19,125	216.88	14,800	227.48	18,800	219.57
15,350	226.77	19,350	221.42	15,025	235.81	19,025	225.72
15,575	232.88	19,575	226.00	15,250	244.30	19,250	231.95
15,800	239.08	19,800	230.64	15,475	252.94	19,475	238.27
16,025	245.36	20,025	235.32	15,700	261.74	19,700	244.68
16,250	251.73	20,250	240.06	15,925	270.68	19,925	251.18
16,475	258.91	20,475	244.84	16,150	279.78	20,150	257.76
16,700	264.74	20,700	249.68	16,375	289.04	20,375	264.44
16,925	271.37	20,925	254.56	16,600	298.44	20,600	271.19
17,150	278.09	21,150	259.50	16,825	308.00	20,825	278.04
17,600	288.33	21,600	266.99	17,275	322.63	21,275	288.47
18,050	302.28	22,050	277.16	17,725	342.67	21,725	302.69
18,500	316.58	22,950	298.10	17,950	358.09	22,175	317.26
18,950	331.23	23,400	308.87			22,625	332.17
19,400	346.23	23,850	319.84			23,075	347.44
19,850	361.57	24,300	331.01			23,525	363.06
20,000	371.99	24,750	342.38			23,825	376.34
		25,200	353.95				
		25,650	365.72				
		26,100	377.69				
		26,550	389.86				
		27,000	402.23				
		27,175	410.94				



Table 31. Norm rent given taxable income, 2007

inc. (year)	norm.rent (month)	inc. (year)	norm.rent (month)	inc. (year)	norm.rent (month)	inc. (year)	norm.rent (month)
<i>y₋₁ - y₋₂₂</i>	<i>norm_rent_1 - norm_rent_22</i>	<i>y₋₁ - y₋₂₈</i>	<i>norm_rent_1 - norm_rent_28</i>	<i>y₋₁ - y₋₁₇</i>	<i>norm_rent_1 - norm_rent_17</i>	<i>y₋₁ - y₋₂₂</i>	<i>norm_rent_1 - norm_rent_22</i>
14,425	199.52	18,500	199.52	14,225	197.70	18,375	195.89
14,450	204.84	18,675	206.93	14,450	208.18	18,450	204.39
14,675	207.99	18,900	210.80	14,675	215.89	18,675	208.22
14,900	213.74	19,125	215.20	14,900	223.74	18,900	214.03
15,125	219.56	19,350	219.65	15,125	231.73	19,125	219.93
15,350	225.48	19,575	224.15	15,350	239.87	19,350	225.91
15,575	231.47	19,800	228.70	15,575	248.16	19,575	231.98
15,800	237.56	20,025	233.30	15,800	256.59	19,800	238.13
16,025	243.73	20,250	237.95	16,025	265.17	20,025	244.36
16,250	249.98	20,475	242.65	16,250	273.89	20,250	250.68
16,475	256.32	20,700	247.40	16,475	282.76	20,475	257.08
16,700	262.74	20,925	252.19	16,700	291.77	20,700	263.56
16,925	269.25	21,150	257.04	16,925	300.93	20,925	270.13
17,150	275.84	21,375	261.93	17,150	310.23	21,150	276.78
17,375	282.52	21,600	266.88	17,375	319.68	21,375	283.52
17,825	292.69	22,050	274.39	17,825	334.13	21,825	293.78
18,275	306.56	22,500	284.57	18,250	353.34	22,275	307.76
18,725	320.77	22,950	294.96			22,725	322.06
19,175	335.31	23,400	305.53			23,175	336.71
19,625	350.2	23,850	316.31			23,625	351.69
20,075	365.42	24,300	327.28			24,075	367.00
20,300	377.07	24,750	338.45			24,275	378.27
		25,200	349.82				
		25,650	361.39				
		26,100	373.15				
		26,550	385.11				
		27,000	397.26				
		27,450	409.62				
		27,575	417.61				

As from 2008, the norm rent is no longer derived from a table but calculated on the basis of a formula: $a \cdot \text{income} \cdot \text{income} + b \cdot \text{income} + c$. 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 32. Parameters used for the calculation of norm rent (2008, 2009, 2010)

2008	A	C	E	G
a	0.000000798341	0.000000461312	0.000001356127	0.000000787170
b	0.000880599410	0.001184413968	-0.006817816388	-0.004931105704
c	16.52	16.52	16.52	16.52
minimum	201.37	201.37	199.55	197.74
minimum thr				
maximum income	20600	27950	18525	24625
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

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*

General benefit: eligible are persons who have been at least 26 weeks in paid employment during the last 36 (before 2006: 39) weeks. Notably, general 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***

General benefit: 70% of statutory minimum wage (€1374.41) per month for persons aged 23 or over, or 70% of previous earnings, whichever is lower.

Extended benefit: 70% of previous earnings up to a maximum daily wage of €168 (€3,654/month).

Payment duration:

General benefit: six months

Extended benefit: (depending on age and employment record) minimum: six months and maximum five 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 18th birthday minus five⁵ 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.

Table 33. Unemployment benefit: duration by employment record

Employment record	Duration of extended benefit
4 years	6 months
5 – 10 years	9 months
10 – 15 years	1 year
15 – 20 years	1.5 years
20 – 25 years	2 years
25 – 30 years	2.5 years
30 – 35 years	3 years
35 – 40 years	4 years
40 + years	5 years

Changes over time

Duration rules changed for the extended benefit as per 1/10/2006: duration in months equals the number of years worked, with a maximum of 38 (the minimum being four months with a minimum employment record of four years).

The general benefit was replaced by a short term earnings related benefit (three months).

The benefit for the first two months was increased to 75% of previous earnings (up to the maximum daily wage of €168).

⁵ Notably, since 1st January 2005, if possible, the actual number of years worked is taken into account.



Previous earnings: 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.

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 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.

General 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 (six months in 2006 and three months from 2007 onward).

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 (*maxbunctmy01_s* in accordance to Table 33).

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 *fnct_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.

- **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 2006, eligibility was limited to single tax payers with total taxable income less than €25068 per year and tax payers with allowance partners with total taxable income less than €40120 per year.

Table 34. Income limits health care allowance

	2006	2007	2008	2009	2010	2011
Single tax payers	25,068	26,071	29,069	32,502	33,743	36,022
Tax payers with allowance partners	40,210	41,880	47,520	47,880	50,000	54,264

- **Benefit amount**

The benefit is calculated as follows: The norm premium is calculated as $0.05 * \max(0, \text{total taxable income} - 17494) + 874.70 * (1 \text{ if person with allowance partner, } 0 \text{ otherwise}) + 612.29 * (1 \text{ if person without allowance partner, } 0 \text{ otherwise})$.

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

Health care allowance = $(E - \text{norm premium})$ for persons with allowance partners

= $(F - \text{norm premium})$ for persons without allowance partners



The health care allowance is then calculated as (2030 – norm premium) in the case of persons with allowance partners, and (1015 – norm premium) in the case of persons without allowance partners.



Table 35. Parameters used in calculation of health care allowance

	2006	2007	2008	2009	2010	2011
A	0.05	0.05	0.05	0.05	0.05	0.0503
B	17,494	17,905	18,496	19,135	19,528	19,890
C	874.70	895	924	926	976	997
D	612.29	627	647	516	527	540
E	2,030	2,118	2,400	2,418	2,524	2,750
F	1,015	1,059	1,200	1,209	1,262	1,375

2.4.8 Child allowance (*bch_s*) – from 2008

- *Definitions*

As of 2008, the child tax credit (see section 2.6.6) was replaced by an income related child allowance (see CHALL_nl). The main difference is that the child allowance is also payable in the case of low or zero income.

- *Eligibility Conditions*

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

- *Income test*

In 2008 child allowance was set as a means tested benefit. Eligible tax payers were limited to those who had total taxable income less than €6,700 per year (including 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*).

As of 2009, the child allowance was renamed *child related budget*, and the amount was differentiated by the number of children for whom there was 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 36. Income related child allowance parameters

	2006	2007	2008	2009	2010	2011
Income threshold			46,700			(see 2010)
B			29,413	29,914	28,897	
C			994	1,011	1,011	
D			5.75%	6.5%	7.6%	
C 2 kids				1,322	1,322	
C 3 kids				1,505	1,505	
C 4 kids				1,611	1,611	
C 5+ kids, extra per child				51	51	
Increase 12-15					231	
Increase 16-17					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 5.2% on wages between €1,261.5 and €3,654.67 per month: $0.052 * (\text{wage} > 1261.5) * \min(\text{wage} - 1261.5, 3654.67 - 1261.5)$. Similar rules apply for public sector employees who are not identified separately in EUROMOD.

The basis for the calculation of unemployment insurance contributions (*Uleesic_Base*) 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 37. Parameters employee contribution to unemployment insurance

	2006	2007	2008	2009	2010	2011
rate	5.2%	3.85%	3.5%	0%	0%	0%
lower_lt	1,261.5	1,305	1,326.75			
maxbase	3,654.67	3,751.44	3,850.42			

2.5.2 Employer social contributions

Employers pay social contributions divided into unemployment insurance contribution and disability insurance contribution⁶.

a) Employer contributions to unemployment insurance (*tscerui_s*)

Employers of employees in the private sector aged below 65 on average pay a contribution of 1.48% on wages below €1,261.5, and a total contribution of 4.93% on wages between €1,261.5 and €3,654.67 per month: $0.0148 * \min(\text{wage}, 1,261.5) + 0.0493 * (\text{wage} > 1,261.5) * \min(\text{wage} - 1,261.5, 3654.67 - 1261.5)$ For public sector employees rules are the same.

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

Table 38. Parameters employer contribution to unemployment insurance

	2006	2007	2008	2009	2010	2011
rate1	1.48%	1.25%	1.35%	1.4%	1.85%	2.24%
rate2	4.93%	4.4%	4.75%	4.15%	4.2%	4.2%
lower_lt	1,261.50	1,305.00	1,326.75	1,370.25	1,392.00	1,413.75
maxbase	3,654.67	3,751.44	3,850.42	3,983.51	4,059.63	4,108.08

b) Employer contributions to disability insurance (*tscerdi_s*)

Employers of employees in the private sector aged below 65 pay, on average, a total contribution of 6.38% on wages with a wage limit of €3,654.67 per month: $0.0638 * \min(\text{wage}, 3,654.67)$. For public sector employees rules are the same.

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

Table 39. Parameters employer contribution to disability insurance

	2006	2007	2008	2009	2010	2011
rate2	6.38%	6.38%	6.37%	6.32%	6.36%	5.72%
Maxbase2	3,654.67	3,751.44	3,850.42	3,983.51	4,059.63	4,108.08

⁶ In addition, most employers pay occupational pension fund contributions, differing by sector or firm (not modelled in EUROMOD)



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

No longer in force in 2006.

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 2006 they are 17.9%, 1.25% and 12.55 % respectively for AOW, ANW and AWBZ. Hence, the total contribution in 2006 amounts to 31.7%. Persons aged 65 or older do not pay AOW contributions and their contribution rate is 13.8%.

The maximum base for the calculation of these contributions is €30,632 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 bracket⁷.

⁷ In 2006, the lowest income tax rate was 2.45%. The peoples insurance contribution rate is (17.9 + 1.25 + 12.55 =) 31.7% (13.8% for 65+). So $2.45/(2.45+31.7)$ of the tax credit is to be subtracted from the income tax ($2.45/(2.45+13.8)$ 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).



Table 40. Contribution rates and maximum base peoples' insurances

	2006	2007	2008	2009	2010	2011
AOW	17.9%	17.9%	17.9%	17.9%	17.9%	17.9%
ANW	1.25%	1.25%	1.1%	1.1%	1.1%	1.1%
AWBZ	12.55%	12%	12.15%	12.15%	12.15%	12.15%
pi_maxbase	30632	31122	31589	32127	32738	33436

- **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_taxabley_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*)

As of 1st January 2006, 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 2006, the average flat rate health insurance premium (*tschlfx_s*) amounted to €1,027 per adult (aged 18+) per year.

The earnings related contribution amounts to 6.5% of gross earnings and benefits (including the basic state pension AOW). On self-employment income and supplementary pensions the contribution rate is 4.4%. The maximum tax base is €30,000. Notably, employers and benefit agencies have to compensate this income related contribution. This compensation is taxable. In general, pension recipients are not compensated.

Table 41. Parameters health insurance contribution

	2006	2007	2008	2009	2010	2011
Average flat rate	1,027	1,091	1,053	1,064	1,107	1,211
Contribution rate:						
Earnings etc	6.5%	6.5%	7.2%	6.9%	7.05%	7.75%
Self-employment etc	4.4%	4.4%	5.1%	4.8%	4.95%	5.65%
maxbase	30,000	30,623	31,231	32,369	33,189	33,427



In the case of multiple sources of income, the contribution is calculated as follows: Firstly, as indicated above, the total maximum base is €30,000 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 6.5%. 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 6.5% (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 4.4% 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 6.5% of €20,000 (compensated by his employer) + 4.4% of €10,000.

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

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

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*) (included in EUROMOD but not discussed in previous country reports). Amounts and thresholds:

Table 42. Parameters self-employment deduction

	2006	2007	2008	2009	2010	2011
lower_lt1	13,150	13,360	13,465	13,695	13,960	14,045
lower_lt2	15,255	15,500	15,620	15,890	16,195	16,295
lower_lt3	17,360	17,640	17,775	18,080	18,425	18,540
lower_lt4	49,720	50,515	50,895	51,765	52,750	53,070
lower_lt5	51,825	52,655	53,050	53,955	54,985	55,315
lower_lt6	53,935	54,795	55,210	56,150	57,220	57,565
lower_lt7	56,030	56,930	57,360	58,340	59,450	59,810
amt_1	8,885	9,028	9,096	9,251	9,427	9,484
amt_2	8,260	8,393	8,456	8,600	8,764	8,817
amt_3	7,638	7,761	7,820	7,953	8,105	8,154
amt_4	6,807	6,916	6,968	7,087	7,222	7,266
amt_5	6,213	6,313	6,361	6,470	6,593	6,633
amt_6	5,556	5,645	5,688	5,785	5,895	5,931
amt_7	4,903	4,982	5,020	5,106	5,204	5,236
amt_8	4,310	4,379	4,412	4,488	4,574	4,602
starters	1,987	2,019	2,035	2,070	2,110	2,123
65+	0	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 worked⁸. 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.

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 considerable 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

⁸ This hours criterion was not implemented in the previous version 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.



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 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. From 2006: 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 43. Parameters income tax schedule

	2006	2007	2008	2009	2010	2011
tax_rate1	2.45%	2.5%	2.45%	2.35%	2.3%	1.85%
tax_rate2	9.75%	10.25%	10.7%	10.85%	10.8%	10.8%
tax_rate3	42%	42%	42%	42%	42%	42%
tax_rate4	52%	52%	52%	52%	52%	52%
band1 up to	17,046	17,319	17,579	17,878	18,218	18,628
band2 up to	30,632	31,122	31,589	32,127	32,738	33,436
band3 up to	52,230	53,064	53,860	54,776	54,367	55,695

Hence for 2006:

Tax band		Per year	Per month		Tax-rate
1	0	17,046	1,420.50	<i>tax_band1</i>	<i>tax_rate1</i> : 2.45%
2	17,046	30,632	2,552.67	<i>tax_band2</i>	<i>tax_rate2</i> : 9.75%
3	30,632	52,230	4,352.50	<i>tax_band3</i>	<i>tax_rate3</i> : 42%
<i>nbands</i> : 4	52,230			<i>tax_band4</i>	<i>tax_rate4</i> : 52%



Box 2

Income from considerable 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 2nd accommodation etc) minus max (0, debts minus €2,700) are calculated on 1st January and 31st December and averaged. (Mortgages on owned (1st) 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 €19,698 per person. For minor children (aged less than 18) an additional tax free asset allowance of €2,631 per child is awarded. 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 31st December are entitled to an additional asset allowance. The old age asset allowance is zero if the taxable asset base exceeds €260,677 or if taxable income in Box 1 exceeds €18,539. If income in Box 1 is between €13,326 and €18,539, the old age allowance equals €13,038. 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 €13,038 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 $A-B-C < €13,038$. If income in Box 1 is below €13,326 the maximum old age allowance is €26,076.

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 $2 * €260,677$

Table 44. Parameters old age allowance

	2006	2007	2008	2009	2010	2011
Debts ignored	2,700	2,800	2,800	2,900	2,900	2,900
General t.f.a.	19,698	20,014	20,315	20,661	20,661	20,785
t.f.a. children	2,631	2,674	2,715	2,762	2,762	2,779
Old age allowance:						
Asset limit	260,677	264,848	268,821	273,391	273,391	275,032
Income limit	18,539	18,836	19,119	19,445	19,445	19,562
Lower limit	13,326	13,540	13,744	13,978	13,978	14,062
Allowance1	13,038	13,247	13,446	13,675	13,675	13,758
Allowance2	26,076	26,494	26,892	27,350	27,350	27,516

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 €1,990 per year or €165.83 per month (*amount1*). For persons aged 65 or more, the general tax credit is €48 per year (€9.75 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.

From 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 1st January 1972 or has a child living at home who was younger than 6 years at 31st December 2008.

- b) work credit (*tintcee_s*)

Tax credit on income from work (*il_taxable_work*) (including self-employment income): normally, at most €1,357 per year (65+: €98 per year).

The work credit amounts to 1.795% (*rate1*) on the first €8,132 (*band1*) of income from work plus 12.421% (*rate2*) of the remainder; the maximum amount being €1,357 (*up_lt*). Income from work (*il_taxable_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 2006 are included in the following table.

Table 45. Work credit 2006

Age	rate2	up_lt
57, 58, 59	14.954%	1,604
60, 61	17.467%	1,849
62, 63, 64	19.990%	2,095

For persons aged 65 or over, the work credit is 0.854% on the first €8,132 of income from work plus 9.512% of the remainder, with a maximum of €98.

For budgetary reasons, in 2009 for persons with income from work higher than €42,509, the work credit was 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 ($\min(x*(\text{income}-8,859), y)$).

Table 46. 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

c) child credit (*tintch_s*)

Presence of (at least one) child aged below 18 gives rise to child credit of max. $(0, 924 - .0575*(\max(0, (\text{total taxable income} - 28,521))))$ where total taxable income represents the taxable income of the parent and his/her fiscal partner. (65+: $\max(0, 441 - 0.02736*(\max(0, \text{total taxable income} - 28521)))$). Total taxable income is the sum of taxable income in Box 1, 2 and 3 net of all deductions (tax allowances) of both fiscal partners (*temp_TotalTaxableIncome*).

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

As of 2008, the child credit was replaced by an income related child allowance (see section 2.4.8), the main difference being that the allowance was also payable in the case of low or zero income. The allowance amounted to $994 - 0.0575*(\text{income} - 29,413)$ where ‘income’ is made up by the taxable income of the tax payer and his/her allowance partner. As of 2009, the child allowance was renamed child related budget, and the amount was differentiated by the number of children for whom there was entitlement to child benefit.

d) supplementary child credit

In 2006, the supplementary child credit was no longer in force.

e) combination credit (*tintch00_s*)

Individuals under pension age with children under 12 years old ($dag < 12$) and (earnings from paid employment (*yem*) greater than €4405 (*le_inc1_lt*) per year or self-employment income (*yse*) greater than zero are entitled to a combination credit of €146 (*amount1*). Persons over 65 are entitled to €70 per year. Both working spouses can receive combination credit. See work credit for definition of earnings from paid employment (excluding self-employment income).

f) supplementary combination credit (*tintch00_s*)

A recipient of combination credit with no fiscal partner or with earnings from employment lower than fiscal partner is entitled to a supplementary combination credit of €608 per year. People over 65 are entitled to €290 per year. If both fiscal partners have equal earnings, only the senior partner may be entitled to the supplementary combination credit.



g) income related combination credit (*tintcch00_s*) (from 2009)

As of 2009, the combination credit and the 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. For 65+, the amount is €360 + 0.0177*(income – 4,619) with a maximum of €823 per year.

h) single parent credit (*tintclp_s*)

A single tax payer who:

- was unmarried or lived separated for more than six months in 2006.
- lived in a household with only his own children (including step-children, foster-children) who were all younger than 27 on 31st December 2005.
- contributed to an important extent (at least €386 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 2006 amounts to €1,414 (*amount1*) per year for under 65 and €674 per year for over 65.

A single parent of a dependent child who receives family benefit and is under 65 is entitled to receive a tax credit of €1,414 per year (2006). If he/she is over 65 they receive a tax credit of €674 per year (2006).

The assessment unit used in EUROMOD is *tu_SingleParent_nl* which includes lone parents with children younger than 27 on 31 Dec 2005. However, as the entitlement to this credit is linked to family benefit (*bfa*) receipt, in practice children here are maximum 18.

i) 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 31/12/2005.
- had income from work outside the household.

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

4.3% (*rate1*) of (taxable) income from work (*lp_tfa_Y*) outside the household (including income from employer provided car). The supplementary single parent credit is not higher than €1,414 (*up_lt*) per year (65+: 2.05% with a maximum €674) (*tfa_LP12_max*). Income from work: see work credit.

j) old age credit (*tintcpe_s*)

Tax payers aged 65 or over (*age_thresh*) on 31/12/2006 are entitled to an additional tax credit: €374 (*ded_low_inc*) per year if total taxable income ('verzamelinkomen') from Box 1, 2 and 3 net of all deductions is lower than €31256 per year (*inc_threshold*).

k) supplementary old age credit (from 2006: old age credit single persons) (*tintcpe_s*)

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 (supplementary) old age credit for single persons of €62 (*sing_ded_low_inc*) per year next to the old age credit.



Table 47. Parameters tax credits

	2006	2007	2008	2009	2010	2011
general tax credit	1,990	2,043	2,074	2,007	1,987	1,987
65+	948	957	970	935	925	910
work credit:						
rate1	1.795%	1.781%	1.758%	1.738%	1.737%	
band1	8,132	8,312	8,587	8,859	9,041	
rate2	12.421%	12.354%	12.43%	12.381%	11.888%	
uplt	1,357	1,392	1,443	1,504	1,489	
rate2 57	14.954%	14.836%	14.874%	14.747%	14.235%	
uplt 57	1,604	1,642	1,697	1,726	1,752	
rate2 60	17.467%	17.299%	17.298%	17.095%	16.555%	
uplt 60	1,849	1,890	1,949	2,018	2,012	
rate2 62	19.990%	19.762%	19.723%	19.442%	18.884%	
uplt 62	2,095	2,138	2,201	2,274	2,273	
reduction %				1.25%	1.25%	1.25%
max				24	56	
from				42,509	43,385	
Work credit 65+:						
rate1 65	0.854%	0.798%	0.834%	0.8126%	0.807%	
rate2 65	9.512%	9.25%	9.216%	9.054%	8.779%	
uplt 65	998	1,001	1,029	1,059	1,058	
reduction %				0.573%	0.581%	
max				11	26	
from				42,509	43,385	
Bonus on continuing				8,859	9,041	9,209
Work: thresholds				54,775	55,831	56,280
Rate 62				5%	5%	5%
Max 62				2,296	2,340	2,354
Rate 63				7%	7%	7%
Max 63				3,215	3,276	3,295
Rate 64				10%	10%	10%
Max 64				4,592	4,679	4,708
Rate 65, 66				2%	2%	2%
Max 65, 66				919	936	942
Rate 67+				1%	1%	1%
Max 67+				460	468	471
Child credit						
Maximum	924	939				
Withdraw rate	5.75%	5.75%				
Withdraw start	28,521	28,978				
65+ max	441	440				
65+ withdraw rate	2.736%	2.691%				
Combination credit						
Earnings threshold	4405	4475	4542	4619	4706	4734
Amount	146	149	112			
Amount 65+	70	71	54			

Conintued...



	2006	2007	2008	2009	2010	2011
Suppl. Comb. Cr.						
Amount	608	700	746			
Amount 65+	290	329	350			
From 2009:						
minimum				770	775	780
Rate				3.8%	3.8%	3.8%
Maximum				1,765	1,859	1,871
Max inc				30,800	33,233	33,444
Rate 65+				1.77%	1.77%	1.738%
Max 65+				823	865	857
Single parent credit						
Amount	1,411	1,437	1,459	902	945	931
Suppl. Rate	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%
Max	1,411	1,437	1,459	1,484	1,513	1,523
65+ amount	674	673	683	421	440	427
65+ suppl. Rate	2.05%	2.01%	2.01%	2.00%	2.0%	1.97%
65+ max	675	673	683	692	705	698
Old age credit						
threshold	374	380	486	661	684	739
supplement	31,256	31,757	32,234	34,282	34,649	34,857
	562	571	555	410	418	421

As mentioned earlier, tax credits are not transferable between spouses and the amount of income tax and peoples' insurance contributions paid can never 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.

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 €185 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 €645 per year



c) parental leave credit

As of 2006, 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) temporary increase of the general tax credit

To mitigate the effect of the new tax system (2001) for persons with low incomes who did not pay income tax in the old system, the general tax credit was increased. This increase was gradually phased out during the next five years and was no longer in force in 2006.

e) 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.

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. The data consist of register data, supplemented by telephone interviews (CATI).

Table 48. EUROMOD database description

EUROMOD database	
Original name	EU-SILC UDB
Provider	Eurostat
Year of collection	2008
Period of collection	June-October
Income reference period	2007
Sampling	stratified multi-stage sampling of addresses
Unit of assessment	Households / persons
Coverage	Private households
Sample size	10337 hh
Response rate	81%



3.2 Sample quality and weights

3.2.1 Non-response

Statistics Netherlands (2010) reports that 10337 interviews were accepted from a total number of 12,745 valid addresses selected, which amounts to a response rate of 81%.

3.2.2 Weights

Statistics Netherlands (2010) reports that the 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.

Table 49. Descriptive Statistics of the Grossing-up weight

Number	25,275
Mean	1,128.973
Median	700.58
Maximum	29,593.74
Minimum	15.64
Max/Min	1892.6
Decile 1	379.21
Decile 9	2011.23
Dec 9 / Dec1	5.304

3.2.3 Item non-response and under-reporting

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.

3.3 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 (173 children) have been dropped from the sample. The final sample includes 25,275 individuals in 10,337 households.

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



3.4 Imputations and assumptions

3.4.1 Time period

The EU-SILC information on demographic variables mainly refers to the time of data collection (June-October 2008). However, some information also indicates the status quo at the end of the income reference period (2007). 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 2007, 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.

3.4.2 Gross incomes

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

3.4.3 Other imputed 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.

3.5 Updating

The factors that are used to update monetary variables from 2007 to 2010 are shown in Table 50 below. No other updating adjustments are employed. Thus the distribution of characteristics (such as employment status and demographic variables) and the distribution of each income source that is not simulated remain as they were in 2007.



Table 50. Updating factors

Index	Income Source/index type	2007-2008	2007-2009	2007-2010
<i>default</i>	Annual average inflation	1.022	1.032	1.042
<i>yem</i>	INCOME : Employment	1.033	1.060	1.074
<i>yfb</i>	INCOME : Fringe Benefits			
<i>iyi</i>	INCOME : Investment	0.970		
<i>ypr</i>	INCOME : Property	0.989		
<i>ypt</i>	INCOME : Private Transfers	1.022	1.062	1.087
<i>yse</i>	INCOME : Self Employment	0.977		
<i>bed</i>	BENEFIT/PENSION : Education	1.012	1.028	1.054
<i>bfa</i>	BENEFIT/PENSION : Family	1.015	1.040	1.040
<i>bho</i>	BENEFIT/PENSION : Housing	-	-	-
<i>bsa</i>	BENEFIT/PENSION : Social Assistance			
<i>bun</i>	BENEFIT/PENSION : Unemployment	1.026	1.062	1.082
<i>pdi</i>	BENEFIT/PENSION : Disability	1.026	1.062	1.082
<i>phl</i>	BENEFIT/PENSION : Health	see yem		
<i>poa00</i>	BENEFIT/PENSION : State pension	1.028	1.047	1.064
<i>psu</i>	BENEFIT/PENSION : Survivors	1.024	1.053	1.070
<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, bed: www.overheid.nl,

4. VALIDATION

4.1 Aggregate Validation

4.1.1 Non simulated incomes

Table 51 shows that the number of persons receiving employment income according to EUROMOD (EU-SILC) comes quite close to that of Statistics Netherlands. The total amount of employment income exceeds that of Statistics Netherlands by about 3%. However, it is not clear that this statistic matches the EUROMOD definition. Alternative statistics on employment income from Statistics Netherlands are somewhat closer to the EUROMOD number.

The number of persons with self-employment income exceeds in 2007 the official statistics for 2005 by 38% whilst the EUROMOD amounts are 2% below the official figures for 2007. Both measurement problems and discrepancies with regards to the definitions used will affect these comparisons. The amount of investment income in EUROMOD also shows quite a large deviation from the official statistics, with similar underlying causes.

The EUROMOD figures on disability benefits and occupational pensions approximate the official statistics fairly well. 'Other social assistance' shows a somewhat larger deviation, both in terms of recipients and in terms of amounts. It should be noted that an imputation procedure



was used to compute the EU-SILC variable involved (as a component of HY060: social exclusion not elsewhere classified).

Table 51. EUROMOD validation: income sources and taxes and benefits included but not simulated, 2007

	Recipients/Payers (1000)			Expenditure/Revenue (10 ⁹ euro)		
	EUROMOD (EU-SILC)	Statistics Netherlands	Ratio EU-SILC/ StatNeth	EUROMOD (EU-SILC)	Statistics Netherlands	Ratio EU-SILC/ StatNeth
Employment income	8,180	7,860 ^[a]	1.04	227.5	220.2 ^[c] 223.5 ^[d]	1.03 1.02
Self Employment income	1,203	870 ^[a]	1.38	26.2	26.7	0.98
Investment income	6,005 ^[b]	5,581 ^[b]	1.08	14.8	17.7	0.84
Disability benefits	601	650 ^[a]	0.92	7.9	8.4	0.94
Occupational pensions	2,488	2,360 ^[a]	1.05	33.6	32.0	1.05
Other social assistance	287	256 ^[e]	1.12	2.5	2.4 ^[e]	1.04

Notes: ^[a] 2005-values; ^[b] number of recipient households

Sources: Statistics Netherlands (statline.cbs.nl); ^[c] National accounts (statline.cbs.nl) ^[d] Income panel survey (statline.cbs.nl) ^[e] 1. Department of Social Affairs and Employment, 2. UWV

Broadly speaking, Table 51.a to Table 51.c (with figures for 2008 to 2010) present a similar picture to Table 51. Notably, the number of recipients in EUROMOD does not change, while for a number of components no more recent figures on recipients than 2005 could be obtained from Statistics Netherlands. The changes in the amounts in EUROMOD result from the uprating factors used. In particular for self-employment income and investment income these uprating factors are subject to doubt where for 2008 we apply component specific uprating factors and for 2009 and 2010 we cannot.

Table 51.a. EUROMOD validation: income sources and taxes and benefits included but not simulated, 2008

	Recipients/Payers (1000)			Expenditure/Revenue (10 ⁹ euro)		
	EUROMOD (EU-SILC)	Statistics Netherlands	Ratio EU-SILC/ StatNeth	EUROMOD (EU-SILC)	Statistics Netherlands	Ratio EU-SILC/ StatNeth
Employment income	8,180			235.0	230.6 ^[c] 233.7 ^[d]	1.02 1.01
Self Employment income	1,203			25.7	28.9	0.89
Investment income	6,005 ^[b]	5,642 ^[b]		14.4	13.5	1.07
Disability benefits	601			8.1	8.6	0.94
Occupational pensions	2,488			34.3	34.0	1.01
Other social assistance	287			2.5	2.6 ^[e]	0.96



Notes: Statistics on numbers of recipient individuals later than 2005 not available; ^[b] number of recipient households

Sources: see Table 51

Table 51.b. EUROMOD validation: income sources and taxes and benefits included but not simulated, 2009

	Recipients/Payers (1000)			Expenditure/Revenue (10 ⁹ euro)		
	EUROMOD (EU-SILC)	Statistics Netherlands	Ratio EU-SILC/ StatNeth	EUROMOD (EU-SILC)	Statistics Netherlands	Ratio EU-SILC/ StatNeth
Employment income	8,180			241.1	233.2 ^[c] 237.6 ^[d]	1.03 1.01
Self Employment income	1,203			25.9	25.1	1.03
Investment income	6,005 ^[b]	5,827 ^[b]		14.5	13.2	1.09
Disability benefits	601			8.4	9.0	0.93
Occupational pensions	2,488			34.7	35.0	0.99
Other social assistance	287			2.6	2.9 ^[e]	0.88

Notes: Statistics on numbers of recipient individuals later than 2005 not available; ^[b] number of recipient households

Sources: see Table 51

Table 51.c. EUROMOD validation: income sources and taxes and benefits included but not simulated, 2010

	Recipients/Payers (1000)			Expenditure/Revenue (10 ⁹ euro)		
	EUROMOD (EU-SILC)	Statistics Netherlands	Ratio EU-SILC/ StatNeth	EUROMOD (EU-SILC)	Statistics Netherlands (2009)	Ratio EU-SILC/ StatNeth
Employment income	8,180			244.3	233.2 ^[c] 237.6 ^[d]	1.05 1.03
Self Employment income	1,203			26.2	25.1	1.04
Investment income	6,005 ^[b]			14.7	13.2	1.11
Disability benefits	601			8.6	9.0	0.96
Occupational pensions	2,488			35.0	35.0	1.00
Other social assistance	287			2.6	2.9 ^[e]	0.90

Notes: Statistics on numbers of recipient individuals later than 2005 not available. External statistics expenditure/revenue: 2009; ^[b] number of recipient households

Sources: see Table 51



4.1.2 Simulated tax and benefits

Table 52 shows that EUROMOD simulates the State Pension reasonably well, both in terms of numbers of recipients and in terms of amounts. The total amount is somewhat overestimated, which may be caused by the fact that EUROMOD cannot take into account that persons who have resided abroad between age 15 and age 65 are entitled to reduced amounts of State Pension. The survivor benefit is captured less well. In the original EU-SILC data the recipients of the survivor benefits are already underrepresented and this underrepresentation increases in the simulations, possibly because EUROMOD does not model entitlement to a more generous survivor benefit of persons who were widowed before the recent changes in the laws in question. The simulated amounts and numbers of recipients of child benefits are quite close to the actual amounts.

Table 52. EUROMOD validation: taxes and benefits simulated, 2007

	Recipients/Payers (1000)				Expenditure/Revenue (10 ⁹ euro)			
	EUROMOD		Ext source	Ratio Simulated/Ext source	EUROMOD		Ext source	Ratio Simulated/Ext source
	Simulated	Original data			Simulated	Original data		
State pension	2,289	2,288	2,242	1.02	24.08	23.35	22.75	1.06
Survivor benefit	90	86	123	0.73	1.01	0.90	1.34	0.75
Child benefit	1,873	1,925	1,930	0.97	3.31	3.37	3.35	0.99
Social assistance	433	257	305	1.42	3.07	2.72	3.94	0.78
Unemployment benefit	456	460	192	2.38	3.45	3.54	3.09	1.12
Housing benefit	1,008	1,406	1,089	0.93	1.76	2.01	2.29	0.77
Care allowance	4,715	-	5,010	0.94	2.21	-	2.93	0.75
Income tax	11,530	-	-		47.44	-	43.37	1.10
Peoples insurance contributions	11,482	-	-		36.22	-	32.05	1.13
Health insurance contributions	12,967	-	12,597	1.03	28.85	-	27.69	1.04
Employees ins. contr. (employee + employer c)	8,080	-	-		21.46	-	18.24 21.79	1.18 0.98

Notes: State pension figures exclude institutional hh, and persons living abroad

Sources: statline.cbs.nl, www.uwv.nl, www.svb.nl, Jaarverslag Ministerie van Sociale Zaken en Werkgelegenheid (annual report department of social affairs and unemployment), Beheersverslag belastingdienst (control report tax service)

The simulated numbers of recipients and amounts of social assistance received deviate considerably from the figures from Statistics Netherlands. Moreover, the numbers of recipients exceed the official statistics whilst the amounts are lower than the official figures. The contributing factors for these differences include the fact that EUROMOD counts the number of individual recipients whilst the official statistics are in benefit units, the fact that non take-up is likely, in particular in the case of very small entitlements, and the fact that in EU-SILC, social assistance is included in the variable *hy060g*: “social exclusion not elsewhere classified”, which implies that its imputation as a separate component suffers from inaccuracies. Furthermore, EUROMOD may miss households that are entitled to social assistance for a short period, because it essentially bases its calculations on the annual income.

The number of recipients of unemployment benefits in EUROMOD and EU-SILC exceeds the official statistics, probably to a large extent because the official statistics count the number of recipients at a particular point in time as opposed to EU-SILC and EUROMOD where the total



number of recipients in the reference year is counted. Notably, the simulated unemployment benefit in EUROMOD approximates the original unemployment benefit.

The EUROMOD numbers of recipients of housing benefit and care allowance are less than 8% below the official figures. However, the amounts are more than 20% lower than the official figures. Since both benefits are targeted toward the lower strata of the income distribution, this suggests that the lowest incomes are underrepresented in EUROMOD/EU-SILC. This is likely because EUROMOD assumes 100% take-up, whilst specifically the housing benefit is known to be affected by a substantial extent of non-take-up, particularly for potential recipients where the entitlement is only a small amount.

One additional factor explaining the difference between the number of housing benefit recipients according to EUROMOD and the original EU-SILC data is the fact that a number of recipients of housing benefit in EU-SILC report housing costs which by far exceed the rent amounts which give rise to entitlement to housing benefit.

The finding that low incomes are somewhat underrepresented in EUROMOD is also confirmed by the fact that the simulated income tax and peoples insurance contributions exceed the official figures (by 10% and 13%, respectively). Interestingly, the health insurance contributions exceed the official figures by only 4%, probably because a substantial part of these contributions consists of flat-rate insurance premiums.

Notably, the comparison with ‘official figures’ is hampered by the fact that figures from different sources contradict each other. Usually, the deviations are small but in some cases, the gaps between various sources are considerable. A case in point concerns the social insurance contributions for unemployment and disability insurance where the difference between the 2006 amounts published by the tax service and the amounts published by Statistics Netherlands amounts to almost 20%. Unfortunately it is beyond the scope of the EUROMOD project to get to the bottom of these discrepancies. Usually we use the first figure that we have found as our ‘official figure’ although in some cases we use the figure from an alternative source if there are compelling reasons to do so.

Table 52.a. EUROMOD validation: taxes and benefits simulated, 2008

	Recipients/Payers (1000)			Expenditure/Revenue (10 ⁹ euro)		
	EUROMOD	External source	Ratio Simulated/Ext source	EUROMOD	External source	Ratio Simulated/Ext source
State pension	2,289	2,289	1.00	24.78	23.93	1.04
Survivor benefit	90	115	0.78	1.03	1.29	0.80
Child benefit	1,873	1,920	0.98	3.33	3.39	0.98
Social assistance	440	292	1.51	3.15	3.86	0.82
Unemployment benefit	456	171	2.67	3.54	2.72	1.30
Housing benefit	1,036	1,093	0.95	2.19	2.41	0.91
Care allowance	5,181	5,053	1.03	3.01	3.68	0.82
Income tax	11,438			50.08	44.11	1.14
Peoples insurance contributions	11,385			37.46	34.91	1.07
Health insurance contributions	12,967	12,663	1.02	30.47	32.32	0.94
Employee’s ins. contr.	8,080			22.29	18.25 22.75	1.22 0.98



Notes:

Sources: see Table 52

To a large extent, the figures for 2008 to 2010 (Table 52.a to Table 52.c) confirm the picture of 2007. The number of recipients and the amounts of unemployment benefits varied quite a lot in this period, but this is not taken into account in EUROMOD. Notably, the increase in the amount of income tax as simulated by EUROMOD between 2007 and 2010 is slower than the actual increase in this period.

Table 52.b. EUROMOD validation: taxes and benefits simulated, 2009

	Recipients/Payers (1000)			Expenditure/Revenue (10 ⁹ euro)		
	EUROMOD	External source	Ratio Simulated/ Ext source	EUROMOD	External source	Ratio Simulated/ Ext source
State pension	2,289	2,414	0.95	25.86	25.59	1.01
Survivor benefit	90	106	0.85	1.07	1.22	0.88
Child benefit	1,873	1,930	0.97	3.39	3.40	1.00
Social assistance	489	317	1.54	3.32	3.86	0.86
Unemployment benefit	456	309	1.48	3.66	4.24	0.86
Housing benefit	1,056	1,098	0.96	2.26	2.47	0.91
Care allowance	5,274	5,041	1.05	3.48	4.07	0.86
Income tax	11,572			52.99	49.00	1.08
Peoples insurance contributions	11,548			39.75	34.63	1.15
Health insurance contributions	12,967	12,762	1.02	30.40	34.20	0.89
Employee's ins. contr. (employee + employer c)	8,080			18.76	16.08 19.49	1.17 0.96

Notes:

Sources: see Table 52



Table 52.c. EUROMOD validation: taxes and benefits simulated, 2010

	Recipients/Payers (1000)			Expenditure/Revenue (10 ⁹ euro)		
	EUROMOD	External source	Ratio Simulated/Ext source	EUROMOD	External source	Ratio Simulated/Ext source
State pension	2,289	2,414	0.95	26.20	26.27 ^[a]	1.00
Survivor benefit	90	98	0.92	1.09	1.14	0.96
Child benefit	1,874	1,928	0.97	3.36	3.37	1.00
Social assistance	489	345	1.42	3.38	4.06 ^[b]	0.83
Unemployment benefit	456	309	1.48	3.73	4.24 ^[c]	0.88
Housing benefit	1,065	1,124	0.95	2.30	2.68	0.86
Care allowance	5,406	5,219	1.04	3.73	4.58	0.81
Income tax	11,590			53.56	53.09	1.01
Peoples insurance contributions	11,568			41.11	36.45	1.13
Health insurance contributions	12,967	13,064 ^[d]	0.99	31.66	35.42	0.89
Employee's ins. contr. (employee + employer c)	8,080			19.67	16.69 19.49	1.18 1.01

Notes: ^[a]2010 statistic based on assumption that fraction of total state pension received by institutional households remained constant since 2009; ^[b]Definition 2010 deviates slightly: includes separate social assistance for older unemployed/disabled ioaw/ioaz; ^[c]2009 figure; ^[d]Number of persons 18+
Sources: see Table 52

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 scale are: first adult=1; additional people aged 14+ = 0.5; additional people aged under 14 = 0.3.

4.2.1 Poverty

Table 53 presents the poverty rates using 40%, 50%, 60% and 70% of median equivalent income as the poverty line. It compares males and females and compares with external statistics and with the poverty rates using household disposable income as available from EU-SILC. Interestingly, in comparison to the original EU-SILC figures, EUROMOD produces slightly lower poverty rates when the poverty lines are drawn at 40% and 50% of the median, but slightly higher poverty rates for the poverty line at 70% of the median. The figures from Statistics Netherland (which do not cover the entire population of households and may use a different definition of equivalised disposable income) are quite close to the EUROMOD results. Especially for the high poverty cut-offs, the EUROMOD figures are somewhat higher, though. The difference between men and women is highest for the high poverty cut-offs, and confirmed by the external source as well as the original EU-SILC figures.



Table 53. EUROMOD validation: poverty rates at different poverty lines, 2007

Percentage of individuals below:	EUROMOD	Ext source	Original Database
40% of median equivalent income	2.3%	2.1%	2.9%
males	2.3%	2.1%	2.8%
females	2.3%	2.2%	3.0%
50% of median equivalent income	4.5%	4.2%	5.1%
males	4.3%	4.2%	4.8%
females	4.7%	4.3%	5.4%
60% of median equivalent income	10.9%	9.4%	10.5%
males	10.7%	8.9%	10.5%
females	11.2%	9.9%	10.6%
70% of median equivalent income	19.7%	17.9%	18.4%
males	18.5%	16.3%	17.3%
females	20.9%	19.5%	19.6%

Notes: 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.

Sources: Ext. Source: statline.cbs.nl, population excludes households without a full year income and households with a main breadwinner dependent on a state student scholarship. The definition of HDI may also deviate from EUROMOD/SILC

Table 54 presents the poverty rates for the years 2008 – 2010. Here, EUROMOD suggests that the poverty rates are the lowest in 2008, whilst the figures from Statistics Netherlands (up to 2009) suggest that they were the lowest in 2007. Obviously, the EUROMOD results may be affected by the fact that no account is taken of structural changes between the reference year and the later years.

Table 54. EUROMOD validation: poverty rates at different poverty lines, 2008-2010

Percentage of individuals below:	2008		2009		2010	
	EUROMOD	Ext source	EUROMOD	Ext source	EUROMOD	Ext source (2009)
40% of median equivalent income	2.2%	2.2%	2.2%	2.5%	2.2%	2.5%
males	2.1%	2.2%	2.1%	2.5%	2.1%	2.5%
females	2.2%	2.3%	2.2%	2.5%	2.2%	2.5%
50% of median equivalent income	4.0%	4.4%	4.0%	4.8%	3.9%	4.8%
males	3.9%	4.3%	4.0%	4.8%	3.9%	4.8%
females	4.1%	4.5%	4.1%	4.9%	4.0%	4.9%
60% of median equivalent income	10.3%	9.7%	10.7%	10.1%	10.6%	10.1%
males	10.2%	9.1%	10.6%	9.6%	10.5%	9.6%
females	10.5%	10.4%	10.8%	10.5%	10.7%	10.5%
70% of median equivalent income	18.6%	18.0%	18.7%	18.2%	18.7%	18.2%
males	17.5%	16.4%	17.6%	16.9%	17.6%	16.9%
females	19.6%	19.5%	19.8%	19.6%	19.8%	19.6%



Notes: 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.

Sources: See Table 53

Table 55 presents the poverty rates using the 60% cut-off differentiated by age group. The comparison with the external source is affected by the fact that student households are excluded and that different age groups are used. Interestingly, the poverty rates for children appear to be similar whilst the EUROMOD poverty rates for the elderly are higher than those of Statistics Netherlands. It is not quite clear how this difference can be explained. One contributing factor may be that relatively many elderly find themselves in the lower strata of the income distribution. As a result, the poverty incidence among elderly will be quite sensitive to the exact level of the poverty threshold.

Table 55. EUROMOD validation: poverty rates by age groups, 2007

Percentage of individuals below: 60% of median equivalent income	EUROMOD	Ext source	Original Database
Population			
0-17	14.1	14.1	12.8%
18-24	21.6	8.7	19.8%
25-49	9.5	9.9	9.3%
50-64	7.9	7.5	7.0%
65+	7.6	6.7	9.6%

Notes: 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 external source (see Table 53) uses age groups 0-15, 15-25, 25-45, 45-65, 65-.

Sources: see Table 53

Table 56 presents the poverty rates by age for the years 2008-2010. Here we find that according to EUROMOD, on balance, in the younger age groups the poverty rates are fairly stable, whilst the poverty rate among the elderly decreases from 7.6% in 2007 to 5.6% in 2010.

Table 56. EUROMOD validation: poverty rates by age groups, 2008-2010

Percentage of individuals below: 60% of median equivalent income	2008		2009		2010	
	EUROMOD	Ext source	EUROMOD	Ext source	EUROMOD	Ext source (2009)
Population						
0-17	13.4	14.5	14.2	15.0	14.5	15.0
18-24	21.3	9.0	21.5	10.3	21.3	10.3
25-49	8.8	10.2	9.3	11.0	9.2	11.0
50-64	7.5	8.0	7.8	8.6	7.8	8.6
65+	7.1	7.0	6.1	5.4	5.6	5.4

Notes: 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.

Sources: see Table 53



4.2.2 Income inequality

Similar to poverty, according to EUROMOD, inequality does not differ substantially from the original EU-SILC, nor does it differ very much from figures presented by Statistics Netherlands (Table 57). In fact, except in the lowest decile, the average equivalised disposable income is surprisingly close to the official figures, despite the fact that population as well as income definition may differ. The higher level of income in the lowest decile in comparison to the original database suggests that the level of social protection as simulated by EUROMOD is not quite achieved in reality. This is confirmed by the result that the Gini and the S80-S20 ratio according to EUROMOD are also somewhat below the official figures.

Interestingly, according to Table 58, inequality shows a slight decline in the period 2007-2010. To a large extent, this may not be due to changes over the years in the tax-benefit system but to the differential uprating factors used for the various income components. In particular, investment income is higher in 2007 than in other years, and this may be one of the causes of the high level of income inequality found in that year.

Table 57. EUROMOD validation: income inequality, 2007

	EUROMOD	Ext source	Original Database
Gini Coefficient	0.272	0.290	0.277
Income quintile ratio (S80/S20)	3.85	4.35	4.02
average income per decile (equivalised)			
1	719	570	647
2	1,054	1,083	1,072
3	1,217	1,254	1,238
4	1,374	1,406	1,390
5	1,535	1,558	1,547
6	1,711	1,748	1,716
7	1,913	1,957	1,908
8	2,171	2,223	2,161
9	2,587	2,641	2,585
10	4,239	4,560	4,330
Mean income (unequivalised)	3,401		3,418
Mean income (equivalised)	1,852	1,900	1,859
Median income (equivalised)	1,623	1,650	1,630

Notes: 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.

Sources: see Table 53



Table 58. EUROMOD validation: income inequality, 2008-2010

	2008		2009		2010	
	EUROMOD	Ext source	EUROMOD	Ext source	EUROMOD	Ext source 2009
Gini Coefficient	0.266	0.282	0.264	0.281	0.264	0.281
Income quintile ratio (S80/S20)	3.74	4.28	3.72	4.30	3.71	4.30
Average income per decile (equivalised)						
1	754	580	777	566	787	566
2	1,100	1,102	1,129	1,112	1,136	1,112
3	1,265	1,295	1,307	1,307	1,318	1,307
4	1,419	1,450	1,464	1,463	1,476	1,463
5	1,579	1,624	1,627	1,638	1,640	1,638
6	1,757	1,798	1,813	1,833	1,828	1,833
7	1,963	2,030	2,028	2,048	2,045	2,048
8	2,224	2,301	2,297	2,340	2,316	2,340
9	2,643	2,726	2,725	2,769	2,747	2,769
10	4,280	4,427	4,368	4,407	4,403	4,407
Mean income (unequalised)	3,484		3,582		3,612	
Mean income (equalised)	1,898	1,933	1,953	1,950	1,970	1,950
Median income (equalised)	1,665	1,700	1,717	1,725	1,730	1,725

Notes: Computed for individuals according to their household disposable income (HDI) equalised 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.

Sources: see Table 53

4.2.3 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 59 compares the 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 9% higher when the minimum wage option is not switched on, and poverty is about 5% 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 hourly wage. Finally, hourly wages are updated 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.

Table 59. EUROMOD validation: Minimum wage

	Baseline (I)				Minimum wage included (II)				Ratio (I/II)			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Disposable income (total)	247.1	253.4	260.9	263.2	248.3	254.6	262.2	264.5	1.00	1.00	1.00	1.00
Employment income (total)	227.5	235.0	241.1	244.3	229.5	237.0	243.2	246.5	0.99	0.99	0.99	0.99
Income tax (total)	47.4	50.1	53.0	53.6	47.6	50.3	53.2	53.7	1.00	1.00	1.00	1.00
Peoples' insurance SICs (total)	36.2	37.5	39.8	41.1	36.5	37.8	40.1	41.4	0.99	0.99	0.99	0.99
Gen. Social assistance (total)	3.07	3.15	3.32	3.38	2.81	2.89	3.05	3.11	1.09	1.09	1.09	1.09
Gini (Eq HDI)	.272	.266	.264	.264	.270	.264	.262	.262	1.01	1.01	1.01	1.01
Poverty rate (60% of median)	10.9	10.3	10.7	10.6	10.3	9.8	10.3	10.1	1.06	1.05	1.04	1.05

Notes: Amounts in 10⁹ euro

4.3 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 (2007) 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. In particular deductions for health care costs were readily available up to 2008 and all but abolished in 2009.
- 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.

5. REFERENCES

Eurostat (2010, 2011): <http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/themes>

OECD (2007, 2008, 2009) *OECD in Figures* (2007, 2008, 2009), OECD Publications, Paris.

OECD (2010), *OECD Factbook* (2010), OECD Publications, Paris.

OECD (2011): www.oecd.org

Statistics Netherlands (2010), “Final Quality Report EU-SILC 2008 The Netherlands”, Division of Social and Spatial Statistics, Heerlen.

- *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; www.st-ab.nl; www.svb.nl; www.uwv.nl;

In English: www.svb.nl

- *Sources for external statistics*

Statistics Netherlands: statline.cbs.nl, tax service: www.belastingdienst.nl, benefit agencies: www.uwv.nl, www.svb.nl; department of social affairs and employment: www.rijksoverheid.nl.