

EUROMOD

COUNTRY REPORT



POLAND (2009-2013)

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

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

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

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

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

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

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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 and benefit system in Poland is a unified national system. Local governments have some discretion over agricultural tax, real estate tax, tax on means of transport and some other charges like duty on possession of dogs which is levied on the dog owners.
- The fiscal year runs from 1st of January to 31st of December. The family benefits allowance period runs from 1st September to 31st August of the following calendar year for which the right to family benefits is granted.
- The state pension age in years 2005-2012 was 65 years for men, and 60 years for women. Beginning from January 2013 the state pension age will start to grow gradually to reach 67 for men (born after 30.09.1953) and women (born after 30.09.1973).
- Education in Poland is compulsory until the age of 18.
- Dependent children are defined as someone who is neither a parent nor married and:
 - a. aged 18 or less,
 - b. aged 25 or less and in full time education and living with his/her parents regardless of whether he/she is working or not;
 - c. aged 25 or less and in part time education and neither working nor registered as unemployed, and living with his or her parents.
- Large families are defined as families with three or more children eligible for family benefit
- Spouses may tax their income jointly. They may pool their incomes and divide by two to determine the appropriate tax brackets. After the tax is calculated it is then multiplied by two. Lone parents can take advantage of joint taxation too. They are allowed to tax their income jointly with one of their children on similar rules as spouses do.
- Capital income is taxed at a flat rate of 19%. Farmers pay agricultural tax that is based on farm size and quality of the land area. Self-employment income may be taxed in one of three different ways, with more than 70% of the self-employed paying income tax according to the general progressive system.
- All individuals who earn an income need to file a tax return unless the only source of income is from a pension or if the individual is a farmer without non-farm work income.
- In the Polish PIT system, tax bands and tax credits are not subject to indexation regime taking account of inflation. However, the values of: old-age pensions, disability pensions, survivor pensions, nursing supplement, as well as pre-retirement benefit, pre-retirement allowance, social pension, housing benefit and unemployed benefit, are subject to indexation meant to take into account the effect of inflation. Indexation of those benefits is conducted once per year in March.
- The values of family benefits and social assistance, as well as income thresholds used in means tests for the purpose of those benefits are verified once every three years. The verification process may result in indexation of benefits values and thresholds, however this is not compulsory and sometimes (i.e. 2009) the values might be kept unchanged. The indexation must account for change in the value of social minimum threshold which is set by the Institute of Labour and Social Studies. Indexation of social assistance is conducted in October while family benefits are indexed in November. The

last verification took place in 2012 and it resulted in the increase of values and income thresholds. The next verification is planned for 2015.

- The means-tested benefit system determines entitlement using two values. For family benefits, the previous year's taxable income of the benefit unit is considered while for housing benefit, the value of the previous 3 months income of the benefit unit is considered. Eligibility for social assistance is determined based on both income and wealth evaluation (the latter is carried out by representatives from the local social assistance office).

1.2 Social Benefits

Contributory Benefits

Old-age pension (*świadczenie emerytalne*): contributory benefit to workers who have attained the statutory retirement age, 65 (60) years for men (women); conditional on at least 25 (20) year contributory and non-contributory period. Pension amount varies with amount and years of contribution and is guaranteed not to be below a specified minimum level.

Earlier old-age pension (*świadczenie emerytalne*): men (women) who have remained in employment relationship may acquire the full old-age pension at the age of 60 (55) years if they can prove at least 35 (30) year long contributory and non-contributory period or 25 (20) year contributory and non-contributory period and have been recognised as completely incapable of work.

Bridging old-age pension (*emerytura pomostowa*): the bridging pensions system that came into force from 2009 assumes that people working in special conditions have the right to receive a bridging pension up to five years before reaching retirement age.

Ex-officio old-age pension (*emerytura z urzędu*): was introduced in 1.01.2006. The ex-officio pension is granted to a person born before 1.01.1949 who is a recipient of the disability pension, irrespective of whether this person meets the condition of the 25 (20) year contributory and non-contributory period.

Nursing supplement (*dodatek pielęgnacyjny*): is paid to old-age pensioners who are aged 75 and above and to disability pensioners with severe disability.

Pre-retirement Benefits and Allowances (*zasilek przedemerytalny lub świadczenie przedemerytalne*): are financed by the Labour Fund and payable to individuals after at least 6 months of receiving unemployment benefit who have the unemployed status and satisfy specific requirements concerning age and length of employment.

Disability Pension (*renta z tytułu niezdolności do pracy*): contributory benefit granted following a work accident or an occupational disease irrespective of duration of accident insurance period and date of incapacitation.

Survivor pension (*renta rodzinna*): contributory benefit paid to eligible survivor(s) of a deceased person if the deceased met the contributory conditions.

Maternity Benefit (*zasilek macierzyński*): is granted to an insured woman who within the period of sickness insurance or within the period of child care leave: gave birth to a child, took in a child under 1 year of age and applied for legal adoption or took in a child under 1 year of age to be raised in a foster family. The right to the maternity benefit is also awarded to an insured man who took a child to be brought up, under the similar rules, as those applied to insured women.

Sickness Allowances (*zasilek chorobowy*): payments for periods of incapacity for work caused by an illness, accident or isolation due to an infectious disease. Sickness allowances are payable to employees starting from the 34th day of incapacity for work (continuous or otherwise) in a calendar year or from the 15th day (respectively) if the employee has reached age of 50 years. If the incapacity for work was caused by accident at work or occupational disease, Sickness Allowance is payable from the first day of incapacity for work. Sickness Allowance is payable for the period in which a person is unable to work, however this period cannot exceed 182 days; and in case of incapacity for work caused by tuberculosis cannot exceed 270 days. From 1 January 2009 insured women have the right to the allowance (for a period not exceeding 270 days) if incapacity for work occurred during the period of pregnancy.

Health Rehabilitation Benefits (*świadczenie rehabilitacyjne*): granted to an insured person who has exhausted his or her entitlement to Sickness Allowance, but there is a good prognosis as to the restoration of his or her earning capacity. Rehabilitation benefits are disbursed in the form of monthly payments for a period not exceeding 12 months. A decision to grant health rehabilitation benefit is made by a doctor that is licensed to issue declarations of work capacity.

Compensatory Allowances (*zasilek wyrównawczy*): granted to employees whose remuneration has been reduced as a result of occupational rehabilitation undertaken in order to adapt or retrain for a specific job. Only insured employees are entitled to the Compensatory Allowance. Compensatory Allowance is financed by the Social Insurance Institution (ZUS) and can be paid directly by ZUS or through the employer.

Care Allowances (*zasilek opiekuńczy*): payable to persons who are unable to work, because they have to take care of a sick child of up to 14 years of age or, in some cases, of a healthy child of up to 8 years of age, or another sick member of the family. These allowances are only available to persons who are subject to mandatory sickness insurance. In case of child care older than 14 years or in the event of taking care of other sick members of the family, the allowance is payable during a period of release from work, however it cannot be longer than 14 days per year. The total payment period of care allowance in respect of care of children and other family members may not exceed 60 days per year.

Funeral Grant (*zasilek pogrzebowy*): is aimed at covering costs of funeral of insured persons, pensioners, retirees or recipients of pre-retirement allowances or benefits and members of their families.

Unemployment Benefits (*zasilek dla bezrobotnych*): is granted to unemployed persons who have lost a job and met certain conditions over at least 365 days in the period of 18 months before the day of registration in the labour office. The conditions include contributory work requirements and active job search.

Family Benefits

Family Allowance (*zasilek rodzinny*): a non-contributory means tested yearly grant to families that have dependent children. The Family Allowance is paid until the child finishes education (usually to the age of 18). If the child continues education at school or university the allowance is paid until age of 24. Currently in addition to the family allowance, the following supplements may also be granted:

a) Supplement for child birth (*dodatek z tytułu urodzenia dziecka*): a one-time lump sum grant paid upon the birth of a child. Family benefits are not taxable.

b) Parental Leave Supplement (*dodatek z tytułu opieki nad dzieckiem w okresie korzystania z urlopu wychowawczego*): a supplement granted to a parent, factual or statutory guardian of a child, who takes parental leave to take care of at least one child aged 6 years or less. Supplement is payable within period of 24, 36 or 72 months at a monthly rate.

c) Supplement for lone parents who do not receive alimony payments (*dodatek z tytułu samotnego wychowywania dziecka i na które nie ma możliwości zasądzenia alimentów*): supplement paid to a lone parent who does not get alimony payments. The supplement has been paid since 01.09.2005

d) Supplement for Education and Rehabilitation of a Disabled Child Supplement (*dodatek z tytułu kształcenia i rehabilitacji dziecka niepełnosprawnego*): is granted to the parent or guardian of a disabled child until the child attains the age of 16 years or 24 years if the disability is severe or moderate.

e) Supplement for bringing up a child in a multi-child family (*dodatek z tytułu wychowywania dziecka w rodzinie wielodzietnej*): the supplement is payable for the third and each subsequent child entitled to the family allowance.

f) Supplement for starting the school year (*dodatek z tytułu rozpoczęcia roku szkolnego*): the supplement is payable for each child in primary and secondary school;

g) Supplement for starting school outside the place of residence (*dodatek z tytułu podjęcia nauki w szkole poza miejscem zamieszkania*): the supplement is payable at monthly rate for 10 months (from September to June) if the child takes up education in a school outside of the place of residence.

Further components of Family Benefits include:

Nursing Benefit (*zasilek pielęgnacyjny*): a benefit granted to a handicapped child, a handicapped person over 16 years of age who possess a medical certificate confirming severe disability, or to a person who is over 75 years old and is not eligible for the nursing supplement. The benefit may also be granted to a person older than 16 years of age with a medical certificate of moderate degree of disability if the disability occurred before the person reached the age of 21 of age. The benefit is not granted to a person who is staying at an institution providing full time care if the services provided by the institution are financed by the state or the National Health Fund.

Nursing Allowance (*świadczenie pielęgnacyjne*): a benefit granted to a parent, a factual or statutory guardian, who resigns from employment or other paid job in order to take care of a child possessing a certificate confirming his/her disability. It used to be a means tested benefit but since 1.01.2010 it has become a universal benefit. Since 2013 the eligibility criteria for nursing allowance are limited to parents of those children whose disability occurred before becoming 18 (or 25 in case of children that continued their education after 18th year of life).

Special Nursing Allowance (*specjalny zasilek opiekuńczy*): this benefit is addressed to those individuals who resign from employment or other paid job in order to take care of a dependant relative with valid certificate that confirms his/her disability. To become eligible one has to meet the income criterion which is calculated for the sum of income in both of families: the family of person that is taking care of disabled relative and of a family that person requiring care is staying with.

Alimony support

Alimony Advance (*zaliczka alimentacyjna*): a payment made to lone parents for whom the court adjudicated the alimony, the execution of which was ineffective. The alimony advance was exempted from personal income tax and was not subject to an administrative and civil law

execution. Alimony Advance has been paid since 1 September 2005 until 1 September 2008. From October 2008 it was replaced by grants from the Alimony Fund.

Grant from Alimony Fund (*świadczenie z Funduszu Alimentacyjnego*): is paid in situations in which the court was unable to obtain alimony from the absent parent. The Alimony Fund was closed down on 1st May 2004 and brought back in October 2008.

Housing support

Housing benefit (*dodatek mieszkaniowy*): alongside social assistance and family allowance it is the main element of the system of public support for the poor in Poland. It is a means tested non-contributory benefit granted to families based on the size of their home and number of people in the household. The local government has some discretion over classification of housing costs for the purpose of determining the eligibility levels.

Social Assistance

Social Pension (*renta socjalna*): provides compensation to individuals who are completely incapable to work due to an impairment of bodily functions which occurred before attaining the age of 18, or before attaining the age of 25, if the person concerned was still in education, e.g. university or other graduate and post-graduate studies.

Social Assistance (*pomoc społeczna*): this is the main social assistance scheme in Poland. It is a non-contributory benefit for households that have insufficient resources while also meeting some specific social criteria. It is intended to benefit orphans, the disabled, unemployed, homeless, the chronically sick, pregnant women and those generally in poverty. Rules and general guidelines are set at the national level but benefit amounts are partly subject to the discretion of the local SA office and resources. The benefit is non-taxable and constitutes a 'safety net'. There are three main elements of the Social Assistance system - Permanent Compensation Benefit, Temporary Social Benefit and Special Purpose Benefit in case of special circumstances. The Social Assistance Benefits can also be divided into two groups: mandatory (obligatory) and non-mandatory (facultative) benefits.

- a) **Permanent Compensation Benefit** (*zasilek stały*): is an obligatory allowance granted to a person who is unable to work due to disability or age, and who does not qualify for social insurance payments or invalidity pension.
- b) **Temporary Social Assistance Benefit** (*zasilek okresowy*): a grant made to a household that is experiencing financial problems caused by unemployment, prolonged illnesses(s), or disability and that have incomes lower than the Social Assistance threshold. The maximum amount of Temporary Social Allowance is determined as the difference between the income criterion and income before receipt of TSA.
- c) **Special Circumstances Benefit** (*zasilek celowy*): is a facultative allowance paid in case of unforeseen events like natural disasters.

Employers' sickness benefit

Sickness benefit (*zasilek chorobowy*) is payable to employees by the employer for the first 33 days of their sickness period.

1.3 Social contributions

There are separate social security systems for non-farmers and farmers. Social security contributions in the non-farm system are used to finance current *contributory benefits* as well as

other *non-contributory benefits*. The contributions are divided into the employee and the employer parts and are used to finance: old-age pension insurance, disability and survivors' pension insurance, sickness and maternity insurance, work and occupational illness insurance and unemployment benefits. Most of these contributions fall within the auspices of Social Insurance Fund (Fundusz Ubezpieczeń Społecznych - FUS) that is part of Social Insurance Institution (Zakład Ubezpieczeń Społecznych - ZUS).

Farmers contribute to retirement and disability pension insurance and to accident, illness, maternity insurance and health insurance. Contributions are paid to Farmers Social Insurance Institution (Kasa Rolniczego Ubezpieczenia Społecznego – KRUS).

Old-Age Pension Insurance (*składka emerytalna*): this contribution is divided equally into the employers' and employees' parts. The self-employed also contribute while in the case of an unemployed person who receives unemployment benefits, contributions are retained from the benefits. Contributed amounts are determined on the basis of gross income from work for employees with permanent job contracts. For employees with temporary job contracts, the obligation to make this contribution may depend on other factors.

Disability Insurance (*składka rentowa*): up until July 2007 this contribution was made in equal parts by both employers and employees. In July 2007 and January 2008 these contributions have been reformed and the employee and employer rates currently differ. Contributions are also withheld from unemployment benefits. Disability insurance guarantees benefits in case of loss of income due to disability.

Sickness Insurance (*składka chorobowa*): contribution made by employees to finance contributory sickness benefits. The self-employed may contribute voluntarily. Obligatory sickness insurance gives right to receive insurance and sickness allowance after 30 days of continuous sickness insurance.

Work Accident Insurance (*składka wypadkowa*): contribution made by employers on the basis of the degree of accident risk faced by employees.

Labour Fund (*Fundusz Pracy*): contributions made by employers to finance unemployment benefits, pre-retirement allowances and vocational activation programmes for people looking for work and/or people threatened by job loss.

Health Insurance (*powszechne ubezpieczenie zdrowotne*): contributions made to finance benefits that cover preventive, diagnostic, therapeutical and rehabilitation costs. Practically all social groups are covered by obligatory health insurance. Health Insurance gives the right to medical care which ensures health protection, disease and contusions prevention, early detection of illnesses as well as disability prevention.

Farmer's old-age and disability Insurance (*składka emerytalno-rentowa rolników*): contribution made by *farmers* in each quarter of the year, at a rate of 30% of the basic monthly old age pension.

Farmer's accident, sickness and maternity Insurance (*składka na ubezpieczenie wypadkowe, chorobowe i macierzyńskie*): contribution made by farmers at a quarterly rate fixed by the *Farmers' Social Insurance Council* towards expenditures associated with accident, sickness and maternity benefits and prevention and rehabilitation costs.

Farmer's health insurance (*składka na ubezpieczenie zdrowotne rolników*): remains one of changes introduced in Polish social security system in January 2012, since then farmers are obliged to pay health insurance contributions that are deducted quarterly and calculated on monthly amount basis.

1.4 Taxes

Personal Income Tax (*podatek dochodowy od osób fizycznych*): from January 2009 it is imposed on individual incomes at a progressive rates of 18% and 32% (prior to this a 3 rate level was in operation: 19, 30 and 40%). A couple or a single parent may file taxes jointly, provided that for the whole tax year they did not earn income subjected to flat-rate taxation (an option available to the self-employed). A single parent or a couple making a joint tax declaration are allowed to set half of their taxable income against the tax schedule and then multiply the resulting tax due by two. Personal Income Tax however, does not apply to agricultural and self-employment incomes. Besides that, income from some other sources such as investments, incomes from property rent, interests, dividends or capital gains is taxed separately on a lump-sum basis.

Agricultural Tax (*podatek rolny*): is levied on ownership, co-ownership, possession and co-possession of agricultural arable lands or woods. Lands on which the agricultural tax is imposed are classified in the Register of Lands and Buildings. The tax base differs depending on whether land belongs to a farm or not. In case of farm land it is the number of *conversion hectares* (calculated on the basis of actual area, kind and quality of land and location in one of four tax zones, set depending on economic and climatic conditions of agricultural production). For other land it is the number of hectares.

Real Estate Tax (*podatek od nieruchomości*): is imposed on ownership, co-ownership, possession and co-possession of land, buildings, building structures and construction devices. Agricultural and forest lands do not fall within the scope of taxation. The tax base differs depending on the kind of real estate. Rates of Real Estate Tax are set by the appropriate community council but rates cannot exceed statutory limits.

Forestry Tax (*podatek leśny*): levied on forest land classified by the Register of Land and Building as forests, except for forests up to 40 years old, forests enlisted as relics or forests used for carrying out economic activities other than those connected with forestry. The tax base is the area of woodland given in hectares.

Tax Card (*karta podatkowa*): lump-sum tax from small-scale entrepreneurial activities in craft and retail trade. The tax office (*Urząd Skarbowy*) decides which enterprise/activity qualifies to pay taxes under this rule.

Lump sum tax from registered revenues (*zryczałtowany podatek dochodowy od przychodów*): is applied to selected registered revenues and may be paid by taxpayers who in the previous year raised revenue from an economic activity at the amount not exceeding 150,000 euro (506.625,00 zł). The lump-sum tax rates differ depending on the kind of revenues received. Regardless of the revenue, the lump sum tax on registered revenue is levied on taxpayers who start carrying out a given activity in the tax year and are not taxed in the form of tax card.

Tax on Goods and Services (*podatek od dóbr i usług VAT*): imposed on the supply of goods and services at each state of production and distribution process. Until January 2011 the basic rate was 22% and it was raised to 23%, which is applied to most goods and services. Reduced rates apply to some categories of goods with the lower rate applying particularly to unprocessed or semi processed products of agriculture, forestry, hunting and fishery. The 0% VAT rate used to a selected set of goods but it was raised to 5% in January 2011.

Gambling Tax (*podatek od gier losowych*): is levied on revenues from activities related to the establishment and performance of gambling and mutual bets. Taxable base and rates differ depending on the kind of conducted gambling activities. Rates range from a low of 2% for revenues from mutual bets on competition of animals to 45% for casino gambles and machine/video lotteries.

2. SIMULATION OF TAXES AND BENEFITS IN EUROMOD

2.1 Scope of simulation

In Table 2.1 benefits included in EUROMOD are divided into imputed ones, partially simulated, simulated and excluded ones. The lack of detailed information on contribution history is the main reason why values of some benefits are imputed from the dataset. In Table 2.2 taxes and social contributions are presented.

Table 2.1 Simulation of benefits in EUROMOD

	Variable name(s)	Treatment in EUROMOD					Why not fully simulated?
		2009	2010	2011	2012	2013	
Old-age pension	poa00	I	I	I	I	I	No data on contribution history
Disability Pension	pdi00	I	I	I	I	I	No data on contribution history
Survivor Pension:	psu00	I	I	I	I	I	No data on contribution history
Unemployment Benefits	bun_s	PS	PS	PS	PS	PS	Eligibility and amount depend on contribution history. Simulation takes eligibility from data
Pre-retirement benefit and Pre-retirement allowance	pyr	I	I	I	I	I	No data on contribution history
Maternity benefit	bma	I	I	I	I	I	No data on contribution history
Sickness Benefit	bhl	I	I	I	I	I	No data on contribution history
Care Benefit		E	E	E	E	E	No data on contribution history
Compensatory allowances		E	E	E	E	E	No data on contribution history
Funeral Benefit	psuot	I	I	I	I	I	No data on contribution history
Rehabilitation benefits	psuot	I	I	I	I	I	No data on contribution history
Social Pension	pdinw	I	I	I	I	I	No data on disability history
Nursing Supplement	poacm_s	S	S	S	S	S	
Nursing Benefit	pdiuc_s	S	S	S	S	S	
Family Allowance Supplement	bch00_s	S	S	S	S	S	
Supplement due to taking care of a child during child-care leave (parental leave allowance)	bchpl	I	I	I	I	I	No data on work history
Supplement for lone parents	bchlp_s	PS	PS	PS	PS	PS	Eligibility from data

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Supplement for child birth	bchba_s	S	S	S	S	S	
Supplement for large families	bchlg_s	S	S	S	S	S	
Supplement for starting the school year	bched_s	S	S	S	S	S	
Supplement for education outside place of living	bchot	I	I	I	I	I	No data on place of living
Supplement for education or rehabilitation of disabled child	bchdied_s	S	S	S	S	S	
Child Birth Allowance	bchuc_s	S	S	S	S	-	
Nursing Allowance	bchbamtna_s	-	-	-	-	S	
Special Nursing Allowance	bcrchdi_s	S	S	S	S	S	
Housing Benefits	bdinc_s	-	-	-	-	PS	No data on persons taking care of family member from outside the household
Permanent social assistance	bho_s	S/PS	S/PS	S/PS	S/PS	S/PS	Eligibility from data or full simulation
Temporary social assistance	bsapm_s	S	S	S	S	S	
Special Circumstances social assistance	bsatm_s	S	S	S	S	S	Eligibility is based on the wealth test
	bsaot	I	I	I	I	I	

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

Table 2.2 Simulation of taxes and social contributions in EUROMOD

	Variable name(s)	Treatment in EUROMOD					Why not fully simulated?
		2009	2010	2011	2012	2013	
Personal Income Tax	tin_s	S	S	S	S	S	
Corporate Income Tax		E	E	E	E	E	No information available
Agricultural Income Tax	tag_s	S	S	S	S	S	
Forestry Tax		E	E	E	E	E	No information available
Tax Card and lump-sum revenue		E	E	E	E	E	No information available
Gaming Tax		E	E	E	E	E	No information available
Tax on Goods and Services – VAT		E	E	E	E	E	
Excise Duty		E	E	E	E	E	
Old-age insurance		PS	PS	PS	PS	PS	Amounts contributed by the central government from benefits are not taken into account (except unemployemnt benefit)
Disability insurance		PS	PS	PS	PS	PS	Amounts contributed by the central government from benefits are not taken into account (except unemployemnt benefit)
Sickness Insurance	tsceehl_s	S	S	S	S	S	
Work Accident Insurance	tscerac_s tscerac_s	S	S	S	S	S	
Fund of Guaranteed Employee Benefits	tscerei_s	S	S	S	S	S	
Labour Fund	tscerui_s	S	S	S	S	S	
Health Insurance	thl_s	PS	PS	PS	PS	PS	Amounts contributed by the central government from benefits are not taken into account (except unemployemnt benefit)

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.

During period from 2009 to 2013 few structural changes of simulated policies occurred:

- health insurance contributions are levied on farmers since 2012 and are collected by Agricultural Social Insurance Fund;
- Child Birth Allowance became a means-tested benefit in 2013, due to that the benefit's output variable name has been changed from bchuc_s (non means-tested child birth allowance) to bchbamtna_s;
- in 2013 the new policy addressed to individuals who resign from employment or other paid job in order to take care of a dependant relative.

2.2 Order of simulation and interdependencies

Table 2.3 shows the order of simulation of Polish tax-benefit system in EUROMOD. Structural changes of policies in 2009-2013 included in the model's spine are reflected by on/off marks. Majority of policies are being simulated throughout whole given period with few exceptions of newly introduced policies like Farmers' Health Insurance contributions or Special Nursing Allowance. Two EUROMOD modules: yem_pl, output_hh_pl are switched off in the baseline. General structure of model's spine remains unchanged in given years.

At the very beginning of the model's spine, policy ConstDef_pl defines as constants monthly minimum wage, standard number of hours work per week and, tax-free amount. Further, the uprating factors, income lists and tax units are defined. Right after, negative values of self-employment income are recoded as zero. The policy yem_pl which in baseline is switched off makes possible the evaluation of applying minimum wage to all individuals reporting employment income below the existing minimum wage.

Because of the fact that Unemployment Benefit is subject to Social Security Contributions, the Unemployment Benefit values are simulated before Social Security Contributions. Social Security Contributions are calculated prior to Personal Income Tax. Social Security Contributions for individuals with permanent or temporary contracts for both employee's and employer's part of insurance are worked out in separate policy modules: sic_ee_pj_pl, sic_er_pj_pl – for individuals with permanent contract and sic_ee_tj_pl, sic_er_tj_pl – for individuals with temporary contract.

The farmers' Social Security Contributions and Health Insurance contributions which are domain of Agricultural Social Insurance Fund are calculated in policies sic_fr_pl and tax_hl_fr_pl. Health Insurance for farmers was introduced in year 2012.

Due to different treatment of self-employed conducting non-agricultural economic activity than employees on contracts & farmers, Social Security Contributions for self-employed are computed in yet another policy module, namely sic_se_pl.

Next, in policy modules: sic_ma_ee_pl, sic_ma_er_pl calculations of social security contributions for Maternity Benefit claimants are carried out, while module sic_un_pl returns values of contributions for Unemployment Benefit recipients.

After social security contributions, taxation policy related modules begin. Firstly, Capital Income Tax value is assessed (tax_kt_pl). Maximum value of potential Health Insurance tax credit is calculated in tax_hl_mx_pl policy. PIT tax base is the result of operations conducted in policy module tax_it_tb_pl. If there is a choice to decide whether to tax jointly or separately, individual tax amount from the output of tax_it_it_pl policy is compared with joint tax amount from output of tax_it_jt_pl policy module. Optimisation is performed in policy tax_it_pl which returns final simulated value of PIT. Thereafter, Health Insurance contributions payable to National Health Fund are evaluated in tax_hl_pl policy module.

The last of modelled taxes – agricultural tax is calculated in tax_ag_pl policy. After agricultural tax, imputation of farmers' income for the purpose of social assistance is done in ben_inc_pl policy.

The first benefit simulated after Social Security Contributions and income taxes is Nursing Supplement. It is simulated in policy pen_ns_pl in prior to Nursing Benefit (ben_nb_pl) and Family Allowance (ben_fa_pl). It is because of the fact that to become eligible to Nursing Benefit individual cannot receive Nursing Supplement. Nursing supplement is simulated before Family Allowance for the reason that its value is included in means-test for Family Allowance. To claim Family Allowance Supplements family must be eligible to Family Allowance, so it is natural order to simulate Family Allowance Supplements (ben_fas_pl) after main Family Allowance (ben_fa_pl).

Since the income criterion to Child Birth Allowance which became a means-tested benefit in 2013 uses the same income concept as Family Allowance, which includes Nursing Supplement, it is reasonable to simulate Child Birth Allowance (ben_cb_pl) after Nursing Supplement and Family Allowance with its supplements.

Next in order of simulation is Nursing Allowance (ben_na_pl) which cannot be claimed if person receives Unemployment Benefit. After Nursing Allowance, newly introduced in 2013 Special Nursing Allowance is calculated (ben_sna_pl). It has similar requirements as Nursing Allowance – claimant cannot receive Unemployment Benefit too, and additionally it is means-tested benefit which uses income concept from Family Allowance.

Later simulated is Housing Benefit (ben_ho_pl) because of income concept used as a mean-test which includes Unemployment Benefit, Family Allowance with its supplements, Nursing Benefit, Special nursing allowance.

The broadest income conception caused that the very last of simulated benefits are Permanent Social Assistance and Temporary Social Assistance, both simulated in policy ben_sa_pl. While means-test for Permanent Social Assistance takes into account Unemployment Benefit, Family Allowance with supplements, Nursing Benefit, Nursing Allowance, Special Nursing Allowance and Housing Benefit, the income concept used in mean-test for the purpose of Temporary Social Assistance includes additionally the value of Permanent Social Assistance. Temporary Social Assistance is the last of benefits simulated in the model.

Described order of simulation is justified. Family Allowance with supplements, Special Nursing Allowance, Housing Benefits and Social Assistance - all depend on net incomes after income tax due. They are therefore simulated after the simulation of income taxes and social security contributions.

Table 2.3 EUROMOD Spine: order of simulation, 2009 - 2013

Policy	2009	2010	2011	2012	2013	Description of the instrument and main output
ConstDef_pl	on	on	on	on	on	DEF: CONSTANTS
Uprate_PL	on	on	on	on	on	DEF: UPRATING FACTORS
ILDef_PL	on	on	on	on	on	DEF: INCOME CONCEPTS
TUDef_PL	on	on	on	on	on	DEF: ASSESSMENT UNITS
yse_pl	on	on	on	on	on	DEF: recode negative self-employment income to zero
yem_pl	off	off	off	off	off	INC: MINIMUM WAGE
bun_pl	on	on	on	on	on	BEN: Unemployment Benefit
sic_ee_pj_pl	on	on	on	on	on	SIC: Employee (permanent contract)
sic_er_pj_pl	on	on	on	on	on	SIC Employer (permanent contract)
sic_ee_tj_pl	on	on	on	on	on	SIC: Employee (temporary contract)
sic_er_tj_pl	on	on	on	on	on	SIC: Employer (temporary contract)
sic_fr_pl	on	on	on	on	on	SIC: Farmer
tax_hl_fr_pl	off	off	off	on	on	TAX: Farmers' health contribution
sic_se_pl	on	on	on	on	on	SIC: Self-employed
sic_ma_ee_pl	on	on	on	on	on	SIC: Maternity Leave Recipients (employee)
sic_ma_er_pl	on	on	on	on	on	SIC: Maternity Leave Recipients (employer)
sic_un_pl	on	on	on	on	on	SIC: Unemployment benefit recipient
tax_kt_pl	on	on	on	on	on	TAX: Tax on Capital Income
tax_hl_mx_pl	on	on	on	on	on	TAX: Maximum Health Insurance Tax
tax_it_tb_pl	on	on	on	on	on	TAX: Income Tax Base
tax_it_it_pl	on	on	on	on	on	TAX: Income Tax: Individual Taxation
tax_it_jt_pl	on	on	on	on	on	TAX: Income Tax: Joint Taxation
tax_it_pl	on	on	on	on	on	TAX: Income Tax: Optimisation
tax_hl_pl	on	on	on	on	on	TAX: Health Insurance
tax_ag_pl	on	on	on	on	on	TAX: Agricultural tax
ben_inc_pl	on	on	on	on	on	BEN: Farmers imputed income
pen_ns_pl	on	on	on	on	on	BEN: Nursing Supplement
ben_nb_pl	on	on	on	on	on	BEN: Nursing Benefit
ben_fa_pl	on	on	on	on	on	BEN: Family Allowance
ben_fas_pl	on	on	on	on	on	BEN: FA Supplements: child birth
ben_fas_pl	on	on	on	on	on	BEN: FA Supplements: starting school
ben_fas_pl	on	on	on	on	on	BEN: FA Supplements: education and rehabilitation
ben_fas_pl	on	on	on	on	on	BEN: FA Supplements: lone parent
ben_fas_pl	on	on	on	on	on	BEN: FA Supplements: large family
ben_cb_pl	on	on	on	on	on	BEN: Child Birth Allowance
ben_na_pl	on	on	on	on	on	BEN: Nursing Allowance
ben_sna_pl	off	off	off	off	on	BEN: Special Nursing Allowance
ben_ho_pl	on	on	on	on	on	BEN: Housing Benefit
ben_sa_pl	on	on	on	on	on	BEN: Permanent Social Assistance
ben_sa_pl	on	on	on	on	on	BEN: Temporary Social Assistance
output_std_pl	on	on	on	on	on	DEF: STD OUTPUT INDIV. LEVEL
output_hh_pl	off	off	off	off	off	DEF: STD OUTPUT HLD LEVEL

2.3 Policy switches

There are no switches used in the Polish model.¹

2.4 Social benefits

2.4.1 Unemployment benefit (*bun_s*)

- *Definitions*

The unemployment benefit covers unemployed people who have worked at least 1 year over the 18 months prior to the date of registration to the relevant labour office. The unit of analysis is an individual (tu_individual_pl)

- *Eligibility conditions*

To become eligible one has to meet certain conditions. First of all, the person must be registered as unemployed in the relevant labour office. Secondly, the labour office is not able to provide neither offers of employment nor trainings, internships or public works for unemployed individual. Moreover, unemployed person must have working history of at least 1 year of work over the 18 months prior to the date of registration as unemployed person, and the person had worked for a salary which was equal at least to monthly minimum wage.

- *Income test*

Not applicable.

- *Benefit amount*

Base amounts of unemployment benefit differ depending on period of payment. In the first three months individual is granted with higher amount of benefit [1] while in remaining months benefit amount is lowered [2].

Table 2.4 Base amount of Unemployment Benefit

Year	2009	2010	2011	2012	2013
Amount [1]	575.00	717.00	761.40	794.20	823.59
Amount [2]	575.00	563.00	592.20	623.60	646.67

Note: PLN per month

Source: Ministry of Labour and Social Policy

The duration of unemployment benefit payment period can be either 6 or 12 months. Benefit is granted for the period of 6 months in areas where unemployment rate is less than 150% of national average. 12 months benefit period is applied in areas where an unemployment rate is at least equal to 150% of national average, or if individual is over 50 years old and has working history period of at least 20 years, or if the claimant's spouse is unemployed too and not eligible to unemployment benefit and they have at least one dependent child under the age of 15.

In addition, base amounts of unemployment benefits are subject to further increase/decrease conditional on duration of working history. As it was mentioned, to claim the unemployment benefit one has to meet the criterion of work history of at least 1 year. If the work history period is less than 5 years, the benefit amount is 80% of base benefit amount and if one has work

¹ Policy switches are denoted with 'switch' in the policy spine (for a given policy year), while their default values (*on* or *off*) are set in a separate dialogue box in the model.

history period of at least 20 years of work, the benefit amount is 120% of base benefit amount. In other cases the base benefit amount is granted.

- ***EUROMOD notes***

Simulation of Unemployment Benefit takes the eligibility from the data. In the simulation process, only those individuals who reported positive values of Unemployment Benefit (bun > 0) can be granted with the benefit (partially simulated).

2.4.2 Nursing Supplement (*poacm_s*)

- ***Definitions***

The nursing supplement provides support to pensioners age over 75 with severe disability. The unit of analysis is an individual (tu_individual_pl)

- ***Eligibility conditions***

All pensioners aged 75 and more or those pensioners diagnosed with severe disability. This is non means-tested benefit.

- ***Income test***

Not applicable.

- ***Benefit amount***

Table 2.5 Nursing Supplement

Year	2009	2010	2011	2012	2013
Amount	163.15	173.10	186.71	195.67	203.05

Note: PLN per month

Source: Ministry of Labour and Social Policy

2.4.3 Nursing Benefit (*pdiuc_s*)

- ***Definitions***

The nursing benefit is a universal (non-contributory) benefit for disabled people. The unit of analysis is the individual. If the entitled person is a child, the benefit is paid to the parent/guardian (tu_individual_pl or tu_fa_bna_pl).

- ***Eligibility conditions***

It is a universal (non-contributory) benefit for disabled children, severe disabled working-age adults, severe disabled pensioners and people aged 75 or more with no disability. It is incompatible with receiving Nursing Supplement – only one of these can be received at any time.

- ***Income test***

Not applicable.

- **Benefit amount**

Table 2.6 Nursing Benefit

Year	2009-2013
Amount	153.00

Note: PLN per month

Source: Ministry of Labour and Social Policy.

- **EUROMOD notes**

In prevailing legislation moderately disabled persons above the age of 16 are eligible for Nursing Benefit on condition that disability occurred before that person turned 21. Since it is not possible to derive such information from input database, all moderately disabled persons over 16 are granted with Nursing Benefit in the model.

2.4.4 Family Allowance (*bch00_s*)

- **Definitions**

This is an income-tested child benefit that requires the presence of dependent children in the family (*tu_fa_bfa_pl*).

- **Eligibility conditions**

Family allowance is granted to families with dependent children and income lower than a specified threshold. Dependent children are defined as aged up to 18 or up to 21 and in secondary school or below 24 if continues education and holds a certificate of disability.

- **Income test**

The benefit is means-tested over the previous year using the personal income tax form. Net income (net of social security contributions, health insurance contributions and income tax payments) per capita must be below a threshold [1] that is larger [2] if there is a disable child in the family. The income test for farmers is applied on imputed income equal to the number of converted hectares times a specified amount [3].

Table 2.7 Family Allowance thresholds

Year	2009	2010	2011	2012	2013
Regulation	1.09.2008	1.11.2009	1.11.2010	1.11.2011	1.11.2012
period	-	-	-	-	-
	31.10.2009	31.10.2010	31.10.2012	31.10.2012	31.10.2013
[1]	504.00	504.00	504.00	504.00	539.00
[2]	583.00	583.00	583.00	583.00	623.00
[3]	185.00	171.33	159.00	189.83	226.08

Note: PLN per month

Source: Ministry of Labour and Social Policy

- **Benefit amount**

Until 2006 amount per child was different according to the number of children. The amount for the first and the second child [1] was lower than for the third [3] which was also lower than for the fourth and subsequent children.

Since 1st of September 2006 amount per child differs by the age of children. The lowest amount is granted for a child up to 5 years old [1] and it is higher for children between 5 and 18 years [2] and for those between 18 and 24 years old [3].

Payment period is from 1st of September till 31st of August.

Table 2.8 Family Allowance – benefit levels

Year	2009	2010	2011	2012	2013
Regulation period	1.09.2008	1.11.2009	1.11.2010	1.11.2011	1.11.2012
	-	-	-	-	-
	31.10.2009	31.10.2010	31.10.2012	31.10.2012	31.10.2013
[1]	48.00	68.00	68.00	68.00	77.00
[2]	64.00	91.00	91.00	91.00	106.00
[3]	68.00	98.00	98.00	98.00	115.00

Note: PLN per month

Source: Ministry of Labour and Social Policy

2.4.5 Supplement for Large Families (*bchlg_s*)

- **Definitions**

The supplement for large families provides support for families with three or more children. This benefit requires the presence of dependent children in the family (*tu_fa_bfa_pl*).

- **Eligibility conditions**

Supplement for Large Families is granted to the one of the parents in a family with at least three children. To receive this form of support the family must be eligible to the Family Allowance.

- **Income test**

To become eligible to the Supplement for Large Families the claimant must be entitled to the Family Allowance (*bch00_s*) where respective income test applies (as described in point 2.2.4).

- **Benefit amount**

The supplement paid per child amount at 80.00PLN per month.

Table 2.9 Family Allowance Supplement for Large Families

Years	2009-2013
Amount	80.00

Note: PLN per month

Source: Ministry of Labour and Social Policy

2.4.6 Supplement for Child Birth (*bchba_s*)

- **Definitions**

The Supplement for child birth integrates the Family Allowance of families with children under 1 year of age.

- **Eligibility conditions**

Families with children (tu_fa_bfa_pl) less than 1 year old and eligible to the main family allowance are also eligible to a supplement for Child Birth.

- **Income test**

To become eligible to the Supplement for Child Birth the claimant must be entitled to the Family Allowance (bch00_s) where respective income test applies (as described in point 2.2.4)

- **Benefit amount.**

Table 2.10 Family Allowance Supplement for Child Birth

Years	2009-2013
Amount	1,000.00

Note: One-off payment, PLN
Source: Ministry of Labour and Social Policy

2.4.7 Supplement for Starting School Year (*bched_s*)

- **Definitions**

The supplement for starting school year integrates the family allowance of families with children due to start of the school year. It aims at supporting families to meet the costs of buying schoolbooks and other material for the child starting the school year. This benefit requires the presence of dependent children in the family (tu_fa_bfa_pl).

- **Eligibility conditions**

Only one parent of the dependent child aged under 20 starting school year is eligible. The child must be attending either primary school, lower secondary school or upper secondary school. The benefit is paid once per year per child attending any grade of mentioned school types.

- **Income test**

To become eligible to the Supplement for Starting School Year the claimant must be entitled to the Family Allowance (bch00_s) where respective income test applies (as described in point 2.2.4)

- **Benefit amount.**

Table 2.11 Family Allowance Supplement for Starting School Year

Years	2009-2013
Amount	100.00

Note: One-off payment, PLN
Source: Ministry of Labour and Social Policy

2.4.8 Supplement for Education or Rehabilitation of Disabled Child (*bchdied_s*)

- **Definitions**

This supplement supports families with disabled children below age 24. It requires the presence of dependent children in the family (tu_fa_bfa_pl).

- **Eligibility conditions**

The benefit can be paid either to the father or the mother in families with disabled children aged below 24 years.

- **Income test**

To become eligible to the Supplement for Education or Rehabilitation of Disabled Child the claimant must be entitled to the Family Allowance (bch00_s) where respective income test applies (as described in point 2.2.4).

- **Benefit amount**

The amount of the benefit is different depending on whether the disabled child is aged below 5 years [1] or between 5 and 24 [2].

Table 2.12 Family Allowance Supplement for Education or Rehabilitation of Disabled Child

Years	2009-2013
[1]	60
[2]	80

Note: PLN per month

Source: Ministry of Labour and Social Policy

2.4.9 Supplement for Lone Parents (*bchlp00_s*)

- **Definitions**

This is a supplement for lone parent families that are meeting the low income criterion. It requires the presence of dependent children in the family (tu_fa_bfa_pl).

- **Eligibility conditions**

Lone parent families who are eligible for Family Allowance are also eligible for this supplement. It may not be combined with a social pension for a child.

- **Income test**

To become eligible to the Supplement for Lone Parents the claimant must be entitled to the Family Allowance (bch00_s) where respective income test applies (as described in point 2.2.4).

- **Benefit amount**

The amount of the benefit per child is reported in the table below [1]. A higher amount is paid for disable children [2].

Table 2.13 Family Allowance Supplement for Lone Parents

Years	2009-2013
[1]	170
[2]	250

Notes: PLN per month, From 1.09.2006 benefit amount per all children must be below 340 and in case of disabled children must be below 500 PLN

Source: Ministry of Labour and Social Policy

2.4.10 Child Birth Allowance (*bchbamtna_s*)

- *Definitions*

The child birth allowance is paid to parents of new-born children. This benefit requires the presence of dependent children in the family (*tu_fa_bfa_pl*).

- *Eligibility conditions*

Parents of new-born children, since 2013 one need to meet the eligibility income test.

- *Income test*

Since 1.01.2013 parents of new-born children must meet the income criteria of net income per capita below the amount of 1922 PLN per month.

- *Benefit amount*

One-time payment per eligible child – the benefit amount is 1000 PLN.

2.4.11 Nursing Allowance (*berchdi_s*)

- *Definitions*

This benefit supports families with disabled children whose parents take voluntarily leave to care about the child. It requires the presence of dependent children in the family (*tu_fa_bna_pl*).

- *Eligibility conditions*

Until 2010 nursing benefit was a means-tested benefit for parents voluntarily on leave to take care of a disabled child and not receiving unemployment benefit or pre-retirement pension. From 01.01.2010 the income test for the benefit no longer exists.

- *Income test*

Since 1.01.2010 this allowance is not means-tested.

- *Benefit amount*

Fixed amount independently of the number of disabled children (increase since July 2013). Additional amount of 100 PLN per month payable for eligible individuals since January to June 2013 plus another extra 200 PLN per month for individuals taking up the benefit from April to December 2013.

- *EUROMOD notes*

It is assumed that parent of disabled dependent child who is inactive decides to take up Nursing Allowance.

Table 2.14 Nursing Allowance

Year	I-X. 2009	XI-XII. 2009	2010	2011	I-VI. 2012	VII-XII. 2012	2013
Amount	420	520	520	520	520	620	820

Note: PLN per month

Source: Ministry of Labour and Social Policy

2.4.12 Special Nursing Allowance (*bdinc_s*)

- *Definitions*

This policy is prevailing since 01.01.2013 and it is addressed to relatives taking care of their dependant relatives (*tu_fa_pl*).

- *Eligibility conditions*

This benefit is granted to individuals voluntarily on leave, who were not receiving unemployment benefit or pre-retirement pension and took care of their disabled relatives.

- *Income test*

Net income per capita in a family of individual taking care of relative added up to net income in the family of dependant relative below the amount of 623 PLN per month.

- *Benefit amount*

520 PLN per month

- *EUROMOD notes*

Due to limited information in input data, it is impossible to simulate part of Special Nursing Allowance payments that are transferred to those individuals who are voluntarily on leave and taking care of their disabled relatives from outside their households.

2.4.13 Housing Benefit (*bho_s*)

- *Definitions*

Family or household level benefit meant to support families with their housing expenditures. Expenses include rent and other housing related bills (gas, electricity, heating, water, etc.).

- *Eligibility conditions*

This is an income-tested benefit with additional restrictions concerning flat size. The size limit for a 1 person household is 35 m². However the limit may be increased by 30% with proportional decrease in the amount of the benefit. The limits are given in the table below.

Table 2.15 Housing Benefit flat area limits

Number of people in household	Flat area	Extended flat area
1 person	35 m ²	+ 30% = 45,5 m ²
2 people	40 m ²	+ 30% = 52 m ²
3 people	45 m ²	+ 30% = 58,5 m ²
4 people	55 m ²	+ 30% = 71,5 m ²
5 people	65 m ²	+ 30% = 84,5 m ²
(5+n) people	65 m ² +n*5 m ²	+ 30% = 84,5 m ² +(n*30%*5) m ²

Source: *Ustawa z dn. 21 czerwca 2001 r. o dodatkach mieszkaniowych*. Dz.U. 2001 nr 71 poz. 734

Besides income-test, another form of eligibility test is undertaken too. Employees of local entity which is administering housing benefits can verify material situation of the applicants

during home visit. If during such a visit it would be noticed that the material situation within the household is better than the situation assessed through the mean-test, the application for housing benefit would be rejected.

- **Income test**

To qualify for the housing benefit, housing income per capita for the last quarter must be below 150% of the Minimum Pension for a multi-person household and 175% for a one-person household. Income is gross income minus revenue costs, social security contributions, health insurance contributions and family benefits. Income tax is not deducted from the income. Social assistance is not included in the income test.

Farmers' income is computed on the basis of equivalence hectares and is augmented by the amount of family benefits.

Table 2.16 Minimum Pension values

Year	2009	2010	2011	2012	2013
Amount	675.10	706.29	728.18	799.18	831.15

Note: PLN per month

Source: Social Insurance Institution

- **Benefit amount**

The amount is equal to the difference between expenditures and a fraction of the income. The fraction of the income depends on household size and per capita income. The eligible amount is computed as:

$$HB = E - K * (Y_{HB})$$

where k equal to 10%, 12%, 15% or 20%.

The minimum HB amount must be above 2% of minimum old-age pension.

Table 2.17 Housing Benefit – housing costs parameters

	<u>One person hh</u>		<u>2-4 people in the hh</u>		<u>5+ people in the hh</u>	
Income	Below 150%	[150%,175%]	Below 100%	[100%,125%]	Below 100%	[100%,125%]
K	15%	20%	12%	15%	10%	12%

Source: Ustawa z dn. 21 czerwca 2001 r. o dodatkach mieszkaniowych. Dz.U. 2001 nr 71 poz. 734

- **EUROMOD notes**

Eligibility test for the Housing Benefit consists of two stages: the income-test and the home visit by housing benefit officer. If during the visit housing benefit officer would assess that household's material situation is better than situation evaluated in the income test the application for housing benefit would be rejected. The results of home visits paid by housing benefit officers are not modelled in EUROMOD. Due to that fact in the model it is assumed that housing benefit is being transferred to those households that declare eligibility to housing benefit in input dataset

2.4.14 Permanent Social Assistance (*bsapm_s*)

- *Definitions*

The permanent allowance is a specific permanent Social Assistance allowance for a person incapable of working due to disability or age, who is not entitled to social insurance invalidity pension (*tu_fa_bsa_pl*). The benefit constitutes a complement to income, up to the amount of a specified income criterion.

- *Eligibility conditions*

To be eligible one must have disability of significant or moderate degree or be unable to work due to age, whereby the age limit is 60 for women and 65 for men. Since October 2012 per capita income must be below 542 PLN [1] for one person household and 456 PLN [2] for more than one person household.

- *Income test*

If an individual is not a farmer the income test is based on net income per capita (excludes investment income, incidental benefits), and if individual is a farmer the income measure is hectare-based imputed earnings plus non-work income.

- *Benefit amount*

The amount corresponds to the difference between a threshold and total household income. The amount of permanent allowance may not be lower than 30 PLN per month.

Table 2.18 Permanent and Temporary Social Assistance thresholds

Year	2009	2010	2011	I-IX. 2012	X-XII. 2012	2013
[1]	477	477	477	477	542	542
[2]	351	351	351	351	456	456

Note: PLN per month

Source: Ministry of Labour and Social Policy

2.4.15 Temporary Social Assistance (*bsatm_s*)

- *Definitions*

A grant made to persons who are experiencing financial problems (income lower than the specified legal income criterion), caused by unemployment, chronic illnesses(s), or disability; or to persons who have incomes lower than the Social Assistance threshold and are still ineligible for social protection (*tu_fa_bsa_pl*).

- *Eligibility conditions*

To be eligible a household income per capita must be below the specified threshold and a household must pass informal test conducted by a Local Social Assistance Representative. The income thresholds are the same as in Permanent Social Assistance.

- *Income test*

The income concept is the same as for Permanent Social Assistance.

- *Benefit amount*

The amount corresponds to the difference between a threshold and total household income with a threshold calculated as for Permanent Social Assistance.

Table 2.19 Permanent and Temporary Social Assistance thresholds

Year	2009	2010	2011	I-IX. 2012	X-XII. 2012	2013
[1]	477	477	477	477	542	542
[2]	351	351	351	351	456	456

Note: PLN per month.

Source: Ministry of Labour and Social Policy

- *EUROMOD notes*

Eligibility test conducted by a Local Social Assistance Representative

The payment of Social Assistance is conditional on an assessment by the Local Social Assistance Centre (MOPS). Thus although there is no official wealth or assets test, a visit by the MOPS representative acts as such an informal test. In the model we introduce a type of wealth-test to mimic the local authority discretion concerning the eligibility assessment.

We estimate a probability (probit) model of receiving temporary social assistance on a set of household characteristics for the entire population. Exogenous variables include: flat size, region, number of people living in household, dummies for possession of colour TV set, computer, washing machine, bath shower, capacity to face unexpected financial expenses, capacity to afford paying for one week annual holiday away from home.

The estimates are then used to generate an expected receipt probability value for each household and we set a uniform wealth threshold above which a family is eligible to receive the assistance conditional on passing also the income means-test. The threshold is calibrated in order to reflect the correct number of recipients of temporary social assistance according to official statistics.

Central versus local funding of Temporary Social Assistance:

The Central Government is obliged to pay 50% [1] of eligible amount in case of multi-person household and 50% [2] in a case of single-person household (co_bsatefna) while the rest of the eligible amount may be paid by the local government. In the model it is assumed that local government pays 7% [3] of the amount at its disposal due (co_bsatefmu).

The model allows to choose between the effective amount (co_bsatefna+co_bsatefmu) and the entitled amount (co_bsatefna).

Table 2.20 Temporary Social Assistance – central funding proportion

Year	2009	2010	2011	2012	2013
[1]	50%	50%	50%	50%	50%
[2]	50%	50%	50%	50%	50%
[3]	7%	7%	7%	7%	7%

Source: Ministry of Labour and Social Policy

2.5 Social contributions

2.5.1 Employee social contributions

- *Liability to contributions*

Social security contributions are paid by both the employer and the employee. While old-age pension insurance and disability insurance contributions are levied on employee and employer, sickness insurance is being paid only by employee. Tax unit for the purpose of employee's social contributions is tu_individual_pl.

- *Income base used to calculate contributions*

All rates are applied to the same income base, which is gross income, defined as:

$$\text{gross income} = \text{net income} + \text{IT} + \text{HI} + \text{employee part of SSCs}$$

where: IT – personal income tax; HI – health insurance contributions

Gross income does not include the part of social security contributions, which is paid by the employer.

Incomes from temporary labour contracts may or may not be included in the social security income base. With minor exceptions, a temporary job income is excluded from the SSC income base if the job is performed in addition to a permanent job and it is performed for a different employer than the permanent job. Due to the lack of detailed data, all temporary work incomes earned in addition to permanent work incomes are excluded from the social security income base. Some forms of labour incomes, such as compensation of corporate supervisory board members, are excluded from the SSC income base, even though they are part of the gross income for the purpose of income tax. Old-age pension insurance and disability insurance contributions are also paid on unemployment benefits and maternity benefits. Other benefits are excluded from social security contributions.

For the purpose of old-age pension insurance and disability insurance contributions, the gross income base is limited: contributions are paid as long as the annual cumulative gross income is below a threshold. The threshold is computed as 30 times the average monthly wage indicator, estimated for a given year by the government and published in the state budget.

Table 2.21 Old-age pension and disability insurance – income thresholds (annual in PLN)

	2009	2010	2011	2012	2013
Threshold for old-age pension insurance and disability insurance	95,790	94,380	100,770	105,780	111,390

Source: Social Insurance Institution

- *Contribution rates*

Table 2.22 Employee social security contribution rates (01.01.2009 – 31.01.2013)

	Period	Total contribution rate (%)	Employee rate (%)	Income base limit
Old-age pension insurance	01.01.2009			
	–	19.52	9.76	gross income
	31.01.2013			
Disability insurance	01.01.2009			
	–	6.00	1.5	gross income
	31.01.2012			
	01.02.2012			
Sickness Insurance	–	8.00	1.5	gross income
	31.12.2013			
	01.01.2009			
	–	2.45	2.45	gross income
	31.12.2013			

Source: Zakład Ubezpieczeń Społecznych: *Wysokość składek na ubezpieczenia społeczne*: <http://www.zus.pl/default.asp?p=4&id=35> (last access 08.04.2014)

2.5.2 Employer social contributions

- *Liability to contributions*

Employers share the burden of old-age pension insurance and disability insurance contributions together with employees. However, Work accident insurance, contributions to Labour Fund & Fund of Guaranteed Employee's Benefits are levied only on employers. Tax unit used for the purpose of employer's social contributions is tu_individual_pl.

- *Income base used to calculate contributions*

Gross income described in the section devoted to employee social contributions does not include the part of social security contributions, which is paid by the employer. The total cost to the employer is therefore gross income plus the employer's part of social security contributions. For the purpose of assessment of employer's social contributions the same income thresholds as in case of employee's contributions are being applied.

- *Contribution rates*

Table 2.23 Employer social security contribution rates (01.01.2009 – 31.12.2013)

	Year	Total contribution rate (%)	Employer rate (%)	Income base limit
Old-age pension insurance	01.01.2009			
	–	19.52	9.76	gross income
Disability insurance	31.12.2013			
	01.01.2009			
	–	6.00	4.5	gross income
	31.01.2012			
Sickness Insurane	01.02.2012			
	–	8.00	6.5	gross income
	31.12.2013			
Work accident insurance	01.01.2009			
	–	2.45	–	gross income
Labour Fund	31.12.2013			
	01.01.2009			
	–	from 0.67 to 3.33	0.67 – 3.33	gross income
	31.03.2012			
Fund of Guaranteed Employee Benefits	01.04.2012			
	–	from 0.67 to 3.86	0.67 – 3.86	gross income
	31.12.2013			
Labour Fund	01.01.2009			
	–	2.45	2.45	gross income
Fund of Guaranteed Employee Benefits	31.12.2013			
	01.01.2009			
Fund of Guaranteed Employee Benefits	–	0.10	0.10	gross income
	31.12.2013			

Source: Zakład Ubezpieczeń Społecznych: *Wysokość składek na ubezpieczenia społeczne*: <http://www.zus.pl/default.asp?p=4&id=35> (last access 08.04.2014)

2.5.3 Social contributions for farmers

- *Liability to contributions*

Individual farmers and their families, who conduct farming activities on their own behalf, are eligible for social insurance according to Agricultural Social Insurance Fund (KRUS) principles. The KRUS contributions are quarterly lump-sum payments. Old age pension and disability insurance contributions are jointed together while for the purpose of work accident insurance, sickness insurance and maternity insurance individual have to pay other set of contributions.

- *Income base used to calculate contributions*

The fact of being a farmer conducting an agricultural activity on area of size of at least 1 conversion hectare is condition required to be eligible for social security contributions for farmers.

- *Contribution rates*

People insured in KRUS paid the following quarterly amounts of contributions, per person in PLN:

Table 2.24 Old age pension and disability insurance contribution rates of KRUS (1st quarter 2009 – 3rd quarter 2009)

Old-age pension and disability insurance	1 st quarter	2 nd quarter	3 rd quarter	4 th quarter
2009	191.0	203.0	203.0	–

Source: Kasa Rolniczego Ubezpieczenia Społecznego: *KRUS w liczbach*: <http://www.krus.gov.pl/krus/krus-w-liczbach/> (last access 08.04.2014)

Starting from October 2009 amounts of contributions (paid by people insured in KRUS) have changed and have been subjected to the size of farm:

Table 2.25 Old age pension quarterly amounts for farmers conditional on farm area (4th quarter 2009 - 4th quarter 2013)

Year	Quarter	Farm's size				
		up to 50 ha	50ha – 100ha	100ha – 150ha	150ha – 300ha	more than 300 ha
2009	4 th	204	447	690	933	1176
2010	1 st	204	447	690	933	1176
2010	2 nd	213	468	723	975	1230
2010	3 rd	213	468	723	975	1230
2010	4 th	213	468	723	975	1230
2011	1 st	213	468	723	975	1230
2011	2 nd	219	480	744	1005	1269
2011	3 rd	219	480	744	1005	1269
2011	4 th	219	480	744	1005	1269
2012	1 st	219	480	744	1005	1269
2012	2 nd	240	528	816	1104	1392
2012	3 rd	240	528	816	1104	1392
2012	4 th	240	528	816	1104	1392
2013	1 st	240	528	816	1104	1392
2013	2 nd	249	549	846	1146	1446
2013	3 rd	249	549	846	1146	1446
2013	4 th	249	549	846	1146	1446

Source: Kasa Rolniczego Ubezpieczenia Społecznego: *KRUS w liczbach*: <http://www.krus.gov.pl/krus/krus-w-liczbach/> (last access 08.04.2014)

Table 2.26 Work Accident, sickness and maternity insurance contribution rates of KRUS (1st quarter 2009 – 4th quarter 2013)

Work accident, sickness and maternity insurance	1 st quarter	2 nd quarter	3 rd quarter	4 th quarter
2009	78.0	90.0	90.0	90.0
2010	90.0	90.0	108.0	108.0
2011	108.0	126.0	126.0	126.0
2012	126.0	126.0	126.0	126.0
2013	126.0	126.0	126.0	--

Source: Kasa Rolniczego Ubezpieczenia Społecznego: *KRUS w liczbach*: <http://www.krus.gov.pl/krus/krus-w-liczbach/> (last access 08.04.2014)

2.5.4 Self-employed social contributions

- *Liability to contributions*

Self-employed conducting non-agricultural economic activity.

- *Income base used to calculate contributions*

The income base for this form of employment is self-declared, with a minimum declared income base set at 60% of the average monthly gross income anticipated in given year. The rates of SSCs for self-employed (entrepreneurs) are the sum of the rates for employee and employer. Sickness insurance for the self-employed is voluntary.

- *Contribution rates*

Table 2.27 Self-employed social contributions (2009-2013)

Year	Minimum income base	Old-age pension insurance	Disability insurance	Sickness insurance	Work accident insurance	Labour Fund
2009	1,915.80	373.96	114.95	46.94	31.99	46.94
2010	1,887.60	368.46	113.26	46.25	34.43	46.25
2011	2,015.40	393.41	120.92	49.38	33.65	49.38
2012	2,115.60	412.97	169.25	51.83	40.83	51.83
2013	2,227.80	434.87	178.22	54.58	43.00	54.58

Note: PLN per month

Source: Zakład Ubezpieczeń Społecznych: http://www.zus.pl/files/minimalna_podstawa.pdf (last access 08.04.2014)

- *EUROMOD notes*

While sickness insurance for the self-employed is voluntary and the income base for this form of employment is self-declared (with a minimum declared income base set at 60% of the average monthly gross income anticipated in given year), we assume that all self-employed minimize their SSC contributions by declaring the minimum income base and by opting out of the sickness insurance.

There is also a case of 30% multiplier that is used to assess social security contributions liability for self-employed who are either disabled or are conducting non-agricultural economic activity for less than 24 months. Those self-employed who fulfil those requirements instead of rate of 60% use rate of 30% to assess their social security contribution base. Rate of 30% is not modelled in EUROMOD.

Accident insurance rate is assumed to be 1.93%. which is the rate for entrepreneurs who hire less than 9 persons.

2.5.5 Health insurance contributions

Employee's health insurance contributions:

- *Liability to contributions*

In general, individuals liable to employee social security contributions are obliged to pay health insurance contributions.

- *Income base used to calculate contributions*

Health insurance (HI) contributions are considered to be social security contributions, however, they are calculated according to different principles. While sickness insurance finances replacement benefits during prolonged sickness or maternity leave, health insurance finances the National Health Fund, which is the public healthcare management institution.

The income base for HI contributions for work contracts is lower than for SSCs; it is equal to the gross income minus the employee part of SSC. i.e.

$$\text{HI income base} = \text{net income} + \text{IT} + \text{HI} = \text{gross income} - \text{employee part of SSC}$$

- *Contribution rates*

HI contributions are linked to the personal income tax (IT) in two ways. First, the HI dues paid on any particular work contract cannot exceed the IT dues paid on that contract. Second, 7.75% of the HI income base are deducted from the calculated IT dues. In other words:

- if the calculated IT dues are lower than 7.75% of the HI income base then the actual HI dues are equal to the calculated IT dues and the actual IT paid is zero;
- if the calculated IT dues exceed 7.75% of the HI income base, but does not exceed 9.0% of the HI income base, then the actual HI dues are equal to the calculated IT dues, while actual IT dues are equal to the difference between the calculated IT dues and the amount of deduction (7.75% of the HI income base)
- if the calculated IT dues exceeds 9% of the HI income base, then the actual HI dues are equal to 9.0% of the HI income base, while the actual IT dues are equal to the difference between the calculated IT dues and the amount of deduction (7.75% of the HI income base).

Table 2.28 Employees' health insurance rates (2009 - 2013)

Year	HI Paid	HI Deducted
2009-2013	9.00 %	7.75 %

Source: Ministry of Health

Health insurance contributions for self-employed:

- *Liability to contributions*

Self-employed conducting non-agricultural economic activity.

- *Income base used to calculate contributions*

The self-employed pay the health insurance contributions according to the same rates and personal income tax deduction rules as employees. However, just like in the case of SSCs a minimum HI income tax base limit applies, which results in the self-employed paying a lump-sum amount of contributions. Interestingly, the HI income base limit is higher than the SSC income base limit (75% of the average monthly gross income in business sector in the previous year's last quarter, instead of 60% of the overall average monthly gross income anticipated in the given year), even though the HI income base for work contracts is lower than the SSC income base. In addition HI dues for self-employed can exceed IT dues, but still only 7.75% of the HI income base limit can be deducted from the income tax dues.

- *Contribution rates*

Table 2.9 Health Insurance for self-employed (monthly)

Year	Period	HI income base limit	HI dues	IT-deductible dues
2009	Jan- Feb	2,392.76	215.35	185.44
	Mar-Dec	2,491.57	224.24	193.10
2010	Jan- Dec	2,592.46	233.32	200.92
2011	Jan-Dec	2704.31	243.39	209.58
2012	Jan-Dec	2828.21	254.55	219.19
2013	Jan_Dec	2908.13	261.73	225.38

Note: PLN per month

Source: Ministry of Health

Farmers' health insurance contributions:

- *Liability to contributions*

Since the changes in the act that defines rules of the farmer's health insurance system that were introduced in Poland in January 2012, farmer's health insurance contributions are no longer paid from budgetary funds to such extent as before the changes. Instead of farmer's health insurance contributions paid from national budget, farmers now are obliged to pay health insurance contributions from their own funds depending on their farm size measured in conversion hectares and type of agricultural activity (with some exceptions).

Farmers' health insurance contributions are paid each quarter in the same periods as described in case of farmers' old-age pension, disability, work accident, sickness and maternity insurance. To become liable to farmers' health insurance contributions one has to meet certain criteria like:

- to be a person eligible for farmers' social security contributions or to be an inmate closely related to such person;
- be a farmer or farmer's inmate not eligible for social contributions from Social Insurance Fund;
- be a person eligible for old-age/disability pension from Farmers Social Insurance Institution;
- be family members of farmers, farmers' inmates, pensioners from Farmers Social Insurance Institution, who are not eligible for health insurance on basis of employee/self-employed health insurance system.

- *Income base used to calculate contributions*

Farmers' health insurance contributions are calculated on basis of area of arable land measured in conversion hectares.

- *Contribution rates*

According to the new rules, farmers' health insurance monthly contribution amounts to 1 PLN per insured farmer and 1 PLN per household member in particular agricultural holding, multiplied by number of conversion hectares. If the farm's size is less than 6 conversion hectares health insurance contributions are paid from budgetary funds. Moreover, farmers' health insurance contribution amounts vary depending on whether farm is ran jointly with production in special agricultural sector or only in self-contained special sector of agricultural production.

Table 2.30 Farmers' health insurance monthly contribution rates depending on type of agricultural holding and insured person's status (from February 2012)

Type of agricultural holding	Insured farmer	Household member
Farm sized less than 6 conversion hectares	financed from budget	financed from budget
Farm sized 6 or more conversion hectares	1 PLN per person multiplied by number of conversion hectares	1 PLN per person multiplied by number of conversion hectares
Farm sized less than 6 conversion hectares jointly with production in special agricultural sector	9% of declared income from activity in special sector of agricultural production (not less than 9% of minimal wage) per person	financed from budget
Farm sized 6 or more conversion hectares jointly with production in special agricultural sector	9% of declared income from activity in special sector of agricultural production (not less than 9% of minimal wage) per person	1 PLN per person multiplied by number of conversion hectares
Self-contained special sectors of agricultural production	9% of declared income from activity in special sector of agricultural production (not less than 9% of minimal wage) per person	9% of base amount of 33,4% of average salary in non-financial corporations sector in 4 th quarter of previous year per person

Source: Kasa Rolniczego Ubezpieczenia Społecznego:

<http://www.krus.gov.pl/komunikaty/dokument/artykul/ubezpieczenie-zdrowotne-rolnikow-pozmianach-od-1-lutego-2012/> (last access 08.04.2014)

2.6 Personal income tax

2.6.1 Tax unit

Personal income tax in Poland is an individual system, but couples (as well as single parents), can file a joint tax return. In case of joint filing, the tax is levied on the average taxable income, and then the tax dues are multiplied by two. This can lower the tax liability if the two persons individually would fall into different income brackets. For example, if one of these individuals has no income or almost no income in a given year, they benefit from joint filing by claiming two universal tax credits.

2.6.2 Exemptions

The list of tax-exempt incomes includes more than 100 categories, most importantly:

- non-contributory benefits (social assistance, family benefits and housing benefits),
- disability pensions for war veterans,
- student scholarships,
- alimonies paid to children.

Regular old-age and disability pensions are not tax exempt. Income from farm activity or self-employment is taxed according to special rules, described in a separate section below.

Incomes from capital gains are taxed according to separate rules, described in the separate section below.

2.6.3 Tax allowances

In 2009 the list of tax allowances included:

- revenue costs,
- charitable donations,
- housing loan (mortgage) interest,
- medical rehabilitation expenses,
- internet access expenses.
- purchase of new technologies,
- tax deduction for volunteer blood-donors.

From tax year 2012, those individuals who pay contributions to their Individual Pension Security Accounts (Indywidualne Konto Zabezpieczenia Emeryalnego), are allowed to deduct from their tax-base the amounts ranging from 665.28 PLN to 4,030.80 PLN per year.

Since tax year 2013 internet expenses allowance is confined to the group of those taxpayers who have not used this allowance for more than two years. Since in the data we do not have the information on the use of this allowance, we assume that after latest changes nobody is using this allowance from year 2013.

Revenue costs

The amount of revenue costs allowance depends on the type of the work contract. On most temporary labour contracts, the allowance is equal to 20% of gross income. On some types of temporary contracts, such as scientific or artistic activities, the rate of allowance is 50%. However, due to the lack of detailed data, in the model we assume the basic 20% rate for all temporary work contracts.

The revenue cost allowance for permanent work contracts is a lump-sum amount, which depends on two factors:

- whether the employee has one or more permanent jobs,
- whether the job (jobs) is outside the area of residence.

The table below gives the amounts of revenue cost exemptions on permanent work incomes from 2007 till 2013 in PLN.

Table 2.31 Cost exemptions on permanent work income (annual in PLN)

		2009	2010	2011	2012	2013
Job(s) within the residence area	one job	1,335.00	1,335.00	1,335.00	1,335.00	1,335.00
	more than one job	2,002.05	2,002.05	2,002.05	2,002.05	2,002.05
Job(s) outside of the residence area	one job	1,668.72	1,668.72	1,668.72	1,668.72	1,668.72
	more than one job	2,502.56	2,502.56	2,502.56	2,502.56	2,502.56

Source: Ministry of Finance

- *EUROMOD notes*

In the model we assume that all persons have one job performed at the area of residence.

Charitable donations

Donations made for purposes related to religion and donations made for public utility organizations are deductible up to 6% of the taxable income. However, if the donation is made to an individual or entity that engages in certain activities than deduction is not allowed.

Table 2.32 Charitable donations

Donation type	Year	deduction limit (% of taxable income)
donations for churches	2009-2013	no limit
other donations	2009-2013	6.0

Source: Ministry of Finance

Housing loan (mortgage) interest

Interests on mortgage loan were deductible if taken (as of 01 January 2002) to build or purchase residential property. However, to qualify for the deduction, the construction must had been completed within the 3 years from the end of the calendar year the building permit was issued.

Table 2.33 Housing loan interest allowance

Year	deduction limit (amount of mortgage loan, PLN)
2009-2010	243,460
2011-2013	325,990

Source: Ministry of Finance

In 2007 housing loan (mortgage) interest deduction was withdrawn. However, it is treated as an acquired right and may be claimed by those who got a housing loan between 2002-2006 up to the end of 2027.

Medical rehabilitation expenses

Taxable income may be also decreased by expenses incurred for the purposes of medical rehabilitation

Table 2.34 Medical rehabilitation expenses allowance

	year	deduction limit (PLN per year)
Medical rehabilitation expenses allowance	2009-2013	2,280

Source: Ministry of Finance

- *EUROMOD notes*

Medical rehabilitation expenses allowance is not modeled in EUROMOD.

Internet access expenses

Internet access expenses are deductible up to 760 PLN per annum. Since 2013 internet expenses allowance is restricted to the group of those taxpayers who have not used this allowance for more than two years.

- *EUROMOD notes*

Since it is impossible to identify those taxpayers who have not used this allowance for more than two years, the value of internet access expenses allowance is set to 0 in year 2013.

Payments to Individual Pension Security Accounts

Since 2012 individuals who pay contributions to their Individual Pension Security Accounts can deduct from their tax-base the amounts of those contributions ranging from 665.28 PLN to 4,030.80 PLN per year.

- *EUROMOD notes*

This allowance is not modeled in EUROMOD.

2.6.4 Tax base

The tax base is gross income which is equal to the gross income minus social security contributions and tax allowances (deductions). Health insurance contributions are not subtracted from gross income (they are included in the income tax base), but they are linked with income tax as described in a separate section above. As described in the “tax unit” section, the average income tax base is used for couples and single parents filing a joint tax return with their spouse or dependent child respectively.

2.6.5 Tax schedule

Since 2009 there are only 2 brackets in Poland:

Table 2.36 Tax schedule (2009-2013)

2009-2013			
Bracket number	Lower limit	Upper limit	Rates
1	0	85,528	18%
2	85,528	-	32%

Source: Ministry of Finance

2.6.6 Tax credits

Three types of tax credits are deductible from the tax liability:

- Universal tax credit: each taxpayer may deduct a specified amount per year from his/her tax dues. This tax credit is equivalent to a tax-free income bracket.

Table 2.37 Universal tax credit (2009-2013)

2009-2013	
Universal tax credit (in PLN)	556.02

Source: Ministry of Finance

- Non-refundable child tax credit: it can be deducted independently of the source of taxable income. However, self-employed whose income is not taxed in accordance with general income tax regulation with progressive tax rates are not eligible for the child tax credit. The credit was introduced in 2007. Since tax year 2013 taxpayers entitled to child tax credit can deduct additional amount of one value of UTC per 3rd of dependent children and additional amount of two values of UCT per 4th, 5th or any subsequent dependent child.

Table 2.38 Child tax credit (2009-2012)

2009-2012	
Child tax credit (in PLN)	1,112.04

Source: Ministry of Finance

Table 2.39 Child tax credit in 2013

	Formula	Value of CTC in 2013
Child tax credit (in PLN) per 1 st or 2 nd child	$2 \times UTC$	1,112.04
Child tax credit (in PLN) per 3 rd child	$3 \times UTC$	1,668.06
Child tax credit (in PLN) per 4 th , 5 th or any subsequent child	$4 \times UTC$	2,224.08

Source: Ministry of Finance

- Part of health insurance (7.75% of the HI income base, as described above; see Table 2.28).

2.7 Other taxes

2.7.1 Income tax for farmers (agricultural tax)

Incomes from agricultural activities, with the exception of revenue from special branches of agricultural production, are not liable to personal income tax. Such incomes are subject to an agricultural tax. The tax base is measured in “*conversion hectares*” (calculated on the basis of actual area, type and quality of land and location in one of four tax zones, set depending on economic and climatic conditions of agricultural production). The annual rate of the tax amounts to the pecuniary equivalent of 2.5 quintals of rye per 1 conversion hectare of farm land and 5 quintals of rye per non-farm land. The pecuniary equivalent is based on the average purchase price of rye for the first three quarters of the year preceding the tax year.

Table 2.40 Amounts of agricultural tax (2009-2013)

	2009	2010	2011	2012	2013
Amount of agricultural tax per:					
1 conversion hectare	139.50	85.25	94.01	185.45	189.65
1 hectare	279.00	170.50	188.20	370.90	379.30
1 quintal of rye	55.80	34.10	37.64	74.18	75.86

Source: Ministry of Finance

2.7.2 Income tax for self-employed

Individuals who carry out business activities may opt to choose a flat-rate taxation of their business incomes at the rate of 19 %, equal to the rate of CIT. That is why instead of being taxed according to the general personal income tax rules with progressive tax rates, self-employed can choose to be taxed according to this flat tax rate. However, with the flat rate taxation the taxpayer is deprived of right to some allowances and to the tax credits. Some self-employed (such as hairdressers) can also opt for a lump-sum tax option or for a flat-rate tax levied on revenues (costs cannot be deducted; the rate differs depending on the type of activity). Due to the lack of data, and the fact that 74%² of the self-employed in Poland choose to be taxed according to general (progressive-rate) rules, we apply general progressive taxation rules to all self-employed in the model.

2.7.3 Income tax on capital gains

Dividends are excluded from the overall income. In general, there is no special tax rate for capital gains in Poland:

- Capital gains, such as the gains from savings accounts, mutual funds and stock exchange, are taxed at source according to a 19% flat rate, with no allowances or deductions. [For stock exchange, the tax bases are net gains].
- The sale of real estate by an individual is taxable at the rate of 10% of the sale price but if the real estate is sold more than 5 years after it was purchased the capital gain is exempt from tax.

2.7.4 Income tax on rents

Taxpayers can choose to tax their incomes from rents according to general (progressive) income tax rules, or according to special rules (no allowances or credits with two tax brackets). We assume that incomes from rents are taxed according to general rules.

Income tax on rents rates:

- 20% for people who are classified as having a free profession (*wolny zawód*) such as painters, actors, singers, translators, architects, lawyers etc.
- 17% for people that are involved with a number of activities such as hotels, guest houses, car parks, car mechanics, vehicle rental, computer hardware/software etc.
- 8.5% for people involved with a number of activities such as working with pre-school children; botanical, zoological or environmental protection, sale of alcoholic drinks;
- 5.5% for people involved with building works or transport (with loads above 2 tonnes);
- 3% for people involved with catering activities .

2.7.5 Tax Card

Tax card is form of taxation addressed primary to small business entities such as craftsmen or tradesmen. This form of taxation does not require keeping books of account. Taxes are paid on monthly regular basis, tax amounts depend on type of activity and its scale, number of employed persons, number of inhabitants in the place where activity is conducted. To become

² This estimate omits the scale of tax card taxation, there are no statistics on number of self-employed who choose tax card as form of taxation.

eligible to this form of taxation, entrepreneur must submit application to head of local tax office who decides whether claimant qualifies to this type of taxation or not. Base tax amounts paid on basis of this form of taxation are increased in each year. This form of taxation is not simulated in EUROMOD.

3. DATA

3.1 General description

The primary database used for the purpose of microsimulation in EUROMOD is the UDB SILC. However, supplementary database had been provided by CSO for the purpose of income variables disaggregation which is described more precisely in section 3.3.3 of the report.

Table 3.1 EUROMOD database description

EUROMOD database	2010
Original name	UDB EU-SILC
Provider	GUS
Year of collection	2010
Period of collection	4 th of May – 28 th of June
Income reference period	2009
Sample size	12,930
Response rate	64.2%

The survey unit is the household and all the household members who were at least 16 years old by December 31, 2009. The survey does not cover collective accommodation households (such as boarding house, workers' hostel, pensioners' house or monastery), except for the households of the staff members of these institutions living in these buildings in order to do their job (e.g. hotel manager, tender etc.). The households of foreign citizens should participate in the survey.

Central Statistical Office of Poland responsible for survey data collection for the purpose of EU-SILC released the *Final Quality Report* which can be found on the website of the European Commission³.

Definition of the household

Household is a group of persons related to each other by kinship or not, living together and sharing their income and expenditure (multi-person household) or a single person, not sharing his/her income or expenditure with any other person, whether living alone or with other persons (one-person household). Family members living together but not sharing their income and expenditure with other family members make up separate households. The household size is determined by the number of persons comprised by the household.

The household composition did not account for:

- persons at the age of over 15 years, absent from the household for education purposes, living in boarding houses, students' hostels or private dwellings;
- persons in prison;
- persons absent from the household at the time of the survey, staying at education centres, welfare houses or hospitals, if their real or intended stay outside the household is more than 6 months;

³*Final Quality Report*. Central Statistical Office of Poland, Warsaw, January 2013 [[link](#)].

- persons (household's guests) staying in the household at the time of the survey who have been or intended to be there for less than 6 months;
- persons renting a room, including students (unless they are treated as household members);
- persons renting a room or bed for the time of work in a given place (including such works as land melioration, geodetic measurements, forest cut-down or building constructions);
- persons living in the household and employed as au pairs, helping personnel on the farm, craft apprentices or trainees.

Weights

The two-stage sampling scheme with differentiated selection probabilities at the first stage was used. Prior to selection, sampling units were stratified. The first-stage sampling units (primary sampling units - PSU) were enumeration census areas, while at the second stage dwellings were selected. All the households from the selected dwellings are supposed to enter the survey.

The strata were the voivodships (NUTS2) and within voivodships primary sampling units were classified by class of locality. In urban areas census areas were grouped by size of town, but in the five largest cities districts were treated as strata. In rural areas strata were represented by rural gminas (NUTS5) of a subregion (NUTS3) or of a few neighbouring poviats (NUTS4). Altogether 211 strata were distinguished.

It was decided that the sample should include about 24 000 dwellings in the first year of the survey (2005). Proportional allocation of dwellings to particular strata was applied. The number of dwellings selected from a particular stratum was in proportion to the number of dwellings in the stratum. Furthermore, the number of the first-stage units selected from the strata was obtained by dividing the number of dwellings in the sample by the number of dwellings determined for a given class of locality to be selected from the first-stage unit. In towns with over 100 000 population 3 dwellings per PSU were selected, in towns with 20-100 thousand population – 4 dwellings per PSU, in towns with less than 20 000 population – 5 dwellings per PSU, respectively. In rural areas 6 dwellings were selected from each PSU.

Design factor – DB080 is equal to the dwelling sampling fraction reciprocal in the h-th stratum. DB080 weights were adjusted with the use of household non-response rates estimated for each class of locality separately.

Table 3.2 Descriptive statistics – interview response rates

Class of locality	Completeness rate
Poland	0.642
Warsaw	0.386
Towns 500 000 – 1 000 000 inhabitants	0.519
Towns 100 000 – 500 000 inhabitants	0.589
Towns 20 000 – 100 000 inhabitants	0.655
Towns less than 20 000 inhabitants	0.677
Rural areas	0.742

Non-response

Household non-response rate was 15.2. The number of contacted households was 15,163 out of 16,250 in a sample and 12,931 interviews were conducted. The main reason for lack of contact

was “Address does not exist or is non-residential or is unoccupied or not the principal residence” (995 cases). The main reason of non-responding was “refusal to co-operate” (1,599 cases) and “Entire household temporarily away for duration of fieldwork” (375 cases).

The number of accepted interviews for people at age of 16 or more was 28,552. There were 23,074 face to face interviews and 5,478 proxy interviews among them. The interviewers decided on proxy interviews only if the substitute respondents were well informed about the situation in the household and there was no other possibility to get the information. Proxy interviews were performed in the following situations:

1. no contact with the respondent because of long-term absence (e.g. work in another town or abroad);
2. respondent’s disability, illness or pathology (such as alcoholism);
3. according to other members of the household, the respondent was only available late at night and was not willing to participate in such a long interview, while at the same time the proxy could provide detailed information, even based on the documents, such as tax statements.

3.2 Data adjustment

During the preparations of database 2010 neither households nor individuals were dropped from the sample. There were no adjustments of weights performed as well.

3.3 Imputations and assumptions

3.3.1 Time period

Socio-demographic information in EU-SILC 2010 - such as age, marital status, household composition, education, living condition, health, refer to year of data collection (2010).

Information on labour market activity and working history covers partially year of data collection and in some characteristics refer to year 2009. This include information on working status in 2010, attributes of employing company (such as size and sector) or changes of labour market activities in prior year 2009 and reasons of that changes.

The EU-SILC UDB information on incomes refers to the year 2009. This includes i.e. employment income, self-employment income, unemployment benefits, old-age benefits, survivor’ benefits, sickness benefits, disability benefits. Monetary amounts in the original variables are usually denoted in yearly amounts in Euro.

For most income variables, information on for how many months given income source or benefit was received is available. In ascertainment of few benefits take-up period in months, additional information from Central Statistical Office played important role, like for example in case of family benefits, unemployment benefits or social assistance.

In EUROMOD database monetary amounts from EU-SILC data which are expressed in annual amounts were divided by 12 and are denoted in national currency.

3.3.2 Gross incomes

Although the official publication entitled: “*Incomes and living conditions of the population in Poland (report from the EU-SILC survey of 2010)*” which had been published by the Central Statistical Office contains the section devoted to data imputation, the description of imputation

process applied to missing gross income variables is very general and it does not clearly state which methods were applied in imputation of particular gross/net income variables.

The report suggests that missing income data was imputed with either use of stochastic or deterministic imputation methods and it describes downsides and strengths of both imputation methods groups. Moreover, it mentions that in the process imputating missing data or incomplete survey data, such methods as hot-deck method, regression imputation with randomly selected empirical residuals, regression deterministic imputation and deduction imputation were used.

3.3.3 Disaggregation of harmonized variables

Indicators provided by the Polish Central Statistical Office

Annual information for incomes is available in UDB SILC. The main disadvantage of this dataset is the fact that incomes are aggregated into a limited number of broad income categories and that the data does not include specific crucial information from the point of view of microsimulation, such as disability status, flat size and farm size.

One important consequence of income aggregation in UDB SILC is that the same source of income may appear in several aggregated categories. In the case of Poland this applies in particular to:

- 1) nursing benefit, which falls into either: old-age benefits, disability benefits or income received by individuals age under 16,
- 2) survivor's pension, which may be included in survivor pensions, old-age benefits or income received by individuals age under 16,
- 3) retirement pension which may be included in old-age benefits or family related benefit (if a person is below the statutory retirement age and retired in order to take care of a disabled child).

The primary database for the purpose of microsimulation in EUROMOD is the UDB SILC. On a special request from the Polish partner, the Centre for Economic Analysis, the Polish CSO prepared an additional database with data on flat size, farm size, disability levels and dummy variables indicating receipt of a specific income item (without amounts). Thanks to this information, we can identify, for example, that nursing allowance or family allowance was reported by a specific household, but we have no information about amounts. The dataset provided by the Polish central Statistical Office was used to generate microsimulation indicators which were matched with the UDB SILC database. A complex set of imputations has been applied to this combined data to disaggregate some elements of the aggregated UDB incomes, which has substantially improved the quality of data validation process and subsequently also the simulations. We are very grateful to the representatives of the Polish CSO for making the indicator data available and for their helpful assistance. Below we refer to this database as the SILC national indicator database (SILC-NID).

PLEASE NOTE – any EUROMOD analysis using the data for Poland must, in addition to the general data acknowledgement include the following statement: **“Microsimulation SILC indicator dataset complementing the Polish UDB SILC database was provided for the purpose of income source identification in EUROMOD by the Polish Central Statistical Office.”**

Income disaggregation

Incomes aggregation in UDB SILC is presented below.

Table 3.3 Income aggregation in UDB SILC2010

UDB-SILC variable		Non-simulated	Simulated
Cash Employee income or near cash income	py100g	Labour Act employment, Civil Law employment, Maternity leave benefit, Sickness benefit	
Self-employment income	py050g	Business self-employment income, Agricultural self-employment income.	
Unemployment benefits	py090g	Pre-retirement allowance, Pre-retirement benefits, Employment gratuity	Unemployment benefits (partially)
Old-age benefits	py100g	Old-age pension, Supplements to pensions, Retirement gratuity, Rehabilitation allowance, Survivor's pension, structural pension	Nursing allowance Nursing supplement
Survivor' benefits	py110g	Survivor's pension, Supplements to pensions	
Sickness Benefit	py120g	Sickness benefits, Compensation for injury	
Disability benefits	py130g	Disability pension, training supplement, rehabilitation allowance, Social pension Special scholarship for disabled student Supplements to pensions	Nursing benefit
Family/children related allowances	hy050g	Supplement to lone parent and loss of a right to unemployment benefit Supplement for education outside living place) Alimony down payment, Old-age pension Supplements to pensions	Family allowance, Parental leave supplement, Supplement to lone parent, Supplement for large families, Child birth supplement, Education and rehabilitation of disabled child, Supplement for starting school, One-off child birth benefits, Maternity benefit, Nursing allowance, Permanent Social Assistance, Temporary Social Assistance
Social exclusion	hy060g	Other special allowances from Social Assistance, Other financial support from NGOs	
Income received by people aged under 16	hy110g	Survivor's pension, Scholarship,	Nursing benefit

The variables from SILC were separated into EUROMOD variables using the variables from the SILC-NID as follows:

Table 3.4 Data disaggregation using national indicators (EU-SILC -> EUROMOD)

	SILC variables				
	py090g	py130g	py100g	py110g	hy100g
EUROMOD variables:					
bun	bun				
pyr	pyr				
ysv	ysv				
pdi00		pdi00	<i>poadp</i>		
poa00			<i>poa00</i>		
			<i>poafr</i>		
			<i>poasp</i>		
psu00			<i>psu_poa</i>	psu00	<i>psu_cb</i>
pdiuc		pdiuc	<i>poa_pdiuc</i>		<i>psu_uc</i>
pdinw		pdinw			
bed		<i>pdist</i>			<i>psu_ed</i>
					<i>psu_emp</i>
poaot			<i>poart</i>		
psuot				<i>psu_dg</i>	

Variables written in italics (e.g. *poadp*, *poafr*, *poasp*, *psu_poa*, *psu_cb*, *psu_uc*, *psu_ed*, *psu_emp*, *pdist*, *poart*, *psu_dg*) are not included in the final dataset. They are components of EUROMOD variables. After disaggregating SILC variables and aggregating components into EUROMOD variables one may assume that:

1. a number and a value for old-age pension (poa00) should be smaller in Euromod than in UDB (py100g) since some observations are re-classified as disability pension (pdi00) or survivor pension (psu00) or nursing benefit (pdiuc) or other old age benefit (poaot);
2. a number and a value for disability pension (pdi00) should be similar to the values in UDB. However some observations for disability pensions from UDB were re-classified into nursing benefit (pdiuc) or social pension (pdinw) or education benefit (bed) while some observations from py100g were added to pdi00;
3. a number and a value for survivor pension (psu00) should be significantly above values in UDB due to survivor pensions paid to children that are part of hy100g and the pensions paid to widows in retirement age that are included in py100g;
4. nursing benefit (pdiuc) is imputed from components of py130g, py110g and hy100g;
5. social pension (pdinw) is part of py130g;
6. other old-age benefit (poaot) includes severance payment to retirees;
7. Other survivor pensions (psuot) includes death grant;
8. “Incomes received by people aged under 16” (hy110g) included in survivor pension (psu00), nursing benefit (pdiuc) and education benefits (bed) are allocated to the main person in a household (int_order=1).

Special treatment was applied to family benefits (hy050g). The variable includes main family allowance, supplements to it, maternity benefit and other minor transfers. Family allowance is often main object of policy change that is why it is important to separate simulated and non-simulated incomes. Otherwise we would not be able to correctly define incomes while simulating housing benefit and social assistance and it would be impossible to measure hypothetical disposable income. Components of hy050g were identified by comparison of the declarations in the SILC-NID data with system values.

Table 3.5 Disagregation of family benefits (hy050g)

Simulated and in UDB		Non-simulated and in UDB	
bch00	Main family allowance	<i>bchpl</i>	Parental leave supp.
bchlp00	Main lone parent supp.	<i>bchunlp</i>	Minor lone parent supp.
bchlg	Large family supp.	<i>bchoe</i>	Outside education
bchba	Child birth supp.	<i>bma</i>	Maternity benefit
bchuc	Universal child birth allowance	<i>bfaam</i>	Alimony Fund allowance
berchdi	Nursing allowance	<i>bchfsa</i>	Foster family benefit
Simulated but not in UDB			
bched	Education and rehabilitation supp.		
bched	Starting school supp.		

Social exclusion benefits (hy060g) are split into three variables: permanent social assistance (bsapm), temporary social assistance (bsatm) and other social assistance (bsaot).

Table 3.6 Disagregation of social exclusion benefits (hy060g)

Simulated and in UDB		Non-simulated and in UDB	
bsapm	Permanent social assistance	<i>bsaot</i>	Special social assistance and help from ngo's
bsatm	Temporary social assistance		

Farmer status imputation

Social security contributions for farmers and agricultural tax are based on the size of arable land. This makes it necessary to identify farmers in the model. While creating EUROMOD dataset PL_2008_b2, the main information used to derive farmer status was question dr1 which was collected at the individual level, since 2010 this information is collected at the household level in dg4. In order to derive the farmer status from household level data, additional conditions need to be checked for in Euromod's dataset 2010. Table 3.7 summarizes the main conditions used for 2008 data and for 2010 data.

Table 3.7 Farmers identification in dataset 2008 compared to dataset 2010

Conditions used in dataset 2008	Conditions used in dataset 2010
A person is a farmer if she/he: 1. uses a farm and 2. declares income from self-employment (py050) or income from self-employment and paid_employment are not declared but own-consumption is positive (py070).	A person is a farmer if she/he: 1. is a member of a household conducting agricultural activity and 2. has economic status either of farmer, employer/self-employed, employee, inactive person or status 'other' and 3. is older than 15 years old and 4. does not have employee cash or near cash income
A person is not classified as a farmer if she/he: 1. uses a farm but 2. income from self-employment is not declared but income from paid-employment is positive.	A person is not classified as a farmer if she/he: 1. uses a farm but 2. income from self-employment is not declared but income from paid-employment is positive.

In order to assign the farmer status to an individual in the 2010 dataset we exploit the number of individual paying farmer social contribution within the household. This information is provided by variable dg10 from the Polish EU-SILC survey questionnaire. If the number of farmers identified by the first stage is lower than the number of household members paying farmer social contributions in the household (dg10), an additional round of imputation is conducted. This second round of imputation is performed with use of the same conditions as those mentioned in the preceding table.

Imputed housing rent

Values for mortgage interest per square metre are imputed if a reported value is above the median. The imputation is based on a linear prediction with flat size, degree of urbanization, dwelling type, number of rooms available to the household, household size, household type and total disposable household income.

3.4 Updating

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

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

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

The components of disposable income used in EUROMOD and in EU-SILC data are listed in the table below. Although almost all income components from the table are present in both concepts of disposable income, there are some differences between disposable income calculated in EUROMOD and in EU-SILC.

While fringe benefits, such as company cars are present in EU-SILC disposable income, EUROMOD `ils_dispy` does not include them. The value of pensions from individual private plans are included in EUROMOD disposable income while in EU-SILC this value is omitted.

Finally, the repayments/receipts for tax adjustment are not taken into account in EUROMOD, while in EU-SILC they are present.

Table 4.1 Components of disposable income

	EUROMOD	EU-SILC
	ils_dispy	HY020
Employee cash or near cash income	yem	py010g
Employer's social insurance contribution	tscer_s	py030g
Company car	-	py021g
Contributions to individual private pension plans	xpp	py035g
Cash benefits or losses from self-employment	yse	py050g
Pension from individual private plans	ypp	py080g
<i>Unemployment benefits</i>	bun_s	py090g
<i>Old-age benefits</i>	poa	py100g
<i>Survivor' benefits</i>	psu00, psuot, psuor	py110g
Sickness benefits	bhl	py120g
Disability benefits	pdi00, pdinw, pdiuc_s	py130g
Education-related allowances	bched_s, bchdied_s	py140g
Income from rental of a property or land	ypr	hy040g
<i>Family/children related allowances</i>	bch00_s, bchba_s, bchlp00_s, bchlg_s, bchuc_s, bchbamtna_s, bchot	hy050g
Social exclusion not elsewhere classified	bsapm_s, bsatm_s	hy060g
Housing allowances	bho_s	hy070g
Regular inter-household cash transfer received	ypt00, yptmp	hy080g
Interests, dividends, etc.	yy	hy090g
Income received by people aged under 16	yot	hy110g
Regular taxes on wealth	tpr	hy120g
<i>Regular inter-household cash transfer paid</i>	xmp	hy130g
<i>Tax on income and social contributions</i>	ils_tax ils_sicee ils_sicse	hy140g
<i>Repayments/receipts for tax adjustment</i>	0	hy145n

Total disposable household income in EU-SILC (HY020) is computed as the sum of all household members' gross personal income components & gross income components at household level minus: regular taxes on wealth, regular inter-household cash transfer paid, tax on income and social insurance contributions. What in EU-SILC variables notation can be denoted as:

$$HY020 = \sum PY010G + \sum PY021G + \sum PY050G + \sum PY080G + \sum PY090G + \sum PY100G + \sum PY110G + \sum PY120G + \sum PY130G + \sum py140G + HY040G + HY050G + HY060G + HY070G + HY080G + HY090G + HY110G - HY120G - HY130G - HY140G$$

The standard disposable income in EUROMOD (ils_dispy) is calculated as follows:

$$ils_dispy = \text{Original income (ils_origy)} + \text{benefits (ils_ben)} - \text{taxes (ils_tax)} - \text{employee social insurance contributions (ils_sicee)} - \text{self-employed social insurance contributions (ils_sicse)}.$$

4.1.2 Validation of incomes inputted into the simulation

Macrovalidation tables are included in Annex 2. Simulations are done using policy rules valid as of 30 June.

The first numbers to be compared are those that refer to employment and unemployment size collected in Table 4.2. The number of employed people in Poland drawn from EUROMOD database is fitting well to the corresponding numbers reported by the Central Statistical Office. The ratio between values produced by EUROMOD dataset to value given in external statistics is ranging from 99% to 102%. The highest ratio of 102% can be observed in year 2010, which is the EU-SILC data collection period. In case of unemployment numbers, the value of unemployed taken from external statistics shows much higher volatility. Especially values reported by CSO for the year 2009 are much below EUROMOD's database value resulting in a ratio of 122%. However, there is important fact to be remembered – the number of unemployed individuals in EUROMOD dataset is assessed based on data collected in 2010, which refers to self-defined economic status reported by respondents in 2010. When this value is compared to external statistics from 2010 the ratio equals to 104% which can be considered a good result.

The next step of validation concerns the components of market income in scope of recipients number and its aggregated values. Relevant values are included in Table 4.3 for number of recipients and in Table 4.4 for values of aggregates. Limited availability of external statistics restricts the validation of market income components. Those statistics that are accessible refer to numbers of recipients and values of employment and self-employment income. Moreover the values of 'other' incomes were fully allocated into education benefit (bed), survivor pension (psu00) and nursing allowance (pdiuc).

The number of employment income recipients in EU-SILC (14,022 thousands recipients) is close to the values reported by CSO for years 2009-2012. The ratios between EUROMOD and external statistics result in the range 99% to 102%. Self-employment income recipients accounts for 3,380 thousands individuals in EUROMOD database and it is very close to the number of self-employed reported by external statistics for 2009 with a ratio equal to 101%. Gradual increase in the number of self-employed reported by CSO in years 2010-2012 resulted in lower accuracy of the model, ratios for number of self-employment income recipients for those years vary from 90% to 93%.

Aggregated values of employment income in EUROMOD database are similar to values present in external statistics. Relevant ratios for years 2009-2011 are between 102%-104%, with ratio equal to 104% in income reference year 2009. According to external statistics, values of self-employment income are significantly oversimulated, with ratio of 141% in 2009, 2010 and 146% in year 2011. Although it may appear as a poor result, few facts concerning collection of data about incomes from self-employment in surveys need notification. As it is stated in the list of EU-SILC target variables⁴: "collection of accurate income information from the self-employment is one of the most problematic areas for surveys". In this document it is explained that self-employed often do not separate their business and personal finances while they are responding to survey questions. Moreover, it is said that self-employed are less likely than employed to respond to income surveys which results in higher level of item non-response. And what is more, financial and accounting framework used in construction of national accounts by statisticians does not relate well to those used by self-employed.

Table 4.5 contains validation of number of non-simulated taxes payers and benefits recipients. Overall number of pensions recipients is 5% higher than relevant external statistics in income reference year 2009 what can be treated as a good result. In consecutive years the ratio of pensioners in EUROMOD database to external statistics is growing gradually and reaches 108%

⁴http://epp.eurostat.ec.europa.eu/portal/page/portal/income_social_inclusion_living_conditions/documents/tab/Tab/Personal%20data%20-%20income.pdf (last access 08.04.2014).

in 2012. Looking closer to subgroups of pensioners reveals oversimulation in number of old age pension recipients with ratio of 111% for 2009 and ratio of 103% in the group of disability pension recipients for 2009. At the same time the number of survivors pension recipients is undersimulated for years 2009-2012 with ratio of 69%, while number of pre-retirement benefit recipients for 2009 accounts for 93% of relevant external statistics. Undersimulation of survivor pension and preretirement benefit recipients number may be explained by the fact that those benefits can be wrongly taken by their claimants and reported as old-age or disability pensions in survey data. Unfortunately, statistics that allow validation of number of recipients of other non-simulated benefits and taxes included in Table 4.5 are not provided in publicly available sources.

In general, validation of non-simulated taxes and benefits aggregated amounts result with similar observations as in case of recipients numbers. Overall simulated amount of pensions in Table 4.6, which includes disability pensions, old-age pensions, survivors pension and pre-retirement benefit is almost the same as aggregated amount in external statistics. In income reference year 2009 disability pension amounts are undersimulated with ratio of 76%, survivor pension amounts have ratio of 61% and pre-retirement benefit is undersimulated with ratio of 91%. Undersimulation of pre-retirement benefit and survivors benefit aggregated amounts has the same explanation as in the case of number of recipients. Claimants of those benefits presumably reported them in survey as old-age pensions.

4.1.3 Validation of outputted (simulated) incomes

Table 4.7 contains validation of the number of simulated benefit recipients and taxes/social security contributions payers. Validation of number of recipients of family allowance and its' supplements is hampered due to the fact that EUROMOD output in this case is on family level and most of official statistics concerning family benefits are expressed in number of children. The only external statistics concerning family benefits expressed in number of families eligible are those about families claiming family allowance and supplement due to parental leave. The number of recipients of main family allowance is undersimulated by the model. For 2009, the model simulates that 1,250 thousands of families were eligible to family allowance. This number accounts for 74% of families reported in official statistics. The number of recipients of the supplement due to parental leave is fitting well to the external statistics for year 2009-2010 with ratios ranging from 92% to 100% for 2010. For years 2011-2012 the ratio indicates oversimulation by 12% to 37%. To make external statistics on the number of children eligible to family allowance supplements comparable with EUROMOD results, the simulated numbers were recalculated so as they could finally be expressed in the numbers of children eligible to those benefits. Recalculated simulation results together with relevant external statistics are included in an additional table (Table 4.7*). For year 2009 the simulated number of children born in families with right to supplement for child birth is 36% below the target official number. The number of children in families claiming supplement for education of disabled child is undersimulated with a ratio of 69% for the income reference year 2009. The simulations of numbers of children in families with right to supplements: for starting school year, for large families, for lone parents have respective ratios equal to 66%, 74% and 75% of external data for the income reference year 2009. The simulated number of universal child birth allowance take-up is nearly the same as reported in official statistics, which results in a ratio of 101% in 2009; for latter years it becomes oversimulated due to the fact that the static nature of EUROMOD does not allow us to take into account changes in number of new born babies.

Aggregated amounts of simulated family benefits in Table 4.8 are consistent with simulated numbers of recipients. This shows that the eligibility identification is the main problem in case of family benefits simulation. Simulated values of family allowance, supplement for child birth, supplement for starting school year and parental leave supplement are around 63%-68% of relevant administrative data, while simulated values of supplement for large families and

supplement for lone parents accounts for 74% to 78% of aggregated amounts from external statistics for the year 2009.

Identification of recipients of nursing allowance is less successful. The benefit is mostly paid to parents of children who need a special care and disability is not a necessary condition for eligibility. For example, a child with severe allergic problem might be eligible for the allowance even though she/he is not formally disabled. The eligibility condition based on disability gives too low number of recipients. Eligibility conditions for nursing allowance are difficult to identify. The eligibility condition for the nursing allowance is taken from the data, but since the benefit was not directly reported in the UDB, it had to be imputed with use of the national SILC dataset. For years 2009-2010 the ratios of nursing allowance simulation are between 72%-75%. In year 2010 income threshold for nursing allowance had been abolished, since this is not present in income data from 2009, significant decrease of models' accuracy for years 2011 and 2012 is observed. Similar observation can be made in case of nursing allowance aggregated values, for years 2009-2010 their ratios are ranging from 74% to 73% and in years 2011-2012 the decrease in accuracy of simulated values is also visible (43%-47% of target variables).

The simulated number of recipients of the unemployment benefit for 2009 is 562,000 and 334,000 in official statistics. But this is since the number in EUROMOD is the total number of recipients in a year, while external source gives a monthly average number of recipients. Assuming that the benefit is received on average for six months the expected monthly number of recipients in simulation would be 281,000 which would be 84% of the target official statistic. In order to fit exactly the number of 334,000 recipients, one should assume that the average duration of unemployment benefit take-up is 7.1 months even though some of the benefits are paid for 12 or even 18 months. Hence, it rather seems that the SILC database includes too little observations on unemployment benefit. The simulated value misses the benchmark value by 33% for year 2009.

The simulation for 2009 identifies only 71% of the benchmark number of housing benefit recipients. The simulated value of housing benefit accounts for 70% of value from administrative data for 2009. Those differences might be explained by the fact that the real eligibility test for housing benefit consists of the income test and the home visit by housing benefit officer, while the simulation of housing benefit recipients number is based on fulfilment of income eligibility criteria and declaration of benefit take-up in input data.

Better simulation results are obtained for permanent and temporary social assistance. For 2009, simulation of those social assistance recipients results respectively with ratios equal to 101% and 100%. Simulated values are also close to external statistics. Permanent social assistance has ratio of 104% for 2009 and temporary social assistance has ratio of 94% for 2009.

The number of employees who contribute to retirement and disability social insurance looks very poorly identified by the model. However, it is important to highlight that EUROMOD output and external data are measured using different units: EUROMOD output counts the number of payers in a year; external statistics measure the average monthly number of payers. "Calibration" of the EUROMOD results in order to get the external value for 2009 would require assumption that average number of months should be equal to 8.7. Although it may seem too low one has to remember that the model assumes that all declared incomes are registered. The number of persons employed in "hidden economy" for 2009 is estimated to be 1,152 thousands⁵, if the number of payers outputted in the model would be lowered by 1,152 thousands the average number of months will increase to 9.5. This supports assumption that the "no registered employment" is the main reason for observed differences both in case of simulated number of contributions payers and simulated aggregated values as well. The same arguments are valid for simulated employer contributions.

⁵ CSO (2011): *Concise statistical yearbook of Poland 2010*.

The number of self-employed who contributes to retirement and disability social insurance measured by EUROMOD is above the external data for 2009. Similar explanations to those above for employees apply. The model simulates the number of payers in a year, while administrative data is expressed in monthly average and there is also concern about unregistered economic activity of self-employed that is not reflected by the model. The simulated number of self-employed social security contributions has higher ratios of oversimulation when compared to previous year's output (2007-2010) obtained using EU-SILC 2008 dataset. Compared to dataset 2008, the dataset 2010 has higher proportion of self-employed in business sector to overall number of self-employed which includes also self-employed in agriculture. This most probably is due to the fact that some proportion of farmers who in dataset 2008 were supposed to pay social insurance contributions for farmers, in dataset 2010 are subjected to contributions payable to Social Insurance Fund. However, if one would compare administrative data on number of insured in Farmers Social Insurance Institution with simulation results, it will turn out that number of farmers paying farmer contributions is identified better by 2010 data than 2008 data. The simulated number of payers of social contributions for farmers has ratio of 104% for income reference year 2009 and ratio of 107% for aggregated values in 2009. It seems that the procedures of identifying employed in business and agriculture sectors are not perfect and that there is trade-off between proper identification of self-employed paying contributions to Social Insurance Fund or Farmers Social Insurance Institution. Moreover, part of observed discrepancies might to some extent be explained by application of the 60% rate used to calculate income base for self-employed social contributions. In reality self-employed running business for less than two years and those who are disabled can use reduced rate of 30% to calculate income base for self-employed social security contributions.

Simulated numbers of income tax and health insurance payers are close to the benchmark for the year 2009. Ratio for the number of income tax payers for 2009 is equal to 93%, and relevant ratio for health insurance payers is equal to 101%. Aggregated value of simulated personal income tax is almost the same as the amount in official statistics. Health insurance value is oversimulated by 23% for year 2009. However, the number of agricultural tax payers is underestimated by the model and it accounts for 61% of administrative data for year 2009 while the value of simulated agricultural tax is 47% above benchmark for 2009.

4.2 Income distribution

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

4.2.1 Income inequality

In Table 4.9 income distribution indicators such as decile shares in population, median and mean equivalised incomes, Gini coefficient and income quantile ratio are presented. There are small differences between external statistics on income distribution and EUROMOD simulation results. These are visible in 1st, 2nd and 9th decile. Median and mean equivalised incomes are below benchmark and have ratio of accuracy equal to 96%. The Gini coefficient is simulated with 100% accuracy according to external statistics. Income quantile ratio simulated in EUROMOD account for 99% of external value.

4.2.2 Poverty rates

Validation of at risk of poverty rates calculated using EUROMOD is included in Table 4.10. For year 2009 simulated number of individuals below 40% and 50% of the median household disposable income exceeds relevant external statistics by 4%. At the same time simulated number of people with income below 60% median household disposable income is undersimulated by 1%, while simulated share of population living with income below 70% of the median HDI is exactly the same as reported in external data.

Simulated share of people from different age groups living with income below 60% of the median HDI is undersimulated for population aged 0-17 by 4% for year 2009, undersimulated by 1% for population aged 25-49 and 65+. In income reference year 2009 the oversimulated share of population of people living below 60% poverty threshold is observed for individuals aged 18-24 by 3% and for group of people aged 50-64 by 1%.

4.3 Validation of minimum wage

Minimum wage policy is switched off in the baseline. Table 4.11 shows the impact of this policy when it is turned on. The table includes validation of: total disposable income values, total gross employee earnings, total value of income tax, total value of social assistance, Gini coefficient and at poverty risk rate (60% median HDI). The differences between two scenarios are really small. The only visible change is pertaining to the aggregated value of employment income. For years 2009-2013 gross employee incomes in baseline account for 99% of those simulated with minimum wage policy switched on. Other validated variables are not significantly affected by running simulation with minimum wage policy switched on.

4.4 Summary of “health warnings”

Some particular aspects should be borne in mind while using the Polish part of EUROMOD:

- 1) the weights do not control for different sources of non-response;
- 2) many sources of income are combined into one variable in EU-SILC what makes difficult to separate:
 - a) agricultural and business self-employment incomes and employment statuses;
 - b) temporary and permanent employment incomes and statuses;
 - c) work employment and sickness benefit;
 - d) simulated and non-simulated supplements to family allowance.
- 3) there are concerns that declarations on self-employment are not reliable;
- 4) the model assumes full benefit take-up and full compliance with taxes;
- 5) grey economy influence is not taken into account by the model;
- 6) tax card and lump-sum tax are not modeled in EUROMOD;
- 7) for the purpose of revenue costs assessment it is assumed that one job is performed by employees and self-employed at the area of residence;
- 8) lowered income base for disabled self-employed and those conducting business activity for less than 2 years is not modeled in EUROMOD.

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ANNEX 1

Table 1 Updating factors

Index	Income Source/index type	2009-2010	2009-2011	2009-2012	2009-2013
h_cpi	Eurostat / Harmonized Indices of Consumer Prices (HICP)	1.0239	1.0618	1.1069	1.1095
lab_cost	Eurostat / Labour market / Labour costs – Labour cost index - Annual data	1.0221	1.0740	1.0968	1.1744
ret_pen	Retirement Pension index: source: based on SILC-NID on average retirement pension from the nonagricultural sector;	1.0592	1.1114	1.1698	1.2289
dis_pen	Disability Pension index: source: based on SILC-NID on average disability pension from the nonagricultural sector	1.0683	1.1179	1.1912	1.2545
fam_pen	Family Pension index: source: based on SILC-NID on average family pension from the nonagricultural sector	1.0562	1.1025	1.1668	1.2273
gdp	nominal GDP index: based on SILC-NID for a given year	1.0536	1.1252	1.2030	1.2341

Table 4.7 Simulated taxes and benefits – Number of recipients/payers, thousands

	EUROMOD Simulation					External Statistics					Ratio				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Family and Children															
Family allowance	1,250	1,227	1,132	1,072	1,107	1,698	1,541	1,417	1,286	n/a	74%	80%	80%	83%	n/a
supp child birth	123	121	115	108	108	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
supp education of disabled child	122	122	115	112	113	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
supp starting school year	158	157	144	136	141	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
supp large families	399	397	368	350	362	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
supp lone parent	54	53	52	52	52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
parental leave	112	112	112	112	112	121	112	98	82	n/a	92%	100%	114%	137%	n/a
universal child birth allowance	419	419	419	419	365	414	413	398	373	n/a	101%	102%	105%	112%	n/a
nursing benefit	473	473	473	473	473	836	873	898	918	n/a	57%	54%	53%	51%	n/a
nursing allowance	51	78	78	78	78	68	108	168	224	n/a	75%	72%	47%	35%	n/a
special nursing allowance	n/a	n/a	n/a	n/a	26	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Unemployment															
	562	562	562	562	562	334	346	309	325	n/a	168%	163%	182%	173%	n/a
Housing benefit															
	247	242	235	243	225	346	351	337	n/a	n/a	71%	69%	70%	n/a	n/a
Social assistance															
soc assist permanent	152	142	137	135	160	151	156	158	161	n/a	101%	91%	87%	84%	n/a
soc assist temporary	201	203	205	215	314	201	203	205	214	n/a	100%	100%	100%	100%	n/a
Taxes and SIC															
Employee contributions															
for retirement and disability	14,022	14,022	14,022	14,022	14,022	10,158	10,200	10,344	10,342	n/a	138%	137%	136%	136%	n/a
for sickness	14,022	14,022	14,022	14,022	14,022	10,158	10,200	10,344	10,342	n/a	138%	137%	136%	136%	n/a
Employer contributions															
for retirement and disability	14,022	14,022	14,022	14,022	14,022	10,158	10,200	10,344	10,342	n/a	138%	137%	136%	136%	n/a
for accident	14,022	14,022	14,022	14,022	14,022	10,511	10,356	10,427	10,426	n/a	133%	135%	134%	134%	n/a
for labour fund	14,022	14,022	14,022	14,022	14,022	10,158	10,200	10,344	10,342	n/a	138%	137%	136%	136%	n/a
for employer insolvency	14,022	14,022	14,022	14,022	14,022	10,158	10,200	10,344	10,342	n/a	138%	137%	136%	136%	n/a

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Self-employed contributions	1,793	1,795	1,795	1,822	1,820	1,244	1,299	1,356	1,305	n/a	144%	138%	132%	140%	n/a
for retirement and disability	1,793	1,795	1,795	1,822	1,820	1,244	1,299	1,356	1,305	n/a	144%	138%	132%	140%	n/a
for sickness	1,793	1,795	1,795	1,822	1,820	1,081	1,123	1,139	1,089	n/a	166%	160%	158%	167%	n/a
for labour fund	1,793	1,795	1,795	1,822	1,820	1,244	1,299	1,356	1,305	n/a	144%	138%	132%	140%	n/a
Other contributions															
farmer contributions	1,634	1,634	1,634	1,634	1,634	1,571	1,544	n/a	n/a	n/a	104%	106%	n/a	n/a	n/a
Taxes															
Total Income tax	21,379	21,542	21,769	21,885	22,041	23,161	23,279	23,084	22,746	92%	93%	94%	96%	n/a	n/a
capital income tax	644	644	644	644	644	257	486	414	356	251%	132%	156%	181%	n/a	n/a
Health insurance	21,621	21,653	21,696	21,695	21,723	21,298	21,379	21,084	20,831	102%	101%	103%	104%	n/a	n/a
Agricultural tax	1,146	1,146	1,146	1,146	1,146	1,926	1,891	n/a	n/a	60%	61%	n/a	n/a	n/a	n/a

Table 4.7* Simulated family benefits – Number of children

	EUROMOD Simulation					External Statistics					Ratio				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Family and Children															
supp child birth	124	121	115	108	108	195	183	161	133	n/a	64%	66%	71%	81%	n/a
supp education of disabled child	129	129	122	119	119	186	173	162	151	n/a	69%	75%	75%	79%	n/a
supp starting school year	1580	1567	1439	1359	1404	2,396	2,135	2,026	1,844	n/a	66%	73%	71%	74%	n/a
supp large families	415	413	382	363	376	559	505	462	419	n/a	74%	82%	83%	87%	n/a
supp lone parent	112	112	110	109	109	149	139	130	121	n/a	75%	81%	85%	90%	n/a

Table 4.8 Simulated taxes and benefits – Aggregate amounts, annual amounts (in millions of PLN)

	EUROMOD Simulation					External Statistics					Ratio				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Simulated benefits															
Family and Children															
Family allowance	1,692	2,372	2,195	2,071	2,479	2,553	3,091	2,843	2,651	n/a	66%	77%	77%	78%	n/a
supp child birth	124	122	115	106	108	195	183	161	133	n/a	63%	67%	71%	80%	n/a
supp education of disabled child	117	117	111	108	109	171	159	149	139	n/a	68%	74%	74%	78%	n/a
supp starting school year	158	157	144	136	141	240	214	203	184	n/a	66%	73%	71%	74%	n/a
supp large families	399	397	368	350	362	537	485	444	402	n/a	74%	82%	83%	87%	n/a
supp lone parent	245	243	240	239	239	313	292	273	253	n/a	78%	83%	88%	94%	n/a
parental leave	366	375	389	405	406	561	517	457	380	n/a	65%	73%	85%	107%	n/a
universal child birth allowance	424	424	424	424	365	414	413	398	373	n/a	102%	103%	107%	114%	n/a
nursing benefit	893	893	893	893	893	1,535	1,603	1,649	1,685	n/a	58%	56%	54%	53%	n/a
nursing allowance	258	489	489	583	771	349	667	1,031	1,363	n/a	74%	73%	47%	43%	n/a
special nursing allowance	n/a	n/a	n/a	n/a	151	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Unemployment	1,526	1,733	1,837	1,919	1,990	2,281	2,623	2,436	n/a	n/a	67%	66%	75%	n/a	n/a
Housing benefit	567	558	555	591	551	807	866	884	n/a	n/a	70%	64%	63%	n/a	n/a
Social assistance															
soc assist permanent	645	587	571	562	799	622	648	663	711	n/a	104%	91%	86%	79%	n/a
soc assist temporary	618	642	648	677	1,171	645	637	644	727	n/a	94%	99%	100%	93%	n/a
other soc assist	139	142	147	154	154	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Taxes and SIC															
Employee contributions															
for retirement and disability	57,687	58,832	61,880	63,295	67,708	47,821	47,081	49,402	51,486	n/a	121%	125%	125%	123%	n/a
for sickness	47,109	48,020	50,519	51,693	55,285	39,320	38,294	40,207	41,842	n/a	120%	125%	126%	124%	n/a
Employer contributions	10,578	10,812	11,361	11,602	12,423	8,501	8,787	9,195	9,644	n/a	124%	123%	124%	120%	n/a
for retirement and disability	78,441	79,348	83,455	94,537	102,551	58,731	62,457	65,508	75,547	n/a	134%	127%	127%	125%	n/a
for accident	59,660	60,814	63,979	74,648	79,835	44,835	48,497	50,919	60,421	n/a	133%	125%	126%	124%	n/a
	7,772	7,281	7,651	7,814	9,786	5,048	5,173	5,394	5,482	n/a	154%	141%	142%	143%	n/a

Table 4.9 Income distribution

Description	EUROMOD Simulation					External Statistics					Ratio				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Decile shares, %															
1	3.0%	3.1%	3.0%	2.9%	3.0%	3.1%	3.0%	3.1%	n/a	n/a	97%	103%	98%	n/a	n/a
2	4.9%	4.9%	4.9%	4.8%	4.9%	4.8%	4.9%	4.9%	n/a	n/a	101%	100%	100%	n/a	n/a
3	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	n/a	n/a	100%	100%	100%	n/a	n/a
4	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	n/a	n/a	100%	100%	100%	n/a	n/a
5	8.1%	8.1%	8.1%	8.1%	8.1%	8.1%	8.1%	8.1%	n/a	n/a	100%	100%	100%	n/a	n/a
6	9.2%	9.2%	9.2%	9.3%	9.2%	9.2%	9.2%	9.2%	n/a	n/a	100%	100%	100%	n/a	n/a
7	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	n/a	n/a	100%	100%	100%	n/a	n/a
8	12.2%	12.2%	12.2%	12.2%	12.2%	12.2%	12.2%	12.2%	n/a	n/a	100%	100%	100%	n/a	n/a
9	14.8%	14.8%	14.8%	14.8%	14.8%	14.9%	14.8%	14.8%	n/a	n/a	99%	100%	100%	n/a	n/a
10	24.3%	24.2%	24.3%	24.3%	24.3%	24.3%	24.4%	24.2%	n/a	n/a	100%	99%	100%	n/a	n/a
Median income (equivalised)	4,240	4,719	5,131	4,964	5,133	4,405	5,025	5,060	n/a	n/a	96%	94%	101%	n/a	n/a
Mean income (equivalised)	4,902	5,453	5,936	5,737	5,941	5,116	5,813	5,902	n/a	n/a	96%	94%	101%	n/a	n/a
Gini Coefficient	31.10	30.80	31.00	31.20	31.10	31.10	31.10	30.90	n/a	n/a	100%	99%	100%	n/a	n/a
Income quintile ratio (S80/S20)	4.97	4.87	4.93	5.03	4.95	5.00	5.00	4.90	n/a	n/a	99%	97%	101%	n/a	n/a

Table 4.10 At risk of poverty rates by gender and age, percent

Description	EUROMOD Simulation					External Statistics					Ratio				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
40% median HDI															
Total	5.90	5.70	6.00	6.30	5.80	5.70	5.70	5.50	n/a	n/a	104%	100%	109%	n/a	n/a
Males	6.30	6.20	6.40	6.80	6.30	6.10	6.20	5.90	n/a	n/a	103%	100%	108%	n/a	n/a
Females	5.40	5.30	5.60	5.80	5.30	5.30	5.30	5.10	n/a	n/a	102%	100%	110%	n/a	n/a
50% median HDI															
Total	10.90	10.50	10.90	11.20	10.90	10.50	10.50	10.50	n/a	n/a	104%	100%	104%	n/a	n/a
Males	11.30	11.00	11.30	11.70	11.30	10.80	10.90	10.90	n/a	n/a	105%	101%	104%	n/a	n/a
Females	10.60	10.20	10.50	10.90	10.50	10.30	10.10	10.20	n/a	n/a	103%	101%	103%	n/a	n/a
60% median HDI															
Total	17.40	17.20	17.30	17.60	17.80	17.60	17.70	17.10	n/a	n/a	99%	97%	101%	n/a	n/a
Males	17.30	17.10	17.30	17.60	17.80	17.40	17.80	17.10	n/a	n/a	99%	96%	101%	n/a	n/a
Females	17.50	17.20	17.40	17.60	17.80	17.70	17.60	17.10	n/a	n/a	99%	98%	102%	n/a	n/a
70% median HDI															
Total	25.40	25.10	25.30	25.40	25.50	25.50	25.70	24.90	n/a	n/a	100%	98%	102%	n/a	n/a
Males	25.00	24.70	24.80	25.10	25.20	24.90	25.30	24.60	n/a	n/a	100%	98%	101%	n/a	n/a
Females	25.90	25.50	25.70	25.70	25.90	26.00	26.00	25.20	n/a	n/a	100%	98%	102%	n/a	n/a
60% median HDI															
0-17 years	21.70	21.40	21.90	22.40	22.30	22.50	22.00	21.50	n/a	n/a	96%	97%	102%	n/a	n/a
18-24 years	21.60	21.50	21.50	22.20	22.50	20.90	20.70	21.80	n/a	n/a	103%	104%	99%	n/a	n/a
25-49 years	15.90	15.90	16.10	16.60	16.70	16.10	16.30	15.20	n/a	n/a	99%	98%	106%	n/a	n/a
50-64 years	16.40	16.00	16.10	15.90	16.20	16.30	16.70	16.40	n/a	n/a	101%	96%	98%	n/a	n/a
65+ years	14.10	13.20	13.30	12.90	13.20	14.20	14.70	14.00	n/a	n/a	99%	90%	95%	n/a	n/a

Table 4.11 Impact of minimum wage

Description	Baseline					Minimum wage included					Ratio				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Disposable income (total)	532,465	552,078	578,340	595,198	629,617	532,465	552,078	578,340	595,198	629,617	100%	100%	100%	100%	100%
Gross employee earnings (total)	431,753	441,295	463,703	473,547	507,051	434,926	444,682	467,287	478,363	512,111	99%	99%	99%	99%	99%
Income tax (total)	40,976	43,307	46,870	49,319	53,796	40,976	43,307	46,870	49,319	53,796	100%	100%	100%	100%	100%
Employee SICs (total)	57,798	58,945	61,998	63,418	67,831	57,798	58,945	61,998	63,418	67,831	100%	100%	100%	100%	100%
Social assistance (total)	1,392	1,358	1,363	1,393	2,124	1,392	1,358	1,363	1,393	2,124	100%	100%	100%	100%	100%
Gini coefficient (Eq HDI)	31.1	30.8	31	31.2	31.1	31.1	30.8	31	31.2	31.1	100%	100%	100%	100%	100%
At poverty risk (60% median HDI)	17.4	17.2	17.3	17.6	17.8	17.4	17.2	17.3	17.6	17.8	100%	100%	100%	100%	100%