

EUROMOD

COUNTRY REPORT



SLOVAK REPUBLIC (SK)

2009-2013

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4/2014



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 Slovakia. This work was carried out by the EUROMOD core developer team, based mainly in ISER at the University of Essex, in collaboration with a national team.

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

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

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.

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

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1. BASIC INFORMATION

1.1 Basic information about the tax-benefit system

- The tax-benefit system is largely a unified, national system. All important tax components and benefits are governed at the central level. Share of personal income tax on self-employment is contributed to municipalities and administration units. A few taxes are set at the local level, such as real estate tax, motor vehicle tax and tax on specific services, but their share in overall taxation is negligible.
- The fiscal year is January 1 – December 31.
- State pension age is 62 years for men and between 57 and 61 for women, depending on the number of children. Women's retirement age will rise until it unifies at 62 years for all women and men. The pension age will continue to rise with growth in life expectancy from 2017.
- Compulsory education starts at age 6 and continues for 10 years. The minimum school leaving age is 16. A child is considered to be dependent (for tax and benefit purposes) not only if he is under 16, but also if he is under 18 and has long term unfavourable health condition, or is under 26 and studying at an approved institution and has not yet finished post-secondary education or is under 26 and cannot study because of illness or injury.
- Lone parents are not socially protected for tax and benefit purposes. In case of long term unfavourable health conditions of the person or child in the custody, duration of some benefits is extended.
- Taxation of income is based on an individual level. However, an individual may be entitled to a spouse tax allowance if the spouse satisfies certain conditions.
- Incomes from dependent activity and self-employment are taxed at rates 19% and 23%, depending on the amount of incomes. Before 2013, the rate was set at uniform level (19%). Incomes that fall under the withholding tax are taxed at flat rate of 19%.
- Tax advances are paid monthly or quarterly based on the previous tax liability. The taxpayer must fill in a tax return and pay any tax liabilities left after the tax clearing by the 31st March of the following year.
- The Minimum Subsistence Level on which the tax allowances and social benefits eligibility depend, is adjusted automatically on 1st July either to the cost of living of low income families or the net income growth of low income families (most frequently the first is used). Components of the social assistance scheme and state social support benefits are adjusted by government regulation (usually on the 1st September). Pensions, already in payment, are automatically indexed on 1st January.
- Social assistance benefits are awarded on a monthly basis. The income base that is assessed refers to the income in the previous month.

1.2 Social Benefits

The Slovak benefit system is made up of three components, namely contributory benefits, social assistance benefits and state social support. Each component consists of several programs

- *Contributory benefits*

Old-age pension (*Starobný dôchodok*): Entitlement arises when an insured person reaches retirement age and she has contributed for at least 15 years. Three variables determine the amount of the old age pension paid from first pillar: length of career in years, average personal wage point (the individuals average lifetime position relatively to average wage) and current point value, which was set so that a person with 40 years of service and average personal wage

will receive a pension with 50% replacement rate. In order to keep the replacement rate stable, the current point value is annually indexed by average wage growth. Since 2005, there is fully funded second pillar. Participation into the 2nd pillar is voluntary.

Early old-age pension (*Predčasný starobný dôchodok*): A person is eligible if she has contributed for minimum 15 years, is no more than 2 years below the statutory retirement age and is entitled to a pension higher than 1.2 times the minimum subsistence level. It cannot be combined with old-age pension. The pension amount is lowered by 0.5% for every 30 days remaining until the person's retirement age.

Disability pension (*Invalidný dôchodok*): A person is defined as disabled if she has long term unfavourable health conditions with more than 40% work capability decrease. A person is not eligible during temporary work incapacity. The benefit amount depends on the number of accumulated pension points, number of years contributions have been made, number of years until reaching retirement age, current pension point value and percentage loss of working capability.

Widow's and widower's pension (*Vdovský a vdovecký dôchodok*): The entitlement arises to widow/ widower if his/hers deceased spouse was a recipient of, or entitled to old-age pension, early retirement pension or disability pension or dies as a result of an occupational disease or accident. The entitlement lasts for 1 year after the decease, unless the recipient takes care of a dependent child, is disabled (more than 70% loss of working capacity) or reaches the pensionable age. The entitlement expires if the widow/ widower becomes married. The benefit amounts to 60% of the old-age pension, early old-age pension or disability pension of the deceased.

Orphan's pension (*Sirotský dôchodok*): The entitlement arises to a dependent child whose parent (or person having custody of him) has died. The entitlement arises only if the parent was an old-age pension, early old-age pension or disability pension recipient (or entitled person). A dependent child in foster care cannot receive the pension. The benefit amounts to 40% of the old-age pension, early old-age pension or disability pension of the deceased parent.

Sickness cash benefit (*Nemocenské*): The benefit provides compensation for loss of income during temporary sickness. A person is eligible if she has contributed for at least 270 days during last two years. The entitlement arises due the illness or injury on the 11th day of work incapability and lasts until the end of work incapability or at least until the end of 52nd week. It cannot be combined with the maternity benefit. The benefit amount is 55% of the daily assessment base (gross income subject to sickness insurance contributions).

Benefit for nursing a sick relative (*Ošetrovné*): The entitlement arises on the first nursing day and expires on the last, but by the 10th nursing day at latest. It cannot be combined with maternity benefit. The amount is 55% of the daily assessment base (gross income subject to sickness insurance contributions).

Equalization allowance (*Vyrovňavacia dávka*): Equalization allowance is designed to compensate reduced income of a pregnant woman, who had to be moved to a different job position. The equalization allowance is 55% of the difference between the monthly assessment base before and after moving to another position.

Maternity benefit (*Materská dávka*): This benefit is paid to a pregnant woman or to a person who takes care of a newborn child. The person is eligible for the benefit if she contributed to the insurance system for at least 270 days within the last 2 years prior to the delivery. The benefit can start being paid 8 weeks before the delivery for a total of 34 weeks. However, the duration is extended to 37 weeks if the woman is a single mother and to 43 weeks if the woman gives birth to two or more children. The benefit is 65% of the daily assessment base (gross income subject to sickness insurance contributions).

Unemployment insurance benefit (*Dávka v nezamestnanosti*): An insured person is eligible to receive the benefit if she has contributed for a minimum of two years during the three years prior and she is listed in the unemployment registry. Entitlement ceases if the person reaches pensionable age, or if the person is de-listed from the unemployment registry. The maximum duration of the benefit is 6 months. Accumulation with sickness or maternity benefits, benefit for nursing a sick relative, child-raising allowance, or a pension is not permitted. The benefit is 50% of the daily assessment base (gross incomes subject to unemployment insurance contributions).

- *Social assistance benefits*

Material need benefits (*Dávka v hmotnej núdzi a príspevky k dávke*): Material needs benefits are means-tested benefits for families, whose income is below the minimum subsistence and cannot be increased by claimants themselves. The benefit consists of several components (social benefit, activation allowance, health care allowance, housing allowance, protection allowance). The amount depends on the structure and incomes of the family and is calculated as the difference between the eligible maximum material need benefits and the income of all assessed individuals.

- *State support benefits*

Child birth grant (*Príspevok pri narodení dieťaťa*): It is one-off payment to parents to cover the needs of their new-born. The only condition to this grant is permanent residency in the Slovak Republic (SR).

Additional birth grant (*Príplatok k príspevku pri narodení dieťaťa*): It is one-off benefit introduced in 2007 for each child that has been born as a result of a first childbearing. In 2009 the grant was extended for 2nd and 3th child.

Multiple birth grant (*Príspevok rodičom, ktorým sa súčasne narodili tri deti alebo viac detí alebo ktorým sa v priebehu dvoch rokov opakovane narodili dvojčatá*): The benefit is an annual allowance paid to parents with at least three children born at the same time or parents who have within two years repeatedly twins or more children born at the same time. The amount of benefit depends on the age of the children.

Child benefit (*Prídavok na dieťa*): It is a monthly social benefit aimed to support care of each dependent child. Only one parent is eligible. There is no conditionality to this grant other than permanent residency both of the entitled parent and the dependent child in the Slovak Republic.

Additional child benefit (*Príplatok k prídavku na dieťa*): It is a monthly benefit introduced in 2008. The entitlement arises if the caretaker of the child is not entitled to the tax credit for dependent children, does not work or is a recipient of pension (old-age, early old-age or disability).

Parental allowance (*Rodičovský príspevok*): A monthly benefit to contribute to parents taking care of at least one child aged up to 3 years (6 in the case of disabled child). Only one parent is eligible, and is allowed to work if the child is at grandparents or in kindergarten. It cannot be combined with sickness benefit and is reduced in case of maternity allowance receipt.

Funeral benefit (*Príspevok na pohreb*): One-off benefit that covers expenses on a burial of a family member.

Scholarships (*Štipendiá*): Monthly benefit for pupils and students in secondary schools from low-income families. The amount of benefit depends on average grade received. Scholarship for university students is granted annually for no longer than 11 months within a year. The amount depends on family income and rises if student is handicapped or lives far away from university.

- *Not strictly benefits*

Private pensions (*Dôchodky z tretieho piliera*): Private pensions are derived from supplementary pension insurance (SPI) also known as third pillar. SPI operates on the principle of regular mutual contributions of employers and employees and are valorised on the account of the insured, maintained by supplementary pension companies.

Alimony (*Výživné*): Every parent, regardless of their skills, capabilities and financial circumstances is obliged to fulfil its maintenance obligations to the minimum extent of 30% of the minimum subsistence level of the dependent child. Only courts can decide about the alimony eligibility.

Termination pay (*Odchodné*): Benefit provided by the employer based on the provisions of the Labour code in Slovakia. Upon the first termination of employment relationship upon acquiring entitlement to an old-age pension invalidity pension, or pension for years of service an employee is entitled to receive termination pay of at least the amount of his/her average monthly earnings.

Severance payments (*Odstupné*): Benefit provided by the employer based on the provisions of the Labour code in Slovakia. An employee is eligible to receive severance payments upon termination of employment (for reason stated in the Labour code). The amount of payments varies from one to five times of average monthly earnings according to years in service.

Educational allowances (*Štipendiá a granty*): Students may receive scholarships and educational grants paid by the university they attend. Rules determining eligibility and amounts are set by universities.

1.3 Social contributions

Social insurance contributions (*Sociálne odvody*): Social insurance contributions (SICs) finance pensions, and other contributory benefits (e.g. sickness and maternity). Conditions regarding contributions in the past determine eligibility and amount of contributory benefits. SICs cover seven types of insurances: old-age, disability, sickness, unemployment, and accident as well as guarantee and reserve solidarity fund. SICs are assessed on gross incomes up to a maximum. The calculation of assessment base for self-employed is slightly different.

Health insurance contributions (*Zdravotné odvody*): Health insurance contributions are compulsory for persons with permanent residence in Slovak republic. Government pays insurance for dependent children and persons who fulfil certain conditions. Contributions are assessed on gross income up to a maximum. The assessment base is calculated slightly differently for the self-employed. Others pay voluntary given minimum amount of contributions.

1.4 Taxes

Personal income tax (*Daň z príjmu fyzických osôb*): The base of the personal income tax covers income from dependent activity and self-employment as well as income from rent, fringe benefits, severance and termination payment. Social contributions and social benefits are exempted. It is applied at the individual level, but an individual may be entitled to a spouse tax allowance. There is basic tax allowance and two types of tax credits (for employees and on dependent children). The uniform flat-rate was abolished and since 2013 there are two rates according to amount of income.

Withholding tax (*Daň vyberaná zrážkou*): Income from interests at bank accounts, funds and investments are taxed with withholding tax. The rate is set at a uniform level. Although withholding tax is recorded separately, it is part of PIT.

Value added tax (*Daň z pridanej hodnoty*): VAT is levied on all goods and services supplied (including imported goods) in the Slovak Republic. It is the most important income source for the general budget. The rate is set uniformly, with exemption for some goods (e.g. medicine, books), which are taxed on a lower rate (10%).

Excise taxes (*Spotrebné dane*): Excise taxes are indirect taxes, selectively levied on certain products – beer, wine, spirits, tobacco products, mineral oil, coal, natural gas and electricity

Local taxes (*Miestne dane*): They are set and governed at the municipal level. Local taxes include real estate tax, motor vehicle tax and tax on specific services (charges for dog owners, accommodation tax, tax on non-win gambling machines, etc.).

2. SIMULATION OF TAXES AND BENEFITS IN EUROMOD

2.1 Scope of simulation

Table 2.1 Simulation of benefits in EUROMOD

	Variable name(s)	Treatment in EUROMOD 2009-2013	Why not fully simulated?
Old age pension	poa00	I	No data on contributions records
Early old age pension	pyr	I	No data on contributions records
Disability pension	pdi	I	No data on contributions records
Widows and widowers pension	psuwd	I	No data on contributions records
Orphan's pension	psuor	I	No data on contributions records
Sickness cash benefit	bhl	IA	Short-term benefit, no data on sick days; included in health related benefits
Benefit for nursing a sick relative	bcr	I	Short-term benefit, no data on sick days of relatives
Equalization allowance	bfaot	IA	No data on pregnancy related changes in pay; included in other family benefits
Maternity benefit	bma	I	No data on contributions records
Unemployment benefit	bunct	PS	No data on contributions records
Material need benefits	bsa	S	Missing data about participation in training/ community work; no information about child disability
Child birth grant	bchba	S	
Additional birth grant	bchba	S	
Multiple birth grant	bchba	IA	No information in the data
Child benefit	bch	S	
Additional child benefit	bch	S	
Parental allowance	bcc	S	Missing data about child disability
Funeral benefit	bsu	IA	No data on deceased relatives; included in other survivors benefits
Scholarships	bsaot	IA	No information about grades; included in other social assistance benefits

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; “IA”: *included* in the micro-

data in an *aggregate* variable, but not simulated; “PS” *partially simulated* as some of its relevant rules are not simulated; “S” *simulated* although some minor or very specific rules may not be simulated.

Table 2.2 Simulation of taxes and social contributions in EUROMOD

	Variable name(s)	Treatment in EUROMOD	Why not fully simulated?
		2009 - 2013	
Personal income tax	tin_s	S	
Withholding tax	tin_s	PS	Simulated together with personal income tax
Value added tax		E	Beyond the scope of Euromod; no data on expenditures
Excise taxes		E	Beyond the scope of Euromod; no data on expenditures
Local taxes		E	Beyond the scope of Euromod; no detailed data on locality
Employee social insurance contributions	tscee_s	S	
Employer social insurance contributions	tscer_s	S	
Self-employed social insurance contributions	tscse_s	S	Based on current income; no data about previous income
Employee health insurance contributions	tschlee_s	S	
Employer health insurance contributions	tschler_s	S	
Self-employed health insurance contributions	tschlse_s	S	Based on current income; no data about previous income
Voluntary health insurance contributions (inactive)	tschlfx_s	S	
Credited health insurance contributions	tscctl_s	S	
Compulsory private pension contributions	tscpci_s	S	No data on participation in 2 nd pillar in the dataset; participation simulated randomly based on probabilities derived from external data

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

- **Structural changes between 2009 and 2010**

Parental allowance rules were changed in 2010. Two benefit amounts were introduced, conditioned to child’s age, parent’s contributions previous child birth, as well as their work history and eligibility for maternity benefits.

- **Structural changes between 2010 and 2011**

Parental allowance rules were changed in 2011. The eligibility conditions are similar to 2009 and the amount of the allowance is increased by 25% for every child, who was born at the same time.

The second change is in the definition of dependent child, who is eligible to credited health contributions. Since 2011, it is considered as dependent child any student up to 30 years old in full-time education, but not PhD students.

The third structural change is in personal income tax. Since 2011, the supplementary pension saving allowance is not valid.

Since 2011, health insurance contributions are paid on income from dividends.

- *Structural changes between 2011 and 2012*

There are not structural changes between 2011 and 2012, only parameter changes.

- *Structural changes between 2012 and 2013*

The flat tax rate is replaced by progressive PIT with two rates. In addition, the spouse tax allowance is restricted only for a spouse, who takes care of child up to 3 years old or receives caring benefit or is disabled or unemployed.

The assessment base for all types of insurance is unified at the amount of 5 times the average wage two years prior.

The rate of health insurance contribution on income from dividends increases and the basic allowance is cancelled.

The amount of old age insurance contributions redirected to II pillar is reduced to 4%.

2.2 Order of simulation and interdependencies

Table 2.3 shows the order in which the policies are simulated. The order is the same for all years. Minimum wage is simulated first, as the simulation of this policy affects employment income which is subsequently an input to social insurance contributions, personal income tax and means-tested benefits. However, note that minimum wage is turned off in all years.

Eligibility for the unemployment benefit is conditional upon receipt of the parental allowance. As a result, parental allowance is simulated before the unemployment insurance benefit.

Taxable income excludes all social insurance contributions paid. Therefore, social insurance contributions are simulated before the personal income tax.

Means-tested social assistance (material need benefits) are the last benefit to be simulated as the income that is assessed is net of all social insurance and taxes paid, while including social security benefits and regular state support benefits with the exception of the child benefit.

Finally, credited health contributions are simulated last as eligibility depends on receipt of the material need benefit.

Table 2.3 EUROMOD Spine: order of simulation

Policy	SK_2009	SK_2010	SK_2011	SK_2012	SK_2013	Description of the instrument and main output
Uprate_sk	on	on	on	on	on	DEF: UPDATING FACTORS
Constants_sk	on	on	on	on	on	DEF: Constants
Random_sk	toggle	toggle	toggle	toggle	toggle	DEF: Defining random numbers for assigning Second pillar pension insurance contributions
Ildf_sk	on	on	on	on	on	DEF: INCOME CONCEPTS
Tudef_sk	on	on	on	on	on	DEF: ASSESSMENT UNITS
Yem_sk	off	off	off	off	off	INC: Minimum Wage (Minimálna mzda)
Neg_sk	on	on	on	on	on	DEF: recode negative incomes (e.g. self-employment income) to zero
Bcc_sk	on	on	on	on	on	BEN: Parental Allowance (Rodičovský príspevok)
Tscee_sk	on	on	on	on	on	SIC: Employee social insurance contributions (Sociálne poistenie - zamestnanec)
Bunct_sk	on	on	on	on	on	BEN: Unemployment benefit (Dávka v nezamestnanosti)
Tscer_sk	on	on	on	on	on	SIC: Employer social insurance contributions (Zamestnávateľ sociálne poistenie)
Tscse_sk	on	on	on	on	on	SIC: Self-employed social insurance contributions (Sociálne poistenie - samostatne zárobkovo činné osoby)
Tschaj_sk	on	on	on	on	on	SIC: Social insurance contributions paid from income from agreements
Tscpci_sk	toggle	toggle	toggle	toggle	toggle	SIC: Second pillar pension insurance contributions (Príspevky na starobné dôchodkové sporenie)
Tschl_sk	on	on	on	on	on	SIC: Health insurance contributions (Zdravotné poistenie)
Tin_sk	on	on	on	on	on	TAX: Personal Income tax (Daň z príjmu fyzických osôb)
Bchba_sk	on	on	on	on	on	BEN: Child birth grant (Príspevok pri narodení dieťaťa) & Additional birth grant (Príplatok k príspevku pri narodení dieťaťa)
Bch_sk	on	on	on	on	on	BEN: Child Benefit (Prídavok na dieťa)
Bsa_sk	on	on	on	on	on	BEN: Means-tested social assistance (Dávka v hmotnej núdzi a príspevky k dávke)
Tscctl_sk	on	on	on	on	on	SIC: Credited & 'voluntary' health insurance contributions (Zdravotné poistenie platené štátom a samoplatcami)
Output_std_sk	on	on	on	on	on	DEF: STANDARD OUTPUT INDIVIDUAL LEVEL
Output_std_hh_sk	off	off	off	off	off	DEF: STANDARD OUTPUT HOUSEHOLD LEVEL

2.3 Social benefits

2.3.1 Parental allowance (*bcc_sk*)

- *Definitions*

There is a special unit of analysis (*tu_bcc_sk*) for parental allowance, which contains parents and their children up to 3 years old or up to 6 years old in case of long term unfavourable health conditions.

- *Eligibility conditions*

Only one parent can claim the allowance. It cannot be combined with sickness benefit. Maternity benefit reduces the amount of allowance.

EUROMOD notes: The loss of entitlement due to receiving sickness benefit is actually not simulated in the model.

- *Income test*

Not applicable

- *Benefit amount*

During 2006 – 2009 the amount of the benefit was fixed independently from the number of children in the tax unit. In 2010 a second higher amount of parental allowance was defined. Entitled to the higher amount was the parent of a child up to 2 years old, who was eligible for maternity benefit before child birth or had paid sickness insurance contributions at least for a period of 270 days before child birth. The parent was not entitled for higher amount if he has a paid job. Since 2011 the amount of benefit for tax unit with one child is set as in following table. This amount increases by 25% for every child, who has born at the same time as the one considered. The parental allowance is decreased by 50% if some other dependent child in the same family has not attended school for 3 months.

	2006	2007	2008	2009	2010	2011	2012	2013
Per family	SKK 4230	SKK 4440	SKK 4560	€158.67	€164.22 /€256	€190.1	€194.7	€199.6

EUROMOD notes: The reduction in allowance due other children not attended school is not modeled.

2.3.2 Unemployment benefit (*bunct_sk*)

- *Definitions*

The unit of analysis is an individual.

- *Eligibility conditions*

A person is entitled to receive unemployment benefit if she has contributed for at least two years within last three. After the end of an unemployment spell, the insured person must contribute for another two years before a new claim can be made. He must be listed on the unemployment registry and be under the retirement age. The benefit cannot be combined with sickness, nursing or maternity benefit, or parental allowance. The maximum length of receiving unemployment benefit is 6 months.

- **Income test**

No income test is applied

- **Benefit amount**

The amount of unemployment benefit is 50% of the daily assessment base, which is calculated as the sum of all the bases on which unemployment insurance contributions have been paid, divided by the corresponding number of days. The benefit is provided with respect to the number of days in unemployment. The maximum monthly assessment base is 2 times the average wage two years prior.

EUROMOD notes: The unemployment benefit is modeled on a monthly basis. The variable “previous wage” is used as the daily assessment base. In case the value is missing imputed wage is used.

2.3.3 Child birth grant and additional birth grant (*bchba_sk*)

- **Definitions**

There is special unit of analysis (*tu_bchba_sk*) containing parents and their dependent children up to 1 year old.

- **Eligibility conditions**

Only one parent (usually the mother) can receive the grant. There is no conditionality to this grant other than permanent residency of both the entitled parent and the dependent child in the Slovak Republic. The child should be older than 28 days. The additional birth grant was introduced in 2007 and was paid for each new-born child whose mother was at her first childbearing. Since 2009 the additional child birth grant is paid for the first three children.

EUROMOD notes: The benefit is simulated as a yearly amount for all parents, who have a dependent child up to 1 year old.

- **Income test**

No income test is applied

- **Benefit amount**

	2006	2007	2008	2009	2010	2011	2012	2013
Birth grant	SKK 4460	SKK 4460	SKK 4560	€151.37	€151.37	€151.37	€151.37	€151.37
Additional birth grant	-	SKK 11000	SKK 20440	€678.49	€678.49	€678.49	€678.49	€678.49

2.3.4 Child benefit (*bch_sk*)

- **Definitions**

The unit of analysis is the family (*tu_family_sk*), which contains parents and their dependent children. Dependent child is defined as a child up to 16 years old, or up to 18 years old and disabled or up to 25 years old and studying at university (not yet finished post-secondary education), or up to 25 years old and cannot study because of illness or injury.

- **Eligibility conditions**

There is no conditionality to the child benefit other than permanent residency in the Slovak republic of both the entitled parent and the dependent child. Since 2008, an additional child benefit has been introduced. Eligible to receive it are recipients of old-age, early old-age or disability pension, or parents who do not work or are not entitled to receive the tax credit on dependent child.

EUROMOD notes: The extension of benefit for children, who are younger than 26 and not studying at an approved institution because of illness or injury, is not modelled.

- **Income test**

No income test is applied

- **Benefit amount**

The amount of the benefit slightly differs each year. It is adjusted by government regulation. The monthly amounts in the following table are per child.

	2006	2007	2008	2009	2010	2011	2012	2013
Child benefit	SKK 540	SKK 540	SKK 540	€21.25	€21.99	€22.01	€22.54	€23.10
Additional benefit	-	-	SKK 300	€9.96	€10.31	€10.32	€10.57	€10.83

2.3.5 Material need benefits (*bsa_sk*)

- **Definitions**

The unit of analysis is the family (*tu_bsa_sk*) but with a slightly different definition of dependent child, as for child benefit. The dependent child conditions are following:

A child is less than 16 years old, or less than 18 years old and disabled, or less than 26 years old and student, or less than 26 years old with assessed income below minimum wage, or receiving disability pension or unemployment benefit and cannot be married.

- **Eligibility conditions**

The family unit is eligible to receive material need benefit, if its assessed income is below the minimum subsistence level corresponding to its family structure.

The monthly amounts of the minimum subsistence level are:

	2006	2007	2008	2009	2010	2011	2012	2013
Head	SKK 4730	SKK 4980	SKK 5130	€178.92	€185.19	€185.38	€189.83	€194.58
Every next adult	SKK 3300	SKK 3480	SKK 3580	€124.81	€129.18	€129.31	€132.42	€135.74
Dependent child	SKK 2150	SKK 2270	SKK 2340	€81.66	€84.52	€84.61	€86.65	€88.82

- **Income test**

The assessed income consists of:

- 75% of the net employment and self-employment income

- 75% of old-age and early old-age pension for a pensioner with working history up to 25 years For each additional year of working history beyond 25 years, the parameter is decreased by 1 %
- 75% of the maternity benefit
- 75% of the disability benefit
- 75% of the orphan pension
- 75% of the widow and widower pension
- unemployment insurance benefit
- sickness insurance benefit
- private pensions
- property income
- investment income
- maintenance payments
- parental allowance
- termination pay
- severance pay
- equalization allowance
- private transfers

Incomes exempt from the assessed income are:

- One-off state support payments (child birth grant, multiple birth grant, foster care allowances, funeral benefit)
- Child benefit and additional child benefit
- Scholarships
- Tax credit on a dependent child and employee tax credit
- Income from occasional activities up to twice the minimum subsistence level
- Student income up to 1.2 times the minimum subsistence level
- Contribution for graduation practice

EUROMOD notes: Assessed income is derived from original market income (ils_origy) by adding the above named benefits and subtracting simulated social security contributions and income tax, income from occasional activities, educational allowances and 25% of net earnings, maternity benefit and all pensions. The coefficient for old-age pension is adjusted according to length of working history.

- ***Benefit amount***

The amount of the material need benefits is calculated summing the **basic benefit for material need** and all the **allowances for material need** to which a family is entitled to, and subtracting the family's assessed income.

The amount of **basic material need benefit** is set according to structure of family as following:

	2006	2007	2008	2009	2010-2013
Individual	SKK 1560	SKK 1640	SKK 1680	€8.43	€60.50
Single parent, 1-4 children	SKK 2500	SKK 2630	SKK 2800	€109.54	€115.10
Single parent, 5+ children	SKK 3710	SKK 3900	SKK 4100	€159.34	€168.20
Couple, no children	SKK 2710	SKK 2850	SKK 2910	€101.58	€105.20
Couple, 1-4 children	SKK 3700	SKK 3890	SKK 4000	€150.04	€157.60
Couple, 5+ children	SKK 4950	SKK 5210	SKK 5360	€201.16	€212.30
Extra amount for pregnant women	SKK 350	SKK 350	SKK 370	€12.95	€13.50
Extra amount for child less than 1 year old	SKK 350	SKK 350	SKK 370	€12.95	€13.50

The monthly amount of **health care allowance** is 2 euro per individual. Before 2009 the amount was 50 SKK. This allowance covers care expenditures of a person in state of material need and has no eligibility condition.

EUROMOD notes: Basic material needs benefit and health care allowance are simulated for every tax unit. The supplement for pregnant women is not simulated.

The **housing allowance** aims to cover the housing related costs of a household in material need. At least one member must be the owner or tenant of the flat or house and the family must prove she is paying housing costs. Only one person in household is entitled to receive housing allowance. The amount of allowance for a one-person household is 55.80 Euro and for a household with 2 or more members it is 89.20 Euro. The amount was slightly different in the past.

EUROMOD notes: Housing allowance is simulated for every household and it is allocated to the head of the tax unit. We assume the head is responsible for housing.

The **protection allowance** is given to persons in material need who are above retirement age or disabled (lost more than 70% of work capability) or have been sick for a period more than 30 days, or to lone parents taking care of a child up to age of 31 weeks, or persons taking care of disabled individuals.. The amount of allowance is 63.07 Euro.

EUROMOD notes: Protection allowance is simulated for persons in retirement age or disabled or with children up to 1 year. If there is a disabled person in tax unit, one additional amount of protection allowance is simulated for carers. The carer is the oldest adult in tax unit not already eligible to protection allowance.

The **activation allowance** aims at obtaining, retaining or increasing the level of qualification, work skills, or work habits of individuals or households in order to encourage them to retain or to look for a job during the period in which they are in material need. The activation allowance cannot be received simultaneously with the protection allowance. The entitlement expires if person does not participate in programs (part-time attendance in educational activities, training and work programs organized by municipality or the Labour Office). The amount of activation allowance is 63.07 Euro.

EUROMOD notes: Activation allowance is simulated for every adult not eligible for protection allowance, since there is no information in data about participation in programs mentioned above.

2.4 Social contributions

2.4.1 Employee social contributions (tscee_sk)

- *Liability to contributions*

Every employee is obliged to pay social contributions. Pensioners are exempted from contributions for disability and unemployment insurance. Recipients of disability pension, who lost more than 70% of their work capability, are exempted from paying unemployment insurance contributions and during 2006 and 2007 they were exempted also from paying disability insurance contributions

Employees working on agreements were exempted until 2013. Since 2013, temporary workers, that work on the basis of an agreement of service or agreement of student work, should also pay social contributions. Students are entitled to social insurance contribution allowance in monthly amount of 8.39% of average wage two years prior up to 18 years of age, and in monthly amount of 19.72% of average wage two years prior up to 26 years of age. There is also exemption for recipients of old-age, early old-age or disability pension. The exemptions are different if a person is receiving regular or irregular income. The exact rates for each category are shown in the table below.

- *Income base used to calculate contributions*

The assessment base consists of gross wage and profit shares. Since 2011, assessment base includes also termination and severance payments. Since 2013, employee social contributions are paid from income from agreements, as well. The upper limit of the assessment base is unified since 2013 at 5 times the average wage two years prior. Before 2013, the maximum assessment base for sickness insurance was set to 1.5 times the average wage two years prior and for other types of insurance to 4 times (3 times during 2006 and 2007) the average wage two years prior.

- *Contribution rates*

Employee contribution rates:

Type of insurance	Old-age	Disability	Unemployment	Sickness
rate	4%	3%	1%	1.4%

Contribution rates on income from agreement:

	Regular income	Regular income and recipient of early old age pension	Irregular income	Irregular income and recipient of early old age pension	Student	Recipient of disability pension	Recipient of old age pension
Health insurance	4.00%	4.00%	4.00%	4.00%	0.00%	0.00%	0.00%
Pension insurance	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Disability insurance	3.00%	0.00%	3.00%	0.00%	3.00%	3.00%	0.00%
Sickness insurance	1.40%	1.40%	0.00%	0.00%	0.00%	0.00%	0.00%
Unemployment insurance	1.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sum	13.40%	9.40%	11.00%	8.00%	7.00%	7.00%	4.00%

EUROMOD notes: The difference between regular and irregular income is not modeled. Everyone pays social contributions as with regular income.

2.4.2 Employer social contributions (tscer_sk)

- *Liability to contributions*

Employer should pay social contributions for all employees. The same exemption for pensioners and disabled are in force as in case of employee social insurance contributions.

Employers had to pay contributions to guarantee and accident insurance on income from agreements during all years. Since 2013, the rules changed and now all types of insurance contributions are paid also on income from agreements, with some exemptions for pensioners and students as in case of employee social contributions paid from income from agreements. The exact rates for all categories are shown in the table below. The same social insurance contribution allowance is applied for students as well as employees.

- *Income base used to calculate contributions*

Employers' social contributions assessment base is equal to that of employees.

- *Contribution rates*

Employer contributions rates are:

Type of insurance	Old-age	Disability	Unemployment	Sickness	Reserve solidarity fund	Guarantee	Accident
rate	4%	3%	1%	1.4%	4.75%	0.25%	0.8%

Contribution rates on income from agreement:

	Regular income	Regular income and recipient of early old age pension	Irregular income	Irregular income and recipient of early old age pension	Student	Recipient of disability pension	Recipient of old age pension
Health insurance	10.00%	10.00%	10.00%	10.00%	0.00%	0.00%	0.00%
Pension insurance	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%
Disability insurance	3.00%	0.00%	3.00%	0.00%	3.00%	3.00%	0.00%
Sickness insurance	1.40%	1.40%	0.00%	0.00%	0.00%	0.00%	0.00%
Unemployment insurance	1.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Reserve solidarity fund	4.75%	4.75%	4.75%	4.75%	4.75%	4.75%	4.75%
Guarantee insurance	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
Accident insurance	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Sum	35.20%	31.20%	32.80%	29.80%	22.80%	22.80%	19.80%

EUROMOD notes: The difference between regular and irregular income is not modeled. Everyone pays social contributions as with regular income.

2.4.3 Self-employed social contributions (tscse_sk)

- *Liability to contributions*

Self-employed workers are obliged to contribute to social insurance agency if their earnings (without deducting the expenditures) are higher than a given low limit. The lower limit was equal to the minimum wage in 2006-07, 44.2% of average wage two years prior in 2008-2012 and, since 2013, the limit is set at 50% of average wage two years prior. If the self-employed is a pensioner, he is exempted from paying disability insurance contributions.

EUROMOD notes: We assume that every self-employed contribute at least the minimum. As the input database does not contain information about the turnover, the condition about earnings higher than 50% of average wage two years prior cannot be verified and modelled.

- *Income base used to calculate contributions*

The assessment base is half of the net profit, which is calculated as revenues decreased by costs and deductible expenses. Since 2013, the net profit is divided by coefficient 1.9 instead of 2. The maximum assessment base is equal to 5 times the average wage two years prior for all type of insurance. Before 2013, the maximum was defined as 1.5 times the average wage two years prior for sickness insurance and 4 times (3 times in 2006 and 2007) the average wage two years prior for other types of insurance.

- *Contribution rates*

Type of insurance	Old-age	Disability	Reserve solidarity fund	Sickness
rate	18%	6%	4.75%	4.4%

2.4.4 Health insurance contributions (tschl_sk)

- *Liability to contributions*

Everyone is obliged to be insured. Employees, employers and the self-employed pay a fixed rate from a defined assessment base. Government pays health insurance contributions for students,

unemployed, etc. (the exact conditions are described in next section). Others, who are not entitled to receive credited health insurance contributions and are not either employees or self-employed, are also obliged to pay and are registered under the category of “voluntary payers”.

- ***Income base used to calculate contributions***

The assessment base for employee and employer consists of the assessment base for social contributions and income from occasional activities and other payments made by the employer. The minimum assessment base is equal to the minimum wage and the maximum assessment base is set at 5 times (3 times before 2013) the average wage two years prior.

Since 2011, health insurance contributions are also paid from income from dividends with rate 10%. Since 2013, the rate was increased to 14%. The maximum assessment base is set at 10 times the average wage two years prior. Before 2013, the maximum was fixed at 3 times the average wage two years prior. Receivers of income from dividends were entitled to HIC allowance before 2013, which could be deducted from income from dividends, in amount of 44.2% of the average wage two years prior.

Since 2013, health insurance contributions are paid from income from agreements if a person is not entitled to receive credited health insurance contributions (see below). The minimum assessment base doesn't apply. The rate is same as for employee and employer.

The self-employed assessment base is half of the net profit, which is calculated as revenues decreased by costs and deductible expenses, but not decreased by paid health insurance contributions. All self-employed are required to pay health insurance contributions at least from minimum assessment base, which is 50% (44.2% before 2013) of the average wage two years prior. The maximum assessment base is 5 times (3 times before 2013) the average wage two years prior.

Everyone in the Slovak Republic has to be insured. So people, who are not employees or self-employed and who are not entitled to credited health insurance contributions (see below), must pay a fixed rate of 14% of the 44.2% of the average wage two years prior. Before 2011, the fixed rate was paid on the minimum wage adjusted by a given coefficient.

- ***Contribution rates***

	Employee	Employer	Self-employed	Voluntary
rate	4%	10%	14%	14%

2.4.5 Credited insurance contributions (tsccthl_sk)

- ***Eligibility***

The Government pays health insurance contributions for persons, who fulfill at least one of following conditions:

They are dependent children (student up to 30 years old, only until master degree claim), pensioners, disabled, receivers of parental allowance, maternity benefit, sickness or carer benefits, or entitled to material need benefit or registered unemployed.

The second condition is to have annual income below a given threshold, which is calculated as 15 times the minimum subsistence for a single person. Before 2011, the threshold was calculated on monthly basis as 44.2% of the average wage two years prior multiplied by a fixed coefficient. This policy was not in force in 2011 and 2012. During these years, the government

paid HIC for everyone, who fulfilled one of the first conditions listed above, no matter how high their income.

- **Contribution base**

Assessment base is equal to the average wage two years prior.

- **Contributed rates/ amounts**

The Government pays a rate of approximately 4% of the assessment base. The rate slightly differs each year. The rates of the credited health insurance contributions were:

2006	2007	2008	2009	2010	2011	2012	2013
4%	4.33%	4.5%	4.9%	4.78%	4.32%	4.33%	4%

2.4.6 Compulsory private pension (2nd pillar) insurance contributions (tscpcpi_sk)

A mandatory, private, funded pension pillar was introduced in January 2005. Within that system, 9 percentage points of the pension contributions paid by the employer flow directly to private pension funds and not to the Social Insurance Agency as in previous years. The employer's contributions to the first public PAYG pillar are correspondingly reduced, from 14% to 5% of the employee's gross income. Similarly, 9 percentage points of the pension insurance contributions of the self-employed may be directed to the second pillar. In that case, 9% of the social insurance contributions assessment base is directed to the public PAYG system, and 9% to the private, funded pillar. Since 2013, the part of the contributions paid to private pension funds has been reduced from 9% to 4%. Contrary, the part contributed to first public PAYG pillar increased by 5 percentage points. Since social insurance contributions on income from agreements were introduced, also part of old-age insurance contribution on this type of income can be directed to second pillar.

EUROMOD notes: There is missing information about participation in the second pillar. Participation is modeled randomly based on probabilities derived from external data in 2006. For this reason, the policy is set to toggle for years 2007-2013 in the model.

2.5 Personal income tax (tin_sk)

The main tax simulated for Slovakia is the personal income tax. All residents are required to file income tax returns (or ask their employer to do the tax clearing on their behalf) if their annual taxable income exceeds 50% of the basic tax allowance.

2.5.1 Tax unit

The tax unit is the individual.

2.5.2 Exemptions

There are several tax exemptions i.e. income components that are part of pre-tax income, but do not have to be declared to the tax authorities, and thus are not included in the concept of taxable income:

- all health-care and social insurance benefits,
- social assistance benefits (material need benefits),

- (c) state social support benefits (child birth grant, child benefit, multiple birth benefit, parental allowance, social assistance benefits for severely disabled people, foster care allowances, funeral benefit, nursing allowance),
- (d) scholarships except graduate scholarship,
- (e) income from dividends (profit shares paid to employees, share in the profits of the silent partners),
- (f) income from transferred, gifted or inherited immovable property,
- (g) alimonies,
- (h) luncheon vouchers (including contribution to meals consumed at canteen),
- (i) winnings in lotteries and other similar games operated under a license.

2.5.3 Tax allowances

The basic tax allowance can be deducted from positive tax base of each taxpayer. It is applied on a monthly basis. In case of receipt of old-age pension, early old-age pension and service pension, the basic tax allowance is reduced by the amount of the pension received. If the pensions mentioned above exceed the basic tax allowance, there is no entitlement to the basic tax allowance.

The formula to calculate annual basic tax allowance is following:

Formula	Years in force
$19.2 * \text{MSL} - \text{poa}00 - [\max(\text{Tax base before allowances} - 100 * \text{MSL}; 0) * 0.25]$	2007-2008; 2011-2013
$22.5 * \text{MSL} - \text{poa}00 - [\max(\text{Tax base before allowances} - 86 * \text{MSL}; 0) * 0.25]$	2009 – 2010

Note: MSL = minimum subsistence level

The spouse tax allowance can be deducted from the positive tax base of each taxpayer living with his/her spouse, if he/she satisfies one of following conditions: Takes care of child up to 3 years old, or receives caring benefit or is disabled or is registered unemployed at Labour office. Before 2013, no income, or income below the basic tax allowance, of spouse was the only condition. When computing the income of the spouse, the following types of income are taken into account: gross market income (employment, self-employment, investment and property income, private pensions, alimonies etc.), health and social insurance benefits. The tax credit, state social support benefits and scholarships are not assessed as part of the spouse's income. The spouse tax allowance is applied on a monthly basis. Since 2011, not active earnings are not used in computation the allowances. Not active earnings include income from property and investment income. The formula for deriving spouse tax allowance is:

Formula	Years in force
$19.2 * \text{MSL} - [\max(\text{Tax base before allowances} - 176 * \text{MSL}; 0) * 0.25] - \text{income of the spouse}$	2007-2008; 2011-2013
$22.5 * \text{MSL} - [\max(\text{Tax base before allowances} - 176 * \text{MSL}; 0) * 0.25] - \text{income of the spouse}$	2009 – 2010

Note: MSL = minimum subsistence level

The supplementary pension saving allowance was in force during years 2006 – 2010. Each taxpayer could lower his tax base by deducting the amount of supplementary pension savings, special purpose savings and life insurance during the tax year. The three types together couldn't

exceed € 398.33 (SKK 12 000) yearly. The supplementary pension saving allowance was applied only on annual basis, i.e. during tax clearing. Since January 2011, the allowance is not valid.

2.5.4 Tax base

Income liable to personal income tax includes wages, salaries, income from business activities, fringe benefits, capital incomes less dividends, interests and rental income. The tax base for employees is computed as taxable income less social insurance contributions (also applies to compulsory contributions to the second pillar). For the self-employed, the tax base is computed as taxable income minus social insurance contributions and minus tax-deductible expenses. Self-employed are allowed to deduct previous losses (going back up to seven years) from their taxable income. For the other taxpayers, the tax base is formed by deducting tax deductible expenses from taxable income.

If a taxpayer who is not a VAT taxable person (i.e. has an annual turnover^[1] that is less than 49 790 Euro), fails to deduct documented expenses, he/she shall be free to deduct lump-sum capped expenses equal to 40% of the aggregate income from self-employment. The ceiling for lump-sum expenses amounts to 5 040 Euro per year or 420 Euro per month. The lump-sum deduction covers all expenses except social security contributions. The taxpayer who applies lump-sum expenses shall in addition be free to deduct documented social security contributions.

2.5.5 Tax schedule

Before 2013, a flat rate of 19 per cent was applied.

In 2013, two rates were introduced, with threshold defined on annual basis:

Bracket number	Lower limit	Upper limit	Rate
1	0	176.8*MSL	19%
2	176.8*MSL	-	25%

Note: MSL = minimum subsistence level

2.5.6 Tax credits

There are two types of tax credit, which are form of a negative tax. The amount of tax credit is deducted from the tax liability. If the tax liability is lower than tax credit, the difference is received by the tax payer.

- 1) **Tax credit on dependent child** can be claimed by only one parent of a dependent child if she/he fulfils one of the following conditions:
 - a. was employed and earned annually at least 6 times minimum wage
 - b. was self-employed and had an annual gross revenue from self-employment or rent at least 6 times minimum wages

The tax credit is applied on a monthly basis (therefore the eligible person must earn at least half of the minimum wage during the month to be eligible to claim the tax credit for the respective month). If she or he fails to fulfill the condition on a monthly basis but does fulfill it on an annual basis, the taxpayer is able to apply for under-payments of tax credit through the annual tax clearing or by filling a tax return. The monthly amounts of tax credit per child are:

^[1] The turnover for twelve consecutive months is considered

year	2006	2007	2008	2009	2010	2011	2012	2013
amount	SKK 540	SKK 540	SKK 555	€19.32	€0	€0.02	€0.51	€1.03

- 2) **Employee tax credit** can be claimed by employees, who have worked at least 6 months during the year and their annual earnings are at least 6 minimum wages. The formula for deriving employee tax credit depends on annual income. If the income is below 12 minimum wages, the tax credit is computed as 19% of the difference between the basic tax allowance and the minimum wage less social insurance contributions. If the annual income exceeds 12 minimum wages, the tax credit amount is calculated as 19% of the difference between the individual basic tax allowance and taxable income. The tax credit becomes zero when taxable income is equal to the basic tax allowance. Employee tax credit is in force since 2009.

2.6 Other taxes

2.6.1 Withholding tax

Withholding tax is part of PIT, although it is recorded as a separate tax. It is levied on income originating from sources in the territory of the Slovak Republic:

- interests, winnings and other income from deposits
- interests, bonuses and other forms of yield from bonds and similar securities
- prizes in cash won in lotteries and other similar games without license
- incomes earned under a supplementary pension savings scheme
- paid under an insurance policy for the attainment of a certain age
- incomes of authors for their articles for newspapers, magazines, radio, or television, unless they are treated as artistic performances

These incomes are taxed according to a 19 per cent flat rate. The tax base for incomes mentioned above (except incomes of authors) shall correspond to the income alone. The tax base in case of incomes of authors shall correspond to the income, less 40%. Tax withheld shall be treated as a tax advance and the taxpayer shall be allowed to deduct such tax advances from the tax in its tax return. If the tax which was withheld exceeds the tax calculated by the taxpayer in its tax return, the taxpayer shall be entitled to a refund of the tax overpayment.

EUROMOD notes: Withholding tax is simulated as part of personal income tax in a way that incomes mentioned above are part of taxable income.

3. DATA

3.1 General description

The input database for the Slovak Republic is based on a national version of the EU-SILC. The official name of the product is “EU SILC 2010 SR UDB version 01/09/2011”, but it will be referred to as SK-SILC in this document. EU-SILC is an annual household income and living conditions survey based on a random sample and collected throughout the year by national statistical offices in a number of European countries (in April in the Slovak Republic). In Slovak Republic the survey has been carried out since 2005.

The survey collects information on household income, housing conditions, living conditions, employment, health status, access to health care, financial problems, housing problems and possibility to meet certain needs. SK-SILC contains more detailed information compared to the

UDB version of the EU-SILC which is an advantage for micro simulation modelling. This chapter is in large portion based on the intermediate quality report of the EU-SILC by the Statistical Office of the Slovak Republic.¹

The observation units are private households. The sample design is one-stage stratified sampling, where the proportional number of households was selected in individual stratum. From each stratum households were selected through simple random sampling.

The survey has a four year rotational panel survey design. In the first year of the survey (EU SILC 2005) the sample was divided into four rotational groups. There were approximately 1500 households in each sub-group. In the year 2006 households of the 1st rotational group from the year 2005 were excluded and replaced by new households and in the year 2007 households of the 2nd rotational group from the year 2006 were excluded and replaced by a new one.

Table 3.1 EUROMOD database description

EUROMOD database	SK_2010_a2
Original name	EU SILC 2010 SR UDB version 01/09/2011
Provider	The Statistical Office of the Slovak Republic
Year of collection	2010
Period of collection	1/4 to 30/4
Income reference period	2009
Sample size	6 068 households / 16 304 individuals
Response rate	94.13 %

The SK-SILC data is provided with weights attempting to correct for differential non response while scaling up sample numbers to the overall population. The correction was done in relation to the response rate, i.e. multiplying the weights by inverse value of response rate. Households were divided into strata (regional and rotational group) and it was assumed that each household in a stratum has the same probability of response. The empirical value of the response rate within the stratum yields the estimate of the probability of response for each household in the stratum.

3.2 Data adjustment

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

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

3.3 Imputations and assumptions

3.3.1 Time period

The SK-SILC information on demographic variables refers to the time of data collection (April). All income information refers to the previous fiscal year (January-December) and is expressed

¹See: http://epp.eurostat.ec.europa.eu/portal/page/portal/income_social_inclusion_living_conditions/quality/national_quality_reports

in annual sums. In EUROMOD database, all monetary variables are transformed into monthly averages by dividing amounts by 12. We assume that income is received at the same rate throughout the year. Some of income variables have additional information about number of months per year, during which particular income was received. Thus we can refine the simulations.

The national SK-SILC 2010 does not contain information about EU-2020 indicators. Information about EU-2020 indicators was taken from the UDB-SILC to be added to the EUROMOD input data for the Slovak Republic.

3.3.2 Gross incomes

The SK-SILC contains information about gross monetary incomes. The net income is available only at the household level, and is calculated as the difference between household gross income (sum of gross incomes of members of households) and the amount of taxes and social insurance contributions paid on employment and self-employment income and property tax. The information about taxes and social contributions is available only at the household level.

3.3.3 Disaggregation of harmonized variables

- Previous income is calculated using the amount of unemployment benefit reported in data.
- In the national SK-SILC dataset, information about different types of employment income is available, namely employment income (py010g) consists of separate variables for gross wage from main and second job, employment income from abroad, income from agreements, other payments from employer and profit shares.
- Investment income has two subcategories: interest and profits and investment income from dividends.
- Fringe benefits are expressed in kind in five variables: vouchers, contributions for gas, electricity and water, contribution for phone, benefit from company car and other fringe benefits.
- Old age pension is divided into main, military and other.
- There is also available information about different types of survivor's pensions. In the national version of SILC, there are separate variables for widows, widowers and orphans pension.

3.4 Updating

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

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

4. VALIDATION

4.1 Aggregate Validation

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

4.1.1 Components of disposable income

Comparison of composition of disposable income used in EUROMOD and in SK-SILC is shown in following table. The main difference is that EUROMOD includes private pension, so contributions are deducted and private pensions are added to disposable income. On the other hand, EUROMOD excludes, unlike SK-SILC, inter-household cash transfers, which are not used in any simulation. The last difference is excluding income from company car.

Table 4.1 Components of disposable income

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

4.1.2 Validation of incomes inputted into the simulation

Table 4.2 in Annex 2 shows the number of employed and unemployed in the dataset used for EUROMOD simulations against external benchmarks. The database very well represents the number of people in work. On the other hand, the number of unemployed individuals is overestimated in year 2009, but the overestimation decreases in subsequent years, as a result of rise in unemployment in the Slovak Republic.

The next table (4.3 in Annex 2) compares the number of recipients of either employment or self-employment income in EUROMOD's input database to the corresponding information obtained from the Social Security Agency. No adjustment is made to reflect employment/ self-employment trends in subsequent years. The number of persons receiving employment income is higher in the input dataset compared to external information. The discrepancy can be due measurement error in the data or to underreporting of income to the social security agency, i.e. tax evasion. On the other hand, the number of persons receiving self-employment income is lower than the external benchmark. To some extent, this is to be expected given the problems of collecting accurate self-employment income information using survey methods.

Following the same pattern, the aggregate amount of employment income is overestimated and the amount of self-employment income is underestimated in EUROMOD's input dataset in comparison to external data from Social Security Agency. The comparison is shown in table 4.4 in Annex 2.

A comparison of the total number of recipients of three pension types is shown in table 4.5 in Annex 2. The number of old-age pensioners is slightly overestimated, but the overestimation improves in subsequent years. The total number of recipients of disability pension is underestimated in all years. Finally, the number of recipients of survivors benefit is relatively well represented in the dataset. The table also provides information about recipients of maternity and sickness benefits from the input data, however, no external benchmarks are available for comparison.

Table 4.6 in Annex 2 presents a comparison of aggregate amounts of non-simulated benefits, as derived from the input database and as reported by the Social Security Agency. Following the same pattern as the number of recipients, the aggregate amount of old-age pension is slightly overestimated, but the overestimation decreases in time. On the other hand, both disability and survivor's pension are slightly underestimated in the input dataset. The two main short term contributory benefits, namely sickness and maternity benefits, are seriously underreported in the input dataset. The underestimation is particularly large in the case of sickness benefits. Aggregate sickness benefits in EUROMOD represent only 40% of those reported by the Social Security Agency in 2009-2012. In the case of maternity benefits, the gap is around 30% in 2009, but subsequently increases to 60% in 2012. It is not clear why both short term benefits are underestimated to such an extent. It is possible that short periods of receipt (especially in the case of sickness benefits) are overlooked by survey respondents when they report their income.

4.1.3 Validation of outputted (simulated) incomes

The numbers of recipients of simulated benefits and payer of simulated taxes and contributions are compared to external benchmarks in table 4.7 in Annex 2. The external statistics provides information about recipients of social benefits (except unemployment benefits) and payer of social insurance contributions only. All three figures for family support, namely child benefit, child birth grant and parental allowance, obtained with EUROMOD are underestimated in comparison with those from external figures. To some extent this can be due the fact, that EUROMOD does not simulate extended period of receipt of parental allowance for disabled children, as additionally, it does not simulate allowance when entitlement lasts for less than a

year (i.e. parents of children turning 4 during the reference period). The underestimation of child benefit might be due to EUROMOD not simulating the benefit for parents of children less than 26 years old and not studying because of illness or injury. The largest underestimation is in case of child birth grant. As there is no conditionality to this grant, underestimation indicates that there are too few families with new-born children in the dataset. On the other hand, compared to original data (SK-SILC), EUROMOD overestimates the number of recipients of child birth grant. This discrepancy could be related to underreporting of this type of income in survey data. Recipients of material needs benefits (social assistance) are significantly overestimated both in comparison to original data and to external benchmark. The simulated number of recipients of material needs assistance is approximately 2.8 times larger than the one registered in original data, suggesting significant underreporting. The difference to the external benchmark is not so high, but still significant. The simulated number of recipients of material need benefits is approximately by 60 % larger than external data. To some extent this could be related to non-take up of benefits.

The second part of table 4.7 in Annex 2 deals with number of social security contribution payers, compared to data from Social Security Agency. The number for self-employed contributions is very well represented in EUROMOD. The figures for employee and employer social security contributions are both overestimated. The gap, approximately 30 – 40 %, follows the pattern in overestimation of number of employment income recipients.

Table 4.8 in Annex 2 presents a set of figures related to aggregate annual expenditure in social benefits and revenue from taxes and social insurance contributions. Results for aggregate expenditures on benefits follow the same pattern as number of recipients of the benefits. The under-estimation of amounts of simulated family benefits in comparison with external benchmark is fairly the same as in previous table, which deals with number of recipients. The overestimation of aggregate amount of material need benefits is less significant than the overestimation of recipients of the benefit. This is consistent with non-take up of benefits in the case of entitlement to small amounts. However, the overestimation is severely distinctive in comparison with the original data, which is consistent with underreporting of this type of income in survey data. Finally, the aggregate amount of unemployment benefit is slightly underestimated compared to data provided by Social Security Agency. In case of this benefit, there isn't available information about number of recipients. The discrepancy changes over years, as EUROMOD does not take into account changes in employment/unemployment between income year of the input dataset and the policy year being simulated. On the other hand, the simulated aggregate amount of unemployment benefits closely follows the aggregate amount in original data. One explanation of the discrepancy in comparison to external data could be underreporting of this income (unemployment benefit is only short-term and lasts at most 6 months) or missing information about working history in the survey data.

The second part of table 4.8 shows simulated aggregate amounts of personal income tax, social and health insurance contributions by type of payer. Comparison with the original data is missing, as these variables are not included in SILC. The figures of simulated personal income tax are slightly under-estimated in all years. This discrepancy could be due to overestimated social insurance contributions, which are deducted from taxable income by computing tax base. All aggregate amounts of social contributions are approximately by 30% higher than the one obtained from external data. The largest overestimation is in the case of self-employment, which might have to do with the assumption that every self-employed pays at least the minimum. According to information from the Social Security Agency and tax returns, many self-employed do not pay social insurance contributions at all. It's not clear what the source of the discrepancy in case of employee and employer social contributions is. One possibility is the overestimation of aggregate employment income. Another explanation could be misreporting of employment income in the data or underreporting of employment income to tax authorities. Simulated

credited health insurance contributions are very well represented in EUROMOD. On the other hand, voluntary health insurance contributions are under-simulated by around 25 percentage points. The discrepancy could be due to oversimulated material needs benefit because simulated material needs benefit enters the condition of eligibility. Recipients of material needs benefit are not obliged to pay “voluntary” health insurance contributions.

4.2 Income distribution

All income distribution results presented here are computed for individuals according to their household disposable income (HDI) equivalised by the “modified OECD” equivalence scale. HDI are calculated as the sum of all income sources of all household members net of income tax and social insurance contributions. The weights in the OECD equivalence are: first adult=1; additional people aged 14+ = 0.5; additional people aged under 14 = 0.3.

4.2.1 Income inequality

Measures of income distribution are present in table 4.9 in Annex 2. No information is available for year 2011. Decile shares of total disposable income in EUROMOD are very similar to those produced by Eurostat, with the exception of the first and last deciles. EUROMOD produces a more egalitarian distribution of household disposable income. Thus the share of income going to the first decile is about 24 % larger in EUROMOD, whereas the share of the highest one is about 5% lower. The other inequality measures presented in table, namely Gini coefficient and S80/S20 ratio confirms this pattern. Both are about 5 – 10 % lower in EUROMOD compared to Eurostat statistics. Finally, figures for mean and median household disposable income are very close with external source of information, just about 5 % smaller.

4.2.2 Poverty rates

Poverty rates by gender and age derived using EUROMOD simulations and those published in Eurostat statistics are shown in table 4.10 in Annex 2. As in the case of income distributions, there is no information about year 2011. Extreme poverty, using the 40% median threshold, is strongly underestimated in EUROMOD simulations. At higher poverty thresholds, there is more alignment between the simulated and external figures. However, a gap of around 10 percentage points still remains. The bottom of the table shows poverty rates by age at 60 % median threshold. The discrepancy between simulated and external rates is around 10 to 20 percentage points for all age groups. The most significant misfit is recorded for the oldest age group (65+).

It is not entirely clear, what produces observed discrepancies. One possibility is fact that EUROMOD overestimates the social assistance benefits. Another explanation can be missing information about extremes on both sides of income distribution. (Missing the poorest and the richest households)

4.3 Validation of minimum wage

Baseline simulations in EUROMOD do not modify gross employment income in any way. However, the user may switch on a policy that ‘corrects’ employment income by ensuring it is not below the gross minimum wage corresponding to the number of hours the person has worked. Table 4.11 in Annex 2 presents a series of figures comparing results obtained under the two simulation scenarios. Changing employment income so as to incorporate the minimum hourly gross wage does not affect results in any substantive way.

4.4 Summary of “health warnings”

The final section summarizes particular aspects of the input dataset and of the way the Slovak tax-benefit system is implemented in EUROMOD which should be kept in mind when using the Slovak section of EUROMOD for doing analysis.

- 1) There are more employees and few self-employed in the dataset
- 2) Sickness benefits and maternity benefits are strongly underestimated in the input dataset
- 3) No adjustment is made for demographic and labour market changes taking place between reference year of the dataset and simulated policy years
- 4) Simulated tax liabilities are lower, possibly due to an underreporting of highly concentrated income types, such as property and investment income or due to over-simulated social insurance contributions, which are deducted from taxable income
- 5) Simulated social insurance contributions are overestimated
- 6) There may be too few families with very young children in the input dataset
- 7) Simulated disposable income is more equally distributed than the disposable income reported in the data
- 8) Simulated poverty rates are lower than the figures reported by Eurostat

5. REFERENCES

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6. ANNEX 1

Table – Uprating factors used for dataset, based on SK-SILC 2010

Index	Income Source /index type	2009	2009-2010	2009-2011	2009-2012	2009-2013
	% growth		1	3.9	3.7	1.5
default	SR SO/ CPI index	1	1.01	1.05	1.09	1.10
	% growth		3.2	2.2	2.4	2.6
yemwg	SR SO/ Average nominal wage growth	1	1.03	1.05	1.08	1.11
	% growth		4.70	1.05	2.66	15.08
yse	SR SSA/ Average nominal growth in self-employment income per person	1	1.05	1.06	1.09	1.25
	% growth		8.2	-5.7	26.0	26.0
yemcs	SR SO /Average growth in profit from company shares	1	1.08	1.02	1.29	1.62
	% growth		7.50	0.44	4.11	4.11
yemot	SR SO/Average growth in bonuses and other irregular employment income	1	1.0750	1.0797	1.1241	1.1703
	% growth		-2.12	10.98	-1.72	-12.23
yemaj	SR SSA/ Average growth in income from agreements	1	0.98	1.09	1.07	0.94
	% growth		4.4	3.7	6.2	6.2
yemtj	SR SO / Average growth in compensation per employee	1	1.04	1.08	1.15	1.22
	% growth		2.2	1.7	7	11
yyi	SR SO/ Average growth in income from investments	1	1.02	1.04	1.11	1.23
	% growth		2.2	1.7	0	0
ypr	SR SO/ Average growth in property income	1	1.02	1.04	1.04	1.04
	% growth		-29.79	2.30	2.30	2.30
ysv	SR SO/ Average growth in severance payments per employee	1	0.70	0.72	0.73	0.75
	% growth		3.0	3.2	2.2	2.4
yempv	SR SO/Average nominal wage growth	1	1.03	1.06	1.09	1.11
	% growth		3.05	1.80	3.30	1.95
poa00	Pension indexation; YoY indexation	1	1.03	1.05	1.08	1.10
	% growth		2.15	0.33	0.33	2.06
pdi00	Increase in the average disability pension, SR SO	1	1.02	1.02	1.03	1.05
	% growth		4.74	2.61	2.44	3.57
psu00	Increase in the average widow pension	1	1.05	1.07	1.10	1.14
	% growth		3.50	15.76	2.42	2.52
bcc	Based on policy descriptions	1	1.03	1.20	1.23	1.26
	% growth		3.48	0.09	2.41	2.48
bch	Based on policy descriptions	1	1.03	1.04	1.06	1.09
	% growth		0	0	0	0
bchba	Based on policy descriptions	1	1.00	1.00	1.00	1.00
	% growth		3.2	2.2	2.4	2.6
bunct	SR SO/Average nominal wage growth	1	1.03	1.05	1.08	1.11
	% growth		3.2	2.2	2.4	2.6

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bma	SR SO/Average nominal wage growth	1	1.03	1.05	1.08	1.11
	% growth		-0.47	3.67	1.26	1.26
yds	SR SO / Average growth in gross disposable income	1	1.00	1.03	1.04	1.06
	% growth		3.50	0.10	2.40	2.50
bsa	Based on the increase in the minimum subsistence level for 1	1	1.04	1.04	1.06	1.09
	% growth		3.2	2.2	2.4	2.6
bhl	SR SO/Average nominal wage growth	1	1.03	1.05	1.08	1.11

7. ANNEX 2

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

	EUROMOD		External					Ratio				
	2009	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	
Number of employed	2391.4	2366.3	2317.5	2315.3	2329.0	N/A	1.01	1.03	1.03	1.03	N/A	
Number of unemployed	388.5	323.5	389.2	365.0	378.0	N/A	1.20	1.00	1.06	1.03	N/A	

Notes: Number of employed and unemployed are computed based on months in employment/unemployment. Numbers computed as averages of monthly data over the year. N/A – not available.

Sources: Statistical office, Labour office

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

	EUROMOD		External					Ratio				
	2009	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	
Employment income	2475.2	1983.4	2100.4	1919.0	2074.8	N/A	1.25	1.18	1.29	1.19	N/A	
Fringe benefits	1769.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Self-employment income	258.2	291.3	282.4	276.8	277.2	N/A	0.89	0.91	0.93	0.93	N/A	

Notes: Based on the total number of employees and self-employed paying social security contributions. N/A – not available.

Sources: Social Security Agency.

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

	EUROMOD					External					Ratio				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Employment income	17 806	18 379	18 781	19 230	19 230	14 399	14 634	15 667	16 254	N/A	1.24	1.26	1.20	1.18	N/A
Fringe benefits	550	555	577	598	598	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Self-employment income	1 907	1 970	2 074	2 185	2 185	2 116	2 167	2 157	2 211	N/A	0.90	0.91	0.96	0.99	N/A

Notes: N/A – not available.

Sources: Social Security Agency.

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

	EUROMOD		External					Ratio				
	2009	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	
Benefits												
Old-age pension		1035.4	931.8	954.7	957.6	980.9	N/A	1.11	1.08	1.08	1.06	N/A
Disability pensions		189.0	208.3	213.8	223.2	227.8	N/A	0.91	0.88	0.85	0.83	N/A
Survivor's pension		354.9	338.0	336.8	337.0	336.9	N/A	1.05	1.05	1.05	1.05	N/A

Notes: N/A – not available.

Sources: Social Security Agency.

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

	EUROMOD					External					Ratio				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Benefits															
Old-age pension	4 110	4 235	4 311	4 454	4 454	3 835.61	3 997.85	4 099.42	4 293.77	N/A	1.07	1.06	1.05	1.04	N/A
Disability pensions	605	623	634	655	655	622.26	656.42	689.22	722.92	N/A	0.97	0.95	0.92	0.91	N/A
Survivor's pension	519	535	545	563	563	532.37	546.78	559.06	580.01	N/A	0.97	0.98	0.97	0.97	N/A
Maternity benefit	48	49	51	52	52	68	77	107	129	N/A	0.71	0.64	0.48	0.40	N/A
Sickness benefits	101	104	107	109	109	240	252.93	264	290	N/A	0.42	0.41	0.41	0.38	N/A

Notes: N/A – not available.

Sources: Social Security Agency.

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

	EUROMOD					SILC	Ratio	External					Ratio				
	2009	2010	2011	2012	2013	2009	2009	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Benefits																	
Unemployment benefits	119.4	119.4	119.4	119.4	119.4	123.1	0.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Child birth grant	35.3	35.3	35.3	35.3	35.3	33.8	1.04	56.5	56.7	56.9	57.0	N/A	0.62	0.62	0.62	0.62	N/A
Parental allowance	122.2	126.8	125.5	125.5	126.0	101.9	1.20	135.4	138.8	141.8	142.3	N/A	0.90	0.88	0.86	0.86	N/A
Child benefit	633.0	633.0	633.0	633.0	633.0	767.6	0.82	712.9	706.3	697.7	688.3	N/A	0.89	0.90	0.91	0.92	N/A
Material need benefits	285.1	283.8	272.9	257.6	266.7	98.6	2.89	164.7	189.7	187.2	183.1	N/A	1.73	1.50	1.52	1.56	N/A

continued....

	EUROMOD					SILC	Ratio		External					Ratio				
	2009	2010	2011	2012	2013		2009	2009	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Taxes and Social Insurance contributions																		
Income taxes	1785	1828	2121	2130	2135	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Employees SIC	2243	2243	2244	2244	2446	N/A	N/A	1607	1598	1577	1593	N/A	1.40	1.40	1.42	1.41	N/A	
Self-employed SIC	259	259	259	259	259	N/A	N/A	248	243	240	239	N/A	1.04	1.07	1.08	1.08	N/A	
Employers SIC	2440	2440	2440	2440	2440	N/A	N/A	1884	1940	1934	2013	N/A	1.29	1.26	1.26	1.21	N/A	

Notes: N/A not available.
Source: SR Labour Office.

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

	EUROMOD					SILC					Ratio				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Benefits															
Unemployment benefits	132	136	140	143	143	137	141	146	149	149	0.96	0.96	0.96	0.96	0.96
Child birth grant	28	28	28	28	28	25	25	25	25	25	1.10	1.10	1.10	1.10	1.10
Parental allowance	211	268	265	272	279	171	176	204	209	209	1.24	1.52	1.30	1.30	1.33
Child benefit	262	271	272	278	285	321	332	332	340	340	0.82	0.82	0.82	0.82	0.84
Material need benefits	364	369	360	347	357	143	148	148	152	152	2.55	2.49	2.43	2.29	2.36

continued...

	EUROMOD					External					Ratio				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Benefits															
Unemployment benefits	132	136	140	143	146	173	151	164	176	174	0.76	0.90	0.86	0.81	0.84
Child birth grant	28	28	28	28	28	41	44	44	44	45	0.68	0.63	0.62	0.62	0.61
Parental allowance	211	268	265	272	278	259	317	342	334	342	0.82	0.85	0.78	0.81	0.81
Child benefit	262	271	272	278	285	304	314	310	312	313	0.86	0.86	0.88	0.89	0.91
Material need benefits	364	369	363	354	346	248	301	294	291	295	1.47	1.22	1.23	1.21	1.17
Income taxes	1 249	1 333	1 598	1 633	1 731	1 519	1 514	1 731	1 864	1 895	0.82	0.88	0.92	0.88	0.91
Employee tax credit	33	28	7	7	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Employees SIC	2 280	2 356	2 342	2 399	2 602	1 705	1 779	1 871	1 944	2 113	1.34	1.32	1.25	1.23	1.23
Sickness	222	231	237	243	263	160	165	168	174	215	1.39	1.40	1.41	1.40	1.22
Disability	499	516	528	541	557	372	377	403	420	452	1.34	1.37	1.31	1.29	1.23
Pension	674	696	713	730	751	518	524	556	577	625	1.30	1.33	1.28	1.27	1.20
Unemployment	165	171	175	179	184	123	124	133	139	149	1.34	1.37	1.31	1.29	1.24
Health	720	744	689	706	821	570	577	594	619	671	1.26	1.29	1.16	1.14	1.22
Self-employed SIC	514	546	579	596	667	404	409	455	438	486	1.27	1.33	1.27	1.36	1.37
Sickness	49	52	53	55	111	37	37	37	37	42	1.32	1.39	1.43	1.46	2.64
Disability	68	72	74	76	71	50	50	49	50	54	1.36	1.44	1.49	1.53	1.32
Pension	208	220	225	231	215	120	114	113	115	149	1.72	1.93	1.98	2.01	1.45
Health	158	168	168	173	214	139	127	137	154	173	1.14	1.32	1.23	1.13	1.24
Employers SIC	5 868	6 064	6 192	6 343	6 616	4 501	4 704	4 965	5 115	5 579	1.30	1.29	1.25	1.24	1.19
Sickness	222	231	237	243	263	161	165	168	174	215	1.38	1.40	1.41	1.40	1.22
Disability	499	516	528	541	557	373	377	403	420	453	1.34	1.37	1.31	1.29	1.23
Pension	2 358	2 435	2 496	2 556	2 629	1 151	1 140	1 206	1 315	1 823	2.05	2.14	2.07	1.94	1.44
Unemployment	165	171	175	179	184	123	124	133	139	149	1.34	1.37	1.31	1.29	1.24
Health	1 645	1 700	1 720	1 762	1 824	1 419	1 452	1 497	1 547	1 678	1.16	1.17	1.15	1.14	1.09
Accident	138	142	146	149	153	113	114	123	129	131	1.22	1.25	1.18	1.16	1.17
Credited health insurance contributions	1 148	1 212	1 220	1 261	1 125	1 162	1 283	1 198	1 268	1 243	0.99	0.94	1.02	0.99	0.91
"Voluntary" health insurance contributions	32	34	57	59	60	39	47	78	74	66	0.82	0.73	0.72	0.80	0.90

Notes: N/A not available.

Source: SR Labour Office.

Table 4.9-Distribution of equivalised disposable income

	EUROMOD					External					Ratio				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
D1	4.3	4.3	4.3	4.3	4.2	3.5	3.5	3.6	N/A	N/A	1.24	1.24	1.20	N/A	N/A
D2	6.1	6.1	6.0	6.0	6.0	5.8	5.7	5.7	N/A	N/A	1.05	1.07	1.06	N/A	N/A
D2	6.1	6.1	6.0	6.0	6.0	5.8	5.7	5.7	N/A	N/A	1.05	1.07	1.06	N/A	N/A
D3	7.1	7.1	7.1	7.1	7.1	6.9	6.9	6.8	N/A	N/A	1.03	1.03	1.04	N/A	N/A
D4	7.9	7.9	7.9	7.9	7.9	7.7	7.9	7.7	N/A	N/A	1.02	1.00	1.03	N/A	N/A
D5	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.7	N/A	N/A	1.00	1.01	0.99	N/A	N/A
D6	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.7	N/A	N/A	1.00	1.00	0.98	N/A	N/A
D7	10.5	10.5	10.5	10.5	10.6	10.7	10.7	10.9	N/A	N/A	0.98	0.99	0.96	N/A	N/A
D8	11.8	11.8	11.8	11.8	11.8	12.1	12.1	12.3	N/A	N/A	0.98	0.97	0.96	N/A	N/A
D9	13.7	13.7	13.7	13.7	13.7	14.1	14.1	14.3	N/A	N/A	0.97	0.97	0.96	N/A	N/A
D10	20.4	20.4	20.5	20.6	20.5	21.2	21.0	20.3	N/A	N/A	0.96	0.97	1.01	N/A	N/A
Median	5 776	5 953	5 997	6 165	6 135	6 117	6 306	N/A	N/A	N/A	0.94	0.94	N/A	N/A	N/A
Mean	6 384	6 575	6 644	6 821	6 786	6 785	6 979	N/A	N/A	N/A	0.94	0.94	N/A	N/A	N/A
Gini	23.6	23.5	23.8	23.8	23.8	25.9	25.7	25.3	N/A	N/A	0.91	0.92	0.94	N/A	N/A
S80/S20	3.3	3.3	3.3	3.3	3.3	3.8	3.8	3.7	N/A	N/A	0.86	0.86	0.89	N/A	N/A

Notes: Based on 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; computed at the individual level.

Sources: EUROMOD calculations; External figures are taken from the EUROSTAT statistics database

http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database.

Table 4.10-Poverty rates by gender and age

	EUROMOD					External					Ratio				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
40% median HDI															
Total	1.7	1.7	1.8	2.1	2.1	5.0	4.5	4.3	N/A	N/A	0.35	0.39	0.42	N/A	N/A
Males	2.0	2.0	2.0	2.3	2.3	5.2	4.8	4.5	N/A	N/A	0.38	0.41	0.45	N/A	N/A
Females	1.5	1.5	1.6	1.9	1.9	4.7	4.3	4.2	N/A	N/A	0.33	0.36	0.38	N/A	N/A
50% median HDI															
Total	5.2	5.2	5.5	5.7	5.9	7.8	7.7	7.8	N/A	N/A	0.66	0.68	0.69	N/A	N/A
Males	5.3	5.3	5.6	5.8	6.0	7.9	7.8	7.8	N/A	N/A	0.67	0.68	0.70	N/A	N/A
Females	5.1	5.2	5.4	5.6	5.8	7.7	7.6	7.9	N/A	N/A	0.66	0.68	0.67	N/A	N/A
60% median HDI															
Total	10.5	10.4	10.6	10.7	10.8	12.0	13.0	13.2	N/A	N/A	0.87	0.80	0.80	N/A	N/A
Males	10.4	10.3	10.6	10.7	10.9	11.7	12.8	13.2	N/A	N/A	0.89	0.80	0.80	N/A	N/A
Females	10.5	10.4	10.5	10.6	10.7	12.2	13.1	13.3	N/A	N/A	0.86	0.80	0.79	N/A	N/A
70% median HDI															
Total	16.9	17.0	17.1	17.1	17.2	19.0	18.7	20.4	N/A	N/A	0.89	0.91	0.84	N/A	N/A
Males	16.3	16.3	16.4	16.4	16.7	18.4	18.3	19.6	N/A	N/A	0.89	0.89	0.84	N/A	N/A
Females	17.5	17.6	17.7	17.7	17.7	19.7	19.1	21.2	N/A	N/A	0.89	0.92	0.83	N/A	N/A
60% median HDI															
0-15 years	15.2	14.9	15.0	15.1	15.2	18.5	21.3	21.5	N/A	N/A	0.82	0.70	0.69	N/A	N/A
16-24 years	14.9	14.8	15.5	15.6	15.8	15.7	15.9	16.1	N/A	N/A	0.95	0.93	0.96	N/A	N/A
25-49 years	10.0	9.9	10.0	10.2	10.3	11.4	12.6	12.4	N/A	N/A	0.88	0.79	0.81	N/A	N/A
50-64 years	8.8	8.7	8.9	9.1	9.1	8.7	10.6	10.9	N/A	N/A	1.01	0.82	0.82	N/A	N/A
65+ years	4.5	4.5	4.3	4.4	4.3	7.7	6.3	7.8	N/A	N/A	0.59	0.72	0.55	N/A	N/A

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: EUROMOD calculations; External figures are taken from the EUROSTAT statistics database

http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database.

Table 4.10-Minimum wage validation

	Baseline					Min Wage Incl.					Ratio				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Equivalised disposable income	22561.84	23226.26	23458.62	24015.83	24530.04	22608.57	23276.52	23511.89	24073.01	24591.46	1.00	1.00	1.00	1.00	1.00
Employment income	17805.52	18349.41	18798.88	19226.70	19641.02	17871.28	18419.68	18873.57	19306.18	19725.21	1.00	1.00	1.00	1.00	1.00
Total income tax	1248.96	1332.79	1598.01	1633.50	1730.65	1252.15	1336.43	1603.06	1638.87	1734.15	1.00	1.00	1.00	1.00	1.00
Total employee social insurance contributions	2279.96	2356.35	2341.85	2399.10	2575.81	2287.35	2364.25	2349.70	2407.45	2587.42	1.00	1.00	1.00	1.00	1.00
Gini coefficient	23.55	23.51	23.77	23.82	23.96	23.49	23.44	23.70	23.74	23.87	1.00	1.00	1.00	1.00	1.00
Poverty rate (60% median HDI)	10.49	10.36	10.56	10.70	10.77	10.19	10.07	10.37	10.42	10.50	1.03	1.03	1.02	1.03	1.03

Notes: The baseline is calculated without making any adjustments to employment income; the ‘minimum wage included’ columns adjust employment income to reflect the minimum gross hourly wage; see section II for a description of the implementation of the minimum hourly wage.

Source: EUROMOD calculations.