# EUROMOD

## COUNTRY REPORT

# POLAND (PL)

# 2013-2016

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

This report documents the work done in one annual update for 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 G4.0. 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: https://www.euromod.ac.uk

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CONTENTS

# 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 child definitions are given in: The Natural Persons' Income Tax Act (*Ustawa o podatku dochodowym od osób fizycznych*), Family Benefits Act (*Ustawa o świadczeniach rodzinnych*) and State Support in Child-rearing Act (*Ustawa o pomocy państwa w wychowywaniu dzieci*).
- According to The Natural Persons' Income Tax Act dependent children are children:
    a. aged less than 18;
    b. who claim Nursing Benefit or Nursing Supplement or Social Pension - irrespectively of age;
    c. aged less than 25 and in education if their taxable income during given tax year was below 3089 PLN.
- Family Benefits Act and State Suport in Child-rearing Act define child as someone who is neither a parent nor married:
    a. aged less than 25 and income dependent from parents;
    b. aged 25 or more and possessing a medical certificate confirming severe disability if relative of such child claims nursing allowance or special nursing allowance due to taking care of such child.
- Lone parents are unmarried, widowed or divorced parents, rising their dependent children without help of any cohabitant partner
- 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 54%[1] 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 audit of family allowance with supplements took place in 2015 and it resulted in the proposal of increasing family allowance values in consecutive years from 2015 to 2017 and family allowance income thresholds in 2015 and 2017. The last audit of allowances from social assistance which took place in 2015 raised both income thresholds and benefits values and assumes those values to be fixed until the next verification in 2018.
- 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 conditional on 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. Since January 2013 the statutory retirement age is being gradually raised from the initial level of 65 (60) years for men (women) and is intended to reach 67 years for both men and women in October 2020. In June 2016 the statutory retirement age value was 65 years and 11 months (60 years and 11 months) for men (women). Eligibility to old-age pension is conditioned on length of contributory and non-contributory period. Until 2013, contributory and non-contributory period amounted to 25 years for men and 20 years for women. After reform implemented in 2013 contributory period for women is aimed to reach 25 years in year 2022. In June 2016 minimum required contributory and non-contributory period for women was 22 years.

**Earlier old-age pension** *(świadczenie emerytalne):* men (women) born before 1st of January 1949 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-

[1] Source: Own calculations using: Central Statistical Office (2016a), Ministerstwo Finansów (2016c)

contributory period or 25 (20) year contributory and non-contributory period and have been recognised as completely incapable of work. The same qualification rules for earlier old-age pension apply to women who were born after 31st of December 1948 and before 1st of January 1953.

**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 contributory and non-contributory period.

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

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

**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** (*zasiłek 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** (*zasiłek 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 34$^{th}$ day of incapacity for work (continuous or otherwise) in a calendar year or from the 15$^{th}$ 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** (*zasiłek 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** (*zasiłek 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** (*zasiłek 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** (*zasiłek 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** (*zasiłek rodzinny*): means tested 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.

Since January 2016 the amount of Family Allowance with its supplements is gradually withdrawn as income of a Family increases above the income threshold.

Further components of Family Benefits include:

**Nursing Benefit** (*zasiłek 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. 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 18$^{th}$ year of life).

**Special Nursing Allowance** (*specjalny zasiłek 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.

**Child Birth Allowance** (*jednorazowa zapomoga z tytułu urodzenia się dziecka)*: one-off means tested benefit for parents of newly born children.

**Parental Allowance** (*świadczenie rodzicielskie)*: this benefit supports those parents of new born children that are not eligible to maternity leave allowance: students, employees on civil contracts (who have not paid sufficient social insurance contributions), individuals insured in Agricultural Social Insurance Fund (KRUS) or unemployed. The benefit amount is 1000 PLN per month, paid for the period of 52 weeks if the mother gave birth to one child and up to 71 weeks if mother gave birth to quintuplets.

### 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 1$^{st}$ 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** *(zasiłek 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** *(zasiłek 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** *(zasiłek celowy):* is a facultative allowance paid in case of unforeseen events like natural disasters.

### Childcare Allowance (Family 500+ benefit)

**Childcare Allowance** (*świadczenie wychowawcze*): a benefit which is intended to give financial support in child rearing for families with children aged less than 18 years old. Implemented in April 2016, the allowance is a universal payment of 500PLN per month for every second child and any subsequent children. The allowance for the first child in the family (within the age range) is means tested on total per capita family income (which excludes family benefits, housing support and social assistance benefits).

### Employers' sickness benefit

**Sickness benefit (*zasiłek 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 Rolnicznego 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 Bulidings. 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 (*Urzad 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 (636.555,00 PLN). 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? |
|---|---|---|---|---|---|---|
| | | 2013 | 2014 | 2015 | 2016 | |
| Old-age pension | poa00 | I | I | I | I | No data on contribution history |
| Disability Pension | pdi00 | I | I | I | I | No data on contribution history |
| Survivior Pension: | psu00 | I | I | I | I | No data on contribution history |
| Unemployment Benefits | bun_s | 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 | No data on contribution history |
| Maternity benefit | bma | I | I | I | I | No data on contribution history |
| Sickness Benefit | bhl | I | I | I | I | No data on contribution history |
| Care Benefit | | E | E | E | E | No data on contribution history |
| Compensatory allowances | | E | E | E | E | No data on contribution history |
| Funeral Benefit | psuot | I | I | I | I | No data on contribution history |
| Rehabilitation benefits | psuot | I | I | I | I | No data on contribution history |
| Social Pension | pdinw | I | I | I | I | No data on disability history |
| Nursing Supplement | poacm_s | S | S | S | S | |
| Nursing Benefit | pdiuc_s | S | S | S | S | |
| Family Allowance | bch00_s | S | S | S | S | |
| Supplement due to taking care of a child during childcare leave (childcare leave allowance) | bcc | I | I | I | I | No data on work history |
| Supplement for lone parents | bchlp_s | PS | PS | PS | PS | Eligibility from data |

| | | | | | | |
|---|---|---|---|---|---|---|
| Supplement for child birth | bchba_s | S | S | S | S | |
| Supplement for large families | bchlg_s | S | S | S | S | |
| Supplement for starting the school year | bched_s | S | S | S | S | |
| Supplement for education outside place of living | bchot | I | I | I | I | No data on place of living |
| Supplement for education or rehabilitation of disabled child | bchdied_s | S | S | S | S | |
| Child Birth | bchuc_s | - | - | - | - | |
| Allowance | bchbamtna_s | S | S | S | S | |
| Nursing Allowance | bcrdi_s | PS | PS | PS | PS | Eligibility based on declaration of positive number of months of benefit take-up in the database |
| Special Nursing Allowance | bdinc_s | PS | PS | PS | PS | No data on persons taking care of family member from outside the household |
| Parental Allowance | bchba01_s | - | - | - | S | |
| Housing Benefits | bho_s | S/PS | S/PS | S/PS | S/PS | Eligibility from data or full simulation |
| Permanent social assistance | bsapm_s | S | S | S | S | |
| Temporary social assistance | bsatm_s | S | S | S | S | Eligibility is based on the wealth test |
| Childcare Allowance | bchcc | - | - | - | S | |
| Special Circumstances social assistance | bsaot | 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? |
|---|---|---|---|---|---|---|
| | | 2013 | 2014 | 2015 | 2016 | |
| Personal Income Tax | tin_s | S | S | S | S | |
| Corporate Income Tax | | E | E | E | E | No information available |
| Agricultural Income Tax | tag_s | S | S | S | S | |
| Forestry Tax | | E | E | E | E | No information available |

| | | | | | | |
|---|---|---|---|---|---|---|
| Tax Card and lump-sum revenue | | E | E | E | E | No information available |
| Gaming Tax | | E | E | E | E | No information available |
| Tax on Goods and Services – VAT | | E | E | E | E | No information available |
| Excise Duty | | E | E | E | E | No information available |
| Old-age insurance | | 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 | Amounts contributed by the central government from benefits are not taken into account (except unemployemnt benefit) |
| Sickness Insurance | tsceehl_s | S | S | S | S | |
| Work Accident Insurance | tscerac_s<br>tscerac_s | S | S | S | S | |
| Fund of Guaranteed Employee Benefits | tscerei_s | S | S | S | S | |
| Labour Fund | tscerui_s | S | S | S | S | |
| Health Insurance | thl_s | 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 the period from 2013 to 2016 few structural changes of simulated policies occurred:

- Child Birth Allowance became a means-tested benefit in 2013, for earlier years the benefit's output variable name is bchuc_s (non means-tested child birth allowance), while for the years from 2013 to 2016 the output name for this benefit is bchbamtna_s (means-tested child birth allowance), details of this reform are described in section 2.4.10 of the Report.
- in 2013 a policy addressed to individuals who resign from employment or other paid job in order to take care of a dependant relative was implemented, this benefit is described in details in section 2.4.12 of the Report.
- Since January 2016 parents of new born children who are not eligible to maternity leave allowance can claim parental allowance. The benefit is described in section 2.4.13 of the Report.
- Since April 2016 parents of children can claim childcare allowance (family 500+ benefit), the benefit is paid per eligible child fulfilling specified age condition. For first (oldest) child in the family within the specified age range the benefit is means tested

and to qualify family per capita income must not exceed a specified threshold, this benefit is described in section 2.4.17 of the Report.

## 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 2013-2016 included in the model's spine are reflected by on/off marks. The majority of policies are being simulated throughout the whole given period with exception of two policies introduced in 2016: the tapered withdrawal of Family Allowance with supplements and Childcare Allowance. Two EUROMOD modules: yem_pl, output_hh_pl are switched off in the baseline.

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 parts 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. Personal Income Tax (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 tax modelled in the spine – 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 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 because 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 2016 Familly Allowance with supplements is gradually withdrawn (tapered at 100%) as income used for the purpose of means-test increases (ben_fatpr_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 logical 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 a person receives Unemployment Benefit. After Nursing Allowance, Special Nursing Allowance is calculated (ben_sna_pl). It has similar requirements as Nursing Allowance – claimant cannot receive Unemployment Benefit at the same time, and additionally it is means-tested benefit which uses income concept from Family Allowance.

Parental Allowance is simulated in policy ben_pa_pl. Eligible parent who receives Unemployment Benefit or Maternity Benefit which is lower than Parental Allowance value is granted with top-up of those benefits. Within tax unit take-up of Family Allowance Supplement due to Childcare Leave, Nursing Allowance or Special Nursing Allowance excludes the eligibility to Parental Allowance.

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

Permanent Social Assistance and Temporary Social Assistance are 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.

The very last simulated benefit is the newly introduced (April 2016) Childcare Allowance. This benefit uses for the purpose of mean-test the same income concept as Family Allowance. However, Childcare Allowance is not used in income concepts of other benefits like Family Allowance, Child Birth Allowance, Nursing Allowance, Special Nursing Allowance, Housing Benefit or Social Assistance. This is why Childcare Allowance is the last of benefits simulated in the model.

Described order of simulation is justified. Family Allowance with supplements, Special Nursing Allowance, Housing Benefits, Social Assistance and Childcare Allowance - 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, 2013 - 2016

| Policy | 2013 | 2014 | 2015 | 2016 | Description of the instrument and main output |
|---|---|---|---|---|---|
| ConstDef_pl | **on** | **on** | **on** | **on** | DEF: CONSTANTS |
| SetDefult_pl | **on** | **on** | **on** | **on** | DEF: SET DEFAULT |
| Uprate_PL | **on** | **on** | **on** | **on** | DEF: UPRATING FACTORS |
| ILDef_PL | **on** | **on** | **on** | **on** | DEF: INCOME CONCEPTS |
| TUDef_PL | **on** | **on** | **on** | **on** | DEF: ASSESSMENT UNITS |

| | | | | | |
|---|---|---|---|---|---|
| yem_pl | off | off | off | off | INC: MINIMUM WAGE |
| neg_pl | on | on | on | on | DEF: recode negative self-employment income to zero |
| bun_pl | on | on | on | on | BEN: Unemployment Benefit |
| sic_ee_pj_pl | on | on | on | on | SIC: Employee (permanent contract) |
| sic_er_pj_pl | on | on | on | on | SIC Employer (permanent contract) |
| sic_ee_tj_pl | on | on | on | on | SIC: Employee (temporary contract) |
| sic_er_tj_pl | on | on | on | on | SIC: Employer (temporary contract) |
| sic_fr_pl | on | on | on | on | SIC: Farmer |
| tax_hl_fr_pl | on | on | on | on | TAX: Farmers' health contribution |
| sic_se_pl | on | on | on | on | SIC: Self-employed |
| sic_ma_ee_pl | on | on | on | on | SIC: Maternity Leave Recipients (employee) |
| sic_ma_er_pl | on | on | on | on | SIC: Maternity Leave Recipients (employer) |
| sic_un_pl | on | on | on | on | SIC: Unemployment benefit recipient |
| tax_kt_pl | on | on | on | on | TAX: Tax on Capital Income |
| tax_hl_mx_pl | on | on | on | on | TAX: Maximum Health Insurance Tax |
| tax_it_tb_pl | on | on | on | on | TAX: Income Tax Base |
| tax_it_it_pl | on | on | on | on | TAX: Income Tax: Individual Taxation |
| tax_it_jt_pl | on | on | on | on | TAX: Income Tax: Joint Taxation |
| tax_it_pl | on | on | on | on | TAX: Income Tax: Optimisation |
| tax_hl_pl | on | on | on | on | TAX: Health Insurance |
| tax_ag_pl | on | on | on | on | TAX: Agricultural tax |
| ben_inc_pl | on | on | on | on | BEN: Farmers imputed income |
| pen_ns_pl | on | on | on | on | BEN: Nursing Supplement |
| ben_nb_pl | on | on | on | on | BEN: Nursing Benefit |
| ben_fa_pl | on | on | on | on | BEN: Family Allowance |
| ben_fas_pl | on | on | on | on | BEN: FA Supplements: child birth |
| ben_fas_pl | on | on | on | on | BEN: FA Supplements: starting school |
| ben_fas_pl | on | on | on | on | BEN: FA Supplements: education and rehabilitation |
| ben_fas_pl | on | on | on | on | BEN: FA Supplements: lone parent |
| ben_fas_pl | on | on | on | on | BEN: FA Supplements: large family |
| ben_fatpr_pl | n/a | n/a | n/a | on | BEN: Family Allowance with supplements |
| ben_cb_pl | on | on | on | on | BEN: Child Birth Allowance |
| ben_na_pl | on | on | on | on | BEN: Nursing Allowance |
| ben_sna_pl | on | on | on | on | BEN: Special Nursing Allowance |
| ben_pa_pl | n/a | n/a | n/a | on | BEN: Parental Allowance |
| ben_ho_pl | on | on | on | on | BEN: Housing Benefit |
| ben_sa_pl | on | on | on | on | BEN: Permanent Social Assistance |
| ben_sa_pl | on | on | on | on | BEN: Temporary Social Assistance |
| ben_cca_pl | n/a | n/a | n/a | on | BEN: Childcare Allowance |
| output_std_pl | on | on | on | on | DEF: STD OUTPUT INDIV. LEVEL |
| output_hh_pl | off | off | off | off | DEF: STD OUTPUT HLD LEVEL |

## 2.3 Policy switches

There are no switches used in the Polish model.[2]

## 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. Those conditions apply to the self-employeds as well, however self-employeds who pay SIC on preferential conditions during the first two years of running their business won't be eligible to unemployment benefit if they closed their business.

- ***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 the remaining months the benefit amount is lowered [2].[*]

Table 2.4 Base ammount of Unemployment Benefit

| Year | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Amount [1] | 823.60 | 831.10 | 831.10 | 831.10 |
| Amount [2] | 646.70 | 652.60 | 652.60 | 652.60 |

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.

[2] 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.

[*] numbers in square brackets appearing in descriptions of simulated policies refer to rows of Tables including information relevant to policies being described.

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 the base benefit amount and if one has work history period of at least 20 years of work, the benefit amount is 120% of the 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 aged 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 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Amount | 203.50 | 206.76 | 208.17 | 208.67 |

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 | 2013-2016 |
|---|---|
| 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. Until January 2016 Family Allowance (with supplements) was withdrawn at a point threshold. From January 2016 the benefit (with supplements) is withdrawn gradually as family income exceeds the threshold (with a 100% taper rate). 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. In January 2016 the system of point withdrawal of Family Allowance with its supplements was replaced with tapered withdrawal scheme (100% taper). To get the full amount of the allowance the 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 disabled 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 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Regulation period | 1.11.2012 - 31.10.2013 | 1.11.2013 - 31.10.2014 | 1.11.2014 - 31.10.2015 | 1.11.2015 - 31.10.2016 |
| [1] | 539.00 | 539.00 | 574.00 | 674.00 |
| [2] | 623.00 | 623.00 | 664.00 | 764.00 |
| [3] | 226.08 | 202.58 | 239.08 | 208.83 |

Note: PLN per month
Source: Ministry of Labour and Social Policy

- ***Benefit amount***

The base amounts of Family Allowance payments are given in the table below. However, in since January 2016 Family Allowance is tapered beyond the income threshold. When the income of a family exceeds income threshold, the Family Allowance amount is pooled together with its supplements and lowered by the amount of the surplus of family income over the income threshold. The lowered amount of Family Allowance with supplements may not be lower than the amount of 20 PLN per month.

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

Table 2.8 Family Allowance – benefit levels

| **Year** | **2013** | **2014** | **2015** | **2016** |
|---|---|---|---|---|
| Regulation period | 1.11.2012 - 31.10.2013 | 1.11.2013 - 31.10.2014 | 1.11.2014 - 31.10.2015 | 1.11.2015 - 31.10.2016 |
| [1] | 77.00 | 77.00 | 77.00 | 89.00 |
| [2] | 106.00 | 106.00 | 106.00 | 118.00 |
| [3] | 115.00 | 115.00 | 115.00 | 129.00 |

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 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 2.4.4).

- ***Benefit amount***

The supplement paid per child amount at 90.00PLN per month.

Table 2.9 Family Allowance Supplement for Large Families

| **Years** | **2013** | **2014** | **2015** | **2016** |
|---|---|---|---|---|
| Regulation period | 1.11.2012 - 31.10.2013 | 1.11.2013 - 31.10.2014 | 1.11.2014 - 31.10.2015 | 1.11.2015 - 31.10.2016 |
| Amount | 80.00 | 80.00 | 80.00 | 90.00 |

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 2.4.4)

- ***Benefit amount.***

Table 2.10 Family Allowance Supplement for Child Birth

| Years | 2013-2016 |
|---|---|
| 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 2.4.4)

- ***Benefit amount.***

Table 2.11 Family Allowance Supplement for Starting School Year

| Years | 2013-2016 |
|---|---|
| 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 2.4.4).

- ***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** | **2013** | **2014** | **2015** | **2016** |
|---|---|---|---|---|
| Regulation period | 1.11.2012 - 31.10.2013 | 1.11.2013 - 31.10.2014 | 1.11.2014 - 31.10.2015 | 1.11.2015 - 31.10.2016 |
| [1] | 60 | 60 | 60 | 90 |
| [2] | 80 | 80 | 80 | 110 |

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 2.4.4).

- ***Benefit amount***

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

Table 2.13 Family Allowance Supplement for Lone Parents

| Years | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Regulation period | 1.11.2012 - 31.10.2013 | 1.11.2013 - 31.10.2014 | 1.11.2014 - 31.10.2015 | 1.11.2015 - 31.10.2016 |
| [1] | 170 | 170 | 170 | 185 |
| [2] | 250 | 250 | 250 | 265 |

Notes: PLN per month, from 1.11.2015 benefit amount per all children must be below 370 and in case of disabled children must be below 530 PLN
Source: Ministry of Labour and Social Policy

### 2.4.10 Child Birth Allowance (*bchuc_s/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***

Since 2013, parents of new-born children need to meet the eligibility income test. Before 2013 the benefit used to be universal.

- ***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.

- ***EUROMOD notes***

Before 2013 the Child Birth Allowance was a non-means tested benefit, the respective output variable in EUROMOD for policy years before 2013 is named *bchuc_s*. From 2013 onwards the benefit is means-tested and the correspondent output variable in EUROMOD is *bchbamtna_s*.

### 2.4.11 Nursing Allowance (*bcrdi_s*)

- ***Definitions***

This benefit is addressed to individuals who resign from employment to take care of disabled family member with whom they remain in lineal consanguinity or with whom they are siblings (tu_fa_bna_pl)

- ***Eligibility conditions***

Until 31st of August 2009, this benefit was restricted to parents of disabled children. From 1st of September 2009 it can be also granted to relatives remaining in lineal consanguinity with disabled individuals or to siblings of disabled individuals. Until 2010 nursing benefit was a means-tested benefit. From 01.01.2010 the income test for the benefit no longer exists. In 2013 the additional eligibility criteria related to history of disability was introduced. Since 2013 the benefit is granted for those individuals who take care of disabled persons whose disability

started before reaching age of 18 (or age of 25 in case of those who studied at time when disability began).

- ***Income test***

Since 1.01.2010 this allowance is not means-tested.

- ***Benefit amount***

Fixed amount, which is independent from the number of disabled children in the family, was increased in July 2013, June 2014 and in January 2015 [1]. Since January 2012 until the end of 2014 claimants were also receiving supplements to Nursing Allowance [2].

- ***EUROMOD notes***

Since nursing allowance is granted based on criterion of age when disability occurred and there is no such information in the dataset, the eligibility is modelled based on declaration of nursing allowance take-up in the dataset. For policy years 2009-2016 Nursing Allowance is granted based on bcrdimy > 0 condition. For policy year 2008 it is granted based on variable bcrchdimy (it also need to be greater than zero). For policy years 2005-2007 the benefit is granted based on declaration of positive value of benefit in survey data (bcrchdi >0).

Euromod reflects each specific policy implementation at the 30th of June of each year. Therefore not all values reported in Table 2.14 are used in the model.

Table 2.14 Nursing Allowance

| Year | I-VI. 2013 | VII-XII. 2013 | I-V. 2014 | VI-XII. 2014 | I-XII 2015 | I-XII 2016 |
|---|---|---|---|---|---|---|
| [1] | 520 | 620 | 620 | 800 | 1,200 | 1,300 |
| [2] | 300 | 200 | 200 | 200 | n/a | n/a |

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). As opposed to Nursing allowance, there is no criterion on the age when disability started. The benefit is also paid for individuals taking care of disabled family members living in another household, however it is means-tested benefit.

- ***Eligibility conditions***

This benefit is granted to individuals who resigned from work in order to take care of their dependant relatives. Individuals must not receive unemployment benefit or pre-retirement pension and take 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 664 PLN per month.

Table 2.15 Special Nursing Allowance thresholds

| Year | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Regulation period | 01.01.2013 - 31.10.2013 | 01.11.2013 - 31.10.2014 | 1.11.2014 - 31.10.2015 | 1.11.2015 - 31.10.2016 |
| [1] | 623.00 | 623.00 | 664.00 | 764.00 |

Note: PLN per month
Source: Ministry of Labour and Social Policy

- ***Benefit amount***

520 PLN per month

- ***EUROMOD notes***

Due to limited information from SILC 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. The model assumes that individuals who resigned from work in order to take care of their dependant relatives are people who declare economic status of inactive person (les = 7) or other economic status (les = 9) and live in a household with disabled relative. It's also students (les = 6) who can claim special nursing allowance, however they need to proof that they have enough of time to take care of dependant relative (it is not modelled in EUROMOD).

### 2.4.13 Parental Allowance (*bchba01_s*)

- ***Definitions***

Family or household level benefit meant to support parents of new born children who are not eligible to maternity leave allowance: students, employees on civil contracts (i.e. withot social security contributions), individuals insured in Agricultural Social Insurance Fund (KRUS) or unemployed. One of the parents can also claim a top-up to Maternity Benefit or Unemployment benefit if value of one of those benefits is lower than 1000 PLN per month. The Parental Allowance payment period is 52 weeks, 65 weeks in case of birth of twins, 67 weeks for triplets, 69 weeks for quadruplets and 71 weeks for quintuplets.

- ***Eligibility conditions***

The benefit requires the presence of new born child in a family.

- ***Income test***

The benefit is not means tested. However the eligibility to Parental Allowance is excluded by eligibility to Family Allowance Supplement due to Childcare Leave, Nursing Allowance or Special Nursing Allowance.

- ***Benefit amount***

1000 PLN per month. The benefit amount is irrespective of the number of children born in one confinement. The parent of a new born child who is eligible to either Maternity Benefit or Unemployment Benefit with benefit amount below 1000 PLN per month can claim top-up to

one of those benefits equal to difference between 1000 PLN and the value of Maternity Benefit or Unemployment Benefit.

### 2.4.14 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 2.16 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 means-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 125% 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 2.17 Minimum Pension values

| Year | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Amount | 831.15 | 844.45 | 880.45 | 882.56 |

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 2.18 Housing Benefit – housing costs parameters

| | One person hh | | 2-4 people in the hh | | 5+ people in the hh | |
|---|---|---|---|---|---|---|
| **Income** | Below 125% | [125%,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 the 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

### 2.4.15 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 the same as retirement age. Since October 2015 per capita income must be below 604 PLN [1] for one person household and 514 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 (excluding 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 2.19 Permanent and Tempoorary Social Assistance thresholds

| **Year** | **2013** | **2014** | **2015** | **2016** |
|---|---|---|---|---|
| Regulation period | 01.01.2013 - 30.09.2013 | 01.10.2013 - 30.09.2014 | 1.10.2014 - 30.09.2015 | 1.10.2015 - 30.09.2016 |
| [1] | 542.00 | 542.00 | 542.00 | 604.00 |
| [2] | 456.00 | 456.00 | 456.00 | 514.00 |

Note: PLN per month

Source: Ministry of Labour and Social Policy

- ***EUROMOD notes***

Although the statutory retirement age in Poland is 60 years and 11 months for women or 65 years and 11 months for men (state in June 2016) in this policy it is assume d that retirement age is 60 for women and 65 for men

### 2.4.16 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 2.20 Permanent and Tempoorary Social Assistance thresholds

| **Year** | **2013** | **2014** | **2015** | **2016** |
|---|---|---|---|---|
| Regulation period | 01.01.2013 - 30.09.2013 | 01.10.2013 - 30.09.2014 | 1.10.2014 - 30.09.2015 | 1.10.2015 - 30.09.2016 |
| [1] | 542 | 542 | 542 | 604 |
| [2] | 456 | 456 | 456 | 514 |

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_bsatmefna) while the rest of the eligible amount may be paid by the local government. In the model it is assumed that local government pays 0% [3] of the amount at its disposal due (co_bsatmefmu).

The model allows to choose between the effective amount (co_bsatmefna+ co_bsatmefmu) and the entitled amount (co_bsatmen).

Table 2.21 Temporary Social Assistance – theoretical and modelled funding proportions

| Year | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| [1] | 50% | 50% | 50% | 50% |
| [2] | 50% | 50% | 50% | 50% |
| [3] | 0% | 0% | 0% | 0% |

Source: Ministry of Labour and Social Policy

Table 2.22 presents the estimation of share of local government spednings in funding of Temporary Social Assistance statutory amounts. In years 2013-2016 proportions of local government spending in statutory amount of Temporary Social Assistance varied from 1.2% to 2.3%.

Table 2.22 Temporary Social Assistance – estimation of actual funding proportions

| Year | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Statutory amount guaranteed by central government (millions of PLN) | 983.3 | 938.0 | n/a | n/a |
| Theoretical spending of local government (millions of PLN) | 983.3 | 938.0 | n/a | n/a |
| Theoretical total spending of central & local government (millions of PLN) | 1,966.6 | 1,876.1 | n/a | n/a |
| Actual spending of local government (millions of PLN) | 23.7 | 23.2 | n/a | n/a |
| Proportion of local government spending to theoretical spending in % | 1.2% | 1.2% | n/a | n/a |

Source: Own calculations using Ministerstwo Pracy i Polityki Społecznej (2014b-2015b)

### 2.4.17 Childcare Allowance (*bchcc_s*)

- ***Definitions***

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

- ***Eligibility conditions***

Childcare Allowance is granted to families with dependent children as a universal benefit for every second and any subsequent child. To claim the allowance for the first (oldest) child a family needs to have incomes below a specified income threshold. Dependent children are defined as those aged less than 18.

- ***Income test***

The benefit is means-tested only concerning payments for the first child (oldest child within the age range 0-17). In case of the second and any subsequent child, the allowance is granted irrespective of income. The income concept used in the means-test is the same as in family allowance. It uses family income from the previous year: net income (net of social security contributions, health insurance contributions and income tax payments). Family income per capita must be below 800.00 PLN per month (1,200.00 PLN per month if there is disabled child in a family).The income test for farmers is applied on imputed income equal to the number of converted hectares times a specified amount which is the same as in Family Allowance for farmers means-test (208.83 per hectare in 2016).

- ***Benefit amount***

The benefit amount is 500.00PLN per month. Payment period in the first year of Childcare Allowance functioning is from 1st of April till 30th of September. In the following years payment period is intended to last from the 1st of October in a given year till the 30th of September of the following year.

## 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 an 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:

gross income = net income + IT + HI + 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. 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 2.23 Old-age pension and disability insurance – income thresholds (annual in PLN)

| | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Threshold for old-age pension insurance and disability insurance | 111,390 | 112,380 | 118,770 | 121,650 |

Source: Zakład Ubezpieczeń Społecznych (2016e).

- ***Contribution rates***

Table 2.24 Employee social security contribution rates (01.01.2013 – 31.12.2016)

| | Period | Total contribution rate (%) | Employee rate (%) | Income base limit |
|---|---|---|---|---|
| **Old-age pension insurance** | 01.01.2013 – 31.12.2016 | 19.52 | 9.76 | gross income |
| **Disability insurance** | 01.01.2013 – 31.12.2016 | 8.00 | 1.5 | gross income |
| **Sickness Insurance** | 01.01.2013 – 31.12.2016 | 2.45 | 2.45 | gross income |

Source: Zakład Ubezpieczeń Społecznych (2016e).

### 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 2.25 Employer social security contribution rates (01.01.2013 – 31.12.2016)

| | Year | Total contribution rate (%) | Employer rate (%) | Income base limit |
|---|---|---|---|---|
| **Old-age pension insurance** | 01.01.2013 – 31.12.2016 | 19.52 | 9.76 | gross income |
| **Disability insurance** | 01.01.2013 – 31.12.2015 | 8.00 | 6.5 | gross income |
| **Sickness Insurance** | 01.01.2013 – 31.12.2016 | 2.45 | – | gross income |
| **Work accident insurance** | 01.01.2013 – 31.03.2015 | from 0.67 to 3.86 | 0.67 – 3.86 | gross income |
| | 01.04.2015 – 31.12.2016 | from 0.40 to 3.60 | 0.40 – 3.60 | gross income |
| **Labour Fund** | 01.01.2013 – 31.12.2016 | 2.45 | 2.45 | gross income |
| **Fund of Guaranteed Employee Benefits** | 01.01.2013 – 31.12.2016 | 0.10 | 0.10 | gross income |

Source: Zakład Ubezpieczeń Społecznych (2016e).

### 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 2.26 Old age pension quarterly amounts for farmers conditional on farm area (1st quarter 2013 – 2nd quarter 2016)

| Year | Quarter | Farm's size | | | | |
|---|---|---|---|---|---|---|
| | | up to 50 ha | 50ha – 100ha | 100ha – 150ha | 150ha – 300ha | more than 300 ha |
| 2013 | 1st | 240 | 528 | 816 | 1104 | 1392 |
| 2013 | 2nd | 249 | 549 | 846 | 1146 | 1446 |
| 2013 | 3rd | 249 | 549 | 846 | 1146 | 1446 |
| 2013 | 4th | 249 | 549 | 846 | 1146 | 1446 |
| 2014 | 1st | 249 | 549 | 846 | 1146 | 1446 |
| 2014 | 2nd | 252 | 555 | 861 | 1164 | 1467 |
| 2014 | 3rd | 252 | 555 | 861 | 1164 | 1467 |
| 2014 | 4th | 252 | 555 | 861 | 1164 | 1467 |
| 2015 | 1st | 252 | 555 | 861 | 1164 | 1467 |
| 2015 | 2nd | 264 | 582 | 897 | 1215 | 1533 |
| 2015 | 3rd | 264 | 582 | 897 | 1215 | 1533 |
| 2015 | 4th | 264 | 582 | 897 | 1215 | 1533 |
| 2016 | 1st | 264 | 582 | 897 | 1215 | 1533 |
| 2016 | 2nd | 264 | 582 | 900 | 1218 | 1536 |

Source: Kasa Rolniczego Ubezpieczenia Społecznego: *KRUS w liczbach*: http://www.krus.gov.pl/krus/krus-w-liczbach/wymiar-kwartalnych-skladek-na-ubezpieczenie-spoleczne-rolnikow/ (last access 14.11.2016)

Table 2.27 Work Accident, sickness and maternity insurance contribution rates of KRUS (1st quarter 2013 – 2nd quarter 2016)

| Work accident, sickness and maternity insurance | 1st quarter | 2nd quarter | 3rd quarter | 4th quarter |
|---|---|---|---|---|
| 2013 | 126.0 | 126.0 | 126.0 | 126.0 |
| 2014 | 126.0 | 126.0 | 126.0 | 126.0 |
| 2015 | 126.0 | 126.0 | 126.0 | 126.0 |
| 2016 | 126.0 | 126.0 | n/a | n/a |

Source: Kasa Rolniczego Ubezpieczenia Społecznego: KRUS w liczbach: http://www.krus.gov.pl/krus/krus-w-liczbach/wymiar-kwartalnych-skladek-na-ubezpieczenie-spoleczne-rolnikow/ (last access 14.11.2016)

### 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 2.28 Self-employed social contributions (2013-2016)

| Year | Minimum income base | Old-age pension insurance | Disability insurance | Sickness insurance | Work accident insurance | Labour Fund |
|---|---|---|---|---|---|---|
| **2013** | 2,227.80 | 434.87 | 178.22 | 54.58 | 43.00 | 54.58 |
| **2014** | 2,247.60 | 438.73 | 179.81 | 55.07 | 43.38 | 55.07 |
| **2015** | 2,375.40 | 463.68 | 190.03 | 58.20 | 42.76 | 58.20 |
| **2016** | 2,433.00 | 474.92 | 194.64 | 59.61 | 43.79 | 59.61 |

Note: PLN per month
Source: Zakład Ubezpieczeń Społecznych (2016f).

- ***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 Social Security Contributions (SSC) 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. Self-employed who fulfil those requirements can use a reduced rate of 30% instead of the standard rate of 60%, to assess their social security contribution base. Rate of 30% is not modelled in EUROMOD. Table 2.29 summarizes the proportion of self-employed who use rate of 30% to asses SIC base to total number of self-employed SIC contributors. In 2013 those self-employed who paid preferential SIC (excluding Labour Fund contributions) accounted for 20.5% to 21.2% of the total number of self-employed, while in 2015 it was 20.0% to 20.7%. Preferential SIC from self-employed (excluding Labour Fund contributions) in 2013 accounted for 5.3% to 5.8% of aggregated values of self-employed SIC and in 2015 these proportions ranged from 5.4% to 5.6% (Table 2.29).

Table 2.29 Proportion of contributors of preferential self-employed SIC to the total number of self-employed SIC contributors (2013-2015)

| SIC for: | 2013 | 2014 | 2015 |
|---|---|---|---|
| Retirement and disability pension | 21.1% | 21.4% | 20.7% |
| Sickness insurance | 20.5% | 20.7% | 20.0% |
| Work accident insurance | 21.2% | 21.5% | 20.7% |
| Labour Fund | n/a | n/a | n/a |

Note: The ratios are proportions of monthly averages within the years.
Source: Zakład Ubezpieczeń Społecznych (2014b-2016b, 2014c-2016c, 2014d-2016d).

Table 2.30 Proportion of aggregated values of contributions from preferential self-employed SIC contriubtors to the total value of self-employed SIC contributions (2013-2015)

| SIC for: | 2013 | 2014 | 2015 |
|---|---|---|---|
| Retirement and disability pension | 5.7% | 5.9% | 5.5% |
| Sickness insurance | 5.3% | 5.3% | 5.4% |
| Work accident insurance | 5.8% | 6.0% | 5.6% |
| Labour Fund | n/a | n/a | n/a |

Note: The ratios are proportions of monthly averages within the years.
Source: Zakład Ubezpieczeń Społecznych (2014b-2016b, 2014c-2016c, 2014d-2016d).

In EUROMOD it is assumed that self-employeds pay accident insurance rate for entrepreneurs who hire less than 9 persons. Table 2.30. shows how this rate [1] changed between 2013 and 2016.

Table 2.30 Accident insurance rate for self-employeds hiring less than 9 persons (2013-2016)

| Year | 2013 | 2014 | I-III. 2015 | IV.-XII. 2015 | 2016 |
|---|---|---|---|---|---|
| [1] | 1.93% | 1,93% | 1.93% | 1.80% | 1.80% |

Source: Zakład Ubezpieczeń Społecznych (2016e).

### 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.

**HI income base = net income + IT + HI = gross income – 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 is 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 2.31 Employees' health insurance rates (2013 - 2016)

| Year | HI Paid | HI Deducted |
|---|---|---|
| 2013-2016 | 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 pays 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 2.32 Health Insurance for self-employed (monthly)

| Year | Period | HI income base limit | HI dues | IT-deductible dues |
|---|---|---|---|---|
| **2013** | Jan-Dec | 2,908.13 | 261.73 | 225.38 |
| **2014** | Jan-Dec | 3,004.48 | 270.40 | 232.85 |
| **2015** | Jan-Dec | 3,104.57 | 279.41 | 240.60 |
| **2016** | Jan-Dec | 3,210.60 | 288.95 | 248.82 |

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. Farmers 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 2.33 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 | in 2012 it used to be 9% of base amount of 33,4% of average salary in non-financial corporations sector in 4th quarter of previous year per person, since 2013 the salary from the year that was two years before the current year is applied |

Source: Kasa Rolniczego Ubezpieczenia Społecznego: ZADANIA KRUS: Ubezpieczenia zdrowotne: http://www.krus.gov.pl/zadania-krus/ubezpieczenia-zdrowotne/ (last access 14.11.2016)

## 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 June 2016 the list of tax allowances included:

- revenue costs,
- charitable donations,
- housing loan (mortgage) interest,
- medical rehabilitation expenses,
- internet access expenses,
- contributions to Individual Pension Security Account,

- tax deduction for volunteer blood-donors,
- purchase of new technologies,
- research and development expenses.

### 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 2013 till 2016 in PLN.

Table 2.34 Cost exemptions on permanent work income (annual in PLN)

| | | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| Job(s) within the residence area | one job | 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 |
| Job(s) outside of the residence area | one job | 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 |

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 then deduction is not allowed.

Table 2.35 Charitable donations

| Donation type | Year | deduction limit (% of taxable income) |
|---|---|---|
| donations for churches | 2013-2016 | no limit |
| other donations | 2013-2016 | 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 2.36 Housing loan interest allowance

| Year | deduction limit (amount of mortgage loan, PLN ) |
|---|---|
| 2013-2016 | 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 2.37 Medical rehabilitation expenses allowance

| | year | deduction limit (PLN per year) |
|---|---|---|
| Medical rehabilitation expenses allowance | 2013-2016 | 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 the 1st of January 2012 individuals who pay contributions to their Individual Pension Security Accounts can deduct the amount of those contributions from their tax-base. However, the deducted amount is subject to a limit set by Ministry of Family, Labour and Social Policy for each year. In 2013 the deduction could not exceed 4% of the individual's retirement insurance contribution base from the previous year, with maximum deduction of 4,231.20 PLN in 2013. Moreover, those individuals whose salary in 2013 was below the minimum wage could apply the deduction limit of 720 PLN. Since 2014 every contributor to Individual Pension Security Account is subject to one limit of deduction irrespectively of actual contribution base. In 2016 the deduction limit was limited up to 4,866.00 PLN.

Table 2.38 The limit of taxable income deductions due to payments to Individual Pension Security Accounts in PLN per year (2013-2016)

| Year | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Deduction limit | 4% of contribution base, with maximum limit of 4,231.20 per year or 720 for those individuals whose earnings were below minimum wage from 2012 multiplied by 12 months | 4,495.20 | 4,750.80 | 4,866.00 |

Source: Ministry of Finance

- ***EUROMOD notes***

This deduction is not modeled in EUROMOD.

### Payments Tax deduction for volunteer blood-donors

Volunteer blood-donors can deduct from their taxable income 130 PLN per litre of donated blood, plasma or other blood particles. The deduction cannot exceed 6% of individual's taxable income.

- ***EUROMOD notes***

This deduction is not modeled in EUROMOD.

### Purchase of new technologies

Until the 1st of January 2016 the self-employed conducting non-agricultural economic activity could deduct from their taxable income 50% of the value of purchased intangible assets including patents, results of research & development works that are innovative and have not been used worldwide for more than 5 years since implementation. If the entrepreneur couldn't deduct full amount of deduction because of low taxable income, the remaining part of deduction could be used within three years. This deduction is being withdrawn and since the 1st of January it is functioning as an acquired right. Entrepreneurs conducting business in special economic zones are not eligible for this tax deduction.

- ***EUROMOD notes***

This deduction is not modeled in EUROMOD.

### Research and development expenses

Since the 1st of January 2016 entrepreneurs can deduct from their taxable income the expenses on research and development activities. This deduction is intended to replace deduction for purchase of new technologies. The possible amount of deduction is varying depending on category of costs connected with research and development activity and size of company. Entrepreneurs can deduct up to 30% of employers costs connected with salaries of employees conducting research and development work. The second category of costs includes:

- purchases of raw materials and resources used in the R&D process;

- expert reports, opinions, consulting services and purchase of research results from scientific entities defined in Act on the Principles of Financing Science used for the purpose R&D activity;
- charges for the use of research equipment used in R&D activity.

The amount of deduction due to bearing the costs grouped in the second category mentioned above depends on size of business entity. Micro, small and medium sized business entities (according to classification from the Act on Freedom of Business Activity) can deduct up to 20% of the costs mentioned in the second category. Large business entities can deduct up to 10% of the cost from this category. If the entrepreneur couldn't deduct full amount of deduction because of low taxable income, the remaining part of deduction could be used within three years. Entrepreneurs conducting business in special economic zones are not eligible for this tax deduction.

- ***EUROMOD notes***

This deduction 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

There are only 2 brackets in Poland:

Table 2.39 Tax schedule (2013-2016)

| 2013-2016 | | | |
|---|---|---|---|
| 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 2.40 Universal tax credit (2013-2016)

| | **2013-2016** |
|---|---|
| Universal tax credit (in PLN) | 556.02 |

Source: Ministry of Finance

- 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 as a non-refundable tax credit. Since tax year 2013 taxpayers entitled to child tax credit can deduct higher values of CTC per 3rd, 4th, 5th and any subsequent dependent child. After changes which applied to incomes from tax year 2014 onwards, CTC became a refundable tax credit. After the reform, those who pay SIC and HI are eligible to a top-up of CTC which is limited up to the amount of their contributions.

Table 2.41 Child tax credit (2013-2016)

| | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| per 1st or 2nd child | 1,112.04 | 1,112.04 | 1,112.04 | 1,112.04 |
| per 3rd child | 1,668.06 | 2000.04 | 2000.04 | 2000.04 |
| per 4th, 5th or any subsequent child | 2,224.08 | 2700.00 | 2,700.00 | 2,700.00 |

Note: PLN per year
Source: Ministry of Finance

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

- ***EUROMOD notes***

The value of universal tax credit in Poland which is equal to 556.02 PLN per year is defined in The Natural Persons' Income Tax Act. In personal income taxation the tax base which is free of taxation is derived by division of UTC value (556.02 PLN per year) by tax rate in the first tax bracket (18%). Thus the value of taxable income which is free of taxation is equal to 3,089 PLN per year. However, the amendment of The Tax Ordinance Act that came into force on the 1st of January 2006 instituted that both tax base and tax liability are rounded to full units of PLN. Tax base and tax liability ending with 0.50 PLN are rounded down to the nearest integer, while values ending with 0.51 PLN are rounded up to the nearest integer. Two stages of rounding – the first applied to tax base and the second regarding to tax liability – causes that incomes up to 3,091.50 PLN per year are free of taxation. The rounding of tax base and tax liability is not conducted in EUROMOD.

In polish tax law, one of dependent child conditions refers to a child's income which is required to be less or equal to the tax free amount. In EUROMOD, for the purpose of dependent child identification, the value of 3,091 PLN per year is used.

## 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, 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 proceeding the tax year.

Table 2.42 Amounts of agricultural tax (2013-2016)

| | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| **Amount of agricultural tax per:** | | | | |
| 1 conversion hectare | 189.65 | 173.20 | 153.43 | 134.38 |
| 1 hectare | 379.30 | 346.40 | 306.85 | 268.75 |
| 1 quintal of rye | 75.86 | 69.28 | 61.37 | 53.75 |

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 55%[3] 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 base is a net gain.
- 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.

[3] 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.

- 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 a 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 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 have 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 | 2014 |
|---|---|
| Original name | UDB EU-SILC |
| Provider | GUS |
| Year of collection | 2014 |
| Period of collection | 5th of May – 18th of June |
| Income reference period | 2013 |
| Sample size | 12,978 |
| Response rate | 55.4% |

The survey unit is the household and all the household members who were at least 16 years old by December 31, 2013. 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.

### 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:

- individuals over 15 years of age, 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;
- 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

A 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 the selection of dwellings was conducted. All the households from the selected dwellings are supposed to enter the survey.

According to Central Statistical Office (2016d): "*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. Big cities formed independent strata, 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 powiats (NUTS4). Altogether, 250 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 | 0.554 |

| | |
|---|---|
| Warsaw | 0.390 |
| Towns 500 000 – 1 000 000 inhabitants | 0.419 |
| Towns 100 000 – 500 000 inhabitants | 0.483 |
| Towns 20 000 – 100 000 inhabitants | 0.536 |
| Towns less than 20 000 inhabitants | 0.559 |
| Rural areas | 0.681 |

### Non-response

Household non-response rate was 20.7%. The number of contacted households was 16,082 out of 17,418 in a sample and 12,980 interviews were conducted. The main reason for lack of contact was "There is no dwelling at the adress" (1,231 cases). The main reason of non-responding was refusal to co-operate (2,287 cases) and "Entire household temporarily away for duration of fieldwork" (312 cases).

The number of accepted interviews for people at age of 16 or more was 27,753. There were 21,359 face to face interviews and 6,394 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 2014, 136 children born after income reference year were dropped from the sample. No household was 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 2014 - such as age, marital status, household composition, education, living condition, health, refer to year of data collection (2014).

Information on labour market activity and working history covers partially year of data collection and in some characteristics refer to year 2013. This include information on working status in 2014, attributes of employing company (such as size and sector) or changes of labour market activities in prior year 2013 and reasons of that changes.

The EU-SILC UDB information on incomes refers to the year 2012. It 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 2014)"* which had been published by the Central Statistical Office contains a 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 imputation process of 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 the 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 aggreagtion in UDB SILC2014

| 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 Supplement for education outside living place) Alimony down payment, Old-age pension Supplements to pensions | Family allowance, childcare 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, Special nursing allowance |
| Social exclusion | hy060g | Other special allowances from Social Assistance, Other financial support from NGOs | Permanent Social Assistance, Temporary Social Assistance |
| 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 disaggrgation using national indicators (EU-SILC -> EUROMOD)

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

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 | *bcc* | Childcare leave supp. |
| **bchlp00** | Main lone parent supp. | bchunlp | Minor lone parent supp. |
| **bchlg** | Large family supp. | *bchoe* | Outside education |
| **bchba** | Child birth supp. | *bma* | Maternity benefit |
| **bchuc** | Universal child birth allowance | *bfaam* | Alimony Fund allowance |
| **bcrdi** | Nursing allowance | bchfsa | Foster family benefit |
| **bdinc** | Special nursing allowance | | |
| **Simulated but not in UDB** | | | |
| **bchdied** | 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 | *bsaot* | 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 famers in the model. While creating EUROMOD dataset, the main information used to derive farmer status was question dg4 which is collected at the household level. This question gives answer to whether particular household conducted agricultural activity in 2013. In order to impute the farmer status from household level data, additional conditions were checked for in Euromod's dataset 2014. Imputation includes two stages. In the first stage a person is classified as 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 uses a farm and income from self-employment is not declared but income from paid-employment is positive. 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 (question dg10), an additional round of imputation is conducted. The second round of imputation is performed with use of the same conditions as those enumerated in the first stage of imputation.

#### 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.

As a rule, updating factors are provided both for simulated and non-simulated income components present in the input dataset. Note however that in the case of simulated variables, the actual simulated amounts are used in the baseline rather than the uprated original variables in the dataset. Updating factors for simulated variables are provided so as to facilitate the use of the model in cases when the user wishes to turn off the simulation of a particular variable. The list of uprating factors as well as the sources used to derive them can be found in Annex (Table 8.1).

# 4. VALIDATION

## 4.1 Aggregate Validation

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

### 4.1.1 Components of disposable income

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 |
| *Unemployment benefits* | bun_s | py090g |
| *Old-age benefits* | poa | py100g |
| *Survivor' benefits* | 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 |
| *Family/children related allowances* | bch00_s, bchba_s, bchlp00_s, bchlg_s, bchuc_s, bchbamtna_s, bdinc_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. | yiy | hy090g |
| Income received by people aged under 16 | yot | hy110g |
| Regular taxes on wealth | tpr | hy120g |
| *Regular inter-household cash transfer paid* | xmp | hy130g |
| *Tax on income and social contributions* | ils_tax ils_sicee ils_sicse | hy140g |
| *Repayments/receipts for tax adjustment* | 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 = Original income (ils_origy) + benefits (ils_ben) – taxes (ils_tax) – employee social insurance contributions (ils_sicee) – 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 below 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 93% to 96%. The lowest ratio of 93% can be observed in year 2015. On the other hand, the unemployment numbers taken from external statistics show higher variability. The value reported by the CSO for the year 2015 is much lower than in the EUROMOD's database resulting in a ratio of 170%. The ratio of the number of unemployed in EUROMOD to number in external data is ranging from 124% to 141% in years 2013-2014. However, the number of unemployed individuals in EUROMOD dataset is assessed based on self-reported status of respondents while external data covers only for those unemployed who fit BAEL (ILO) definition of unemployment. According to the BAEL (ILO) definition individuals are classified as unemployed if they had been actively seeking for the job within a period of 4 weeks prior to the BAEL survey.

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

The number of employment income recipients in EU-SILC (14,373 thousands recipients) fits well the values reported by CSO for years 2013-2015. The ratios between EUROMOD and external statistics result in the range from 97% to 101%. Self-employment income recipients number accounts for 3,255 thousands individuals in EUROMOD database and it is below the number of self-employed reported by external statistics for 2013 with a ratio equal to 86%. Changes in the number of self-employed reported by CSO in years 2014-2015 resulted in ratios that vary from 84% to 86%.

Aggregated values of employment income in EUROMOD database are similar to values present in external statistics. Relevant ratios for years 2013-2014 are ranging from 105% to 104%. According to external statistics, values of self-employment income are significantly oversimulated, with ratio of 126% in 2013 and 124% in year 2014. 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 variables[4]: "collection of accurate income information from the self-employment is one of the most problematic areas for surveys". The 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. Moreover, 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 presents validation of number of non-simulated taxes payers and benefits recipients. Looking closer to subgroups of pensioners reveals oversimulation in number of old age pension recipients with a ratio of 114% for 2013 and a ratio of 98% in the group of disability pension recipients for 2013. At the same time the number of survivors pension recipients is undersimulated in 2013 with a ratio of 70%. Undersimulation of the number of survivor pension recipients may be explained by the fact that those benefits can be perceived by their claimants as

[4]Eurostat (2015).

either old-age or disability pension and incorrectly reported in the survey data. If one would add up numbers of recipients of disability, old age and survivors pensions and compare it with relevant sum of external statistics then the ratio of accuracy would be 105% in 2013, 106% in 2014-2015. This shows that in general the information about recipients of disability, old-age and survivors pensions in EUROMOD is accurate. The number of pre-retirement benefit recipients in 2013 accounts for 97% of relevant external statistics. There is no clear explanation of oversimulation of the number of recipients of farmer's structural pensions. According to the external data the benefit is oversimulated by 18% to 21% in years 2013-2014. The number of recipients of the supplement due to childcare leave is fitting well to the external statistics for year 2013 resulting with fit ratio of 88%. For years 2014-2015 the ratio indicates oversimulation by 32% to 45%. Oversimulation of the number of childcare leave recipients is explained by introduction of parental leave in 2013. Parental leave gives entitlement to maternity benefit which is connected with higher financial support during the first 52 weeks of child's live. This caused a shift of parents of young children from childcare leave towards parental leave which is visible in decrease reported number of supplement's recipients in years 2014-2015. 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 2013 disability pension amounts are undersimulated with ratio of 70%, survivor pension amounts have ratio of 62% and pre-retirement benefit is undersimulated with ratio of 90%. Undersimulation of survivors benefit aggregated amounts has the same explanation as in the case of number of recipients. The claimants of those benefits presumably reported them in the survey as old-age pensions. Similarly as in case of the number of recipients, there is no clear explanation of deviations of simulated values of pre-retirement benefits from the values reported in official statistics. The aggregated value of simulated childcare leave supplements to family allowance fits the external data well in 2013 resulting with undersimulation by 5%. Aggregate value of the childcare leave supplement starts to substantially diverge from external data for years 2014-2015 (oversimulation by 42% to 54%). The validation of property tax shows that households from the data paid from 20% to 23% of values reported by the Ministry of Finance, which might actually be truth because, except for households, private companies and state entities are also liable to pay property tax.

### 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 childcare leave. The number of recipients of main family allowance is undersimulated by the model. For 2013, the model simulates that 1,027 thousands of families were eligible to family allowance. This number accounts for 85% of families reported in official statistics. 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 2013 the simulated number of children born in families with right to supplement for child birth is 38% below the target official number. The number of children in families claiming

supplement for education of disabled child is undersimulated with a ratio of 72% for the income reference year 2013. 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 68%, 86% and 48% of external data for the income reference year 2013.The simulated number of child birth allowance take-up results in a ratio of 100% in 2013.

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 range between 83% to 93% of relevant administrative data, while ratios of simulated values of supplement for child birth vary from 65% to 75%. Aggregated values of supplement for starting school year are lower from benchmark statistics by 19% to 28%. Simulated values of supplement for large families accounts for 90% to 100% of external statistics while supplement for lone parents ranges between 42% to 48% of benchmark data. The simulated aggregated amount of child birth allowance account for 100% of external statistics from 2013.

Identification of recipients of nursing benefit is less successful. Simulated number of nursing benefit recipients in 2013 is 53% lower than benchmark value and aggregated value is 51% below the benchmark from 2013. This appear as a substantial undersimulation, but it is worth stressing that using EU-SILC it is impossible to track for the age at which an individual became disabled. It is an important condition since according to nursing benefit granting rules individuals above 16 years old with moderate degree of disability can claim nursing benefit if their disability started before reaching the age of 21. This factor is being controlled in simulation of nursing benefit by the condition that individual with moderate degree of disability is granted with the benefit if he declared take-up of the benefit in national SILC data. However, there are no individuals fitting this condition in EUROMOD dataset. It seems that simulation of nursing benefit lacks substantial group of nursing benefit recipients. In 2013 individuals aged above 16 years old with moderate degree of disability accounted for 30% of benchmark number of benefit's claimants.

The number of nursing allowance recipients simulated for income reference year 2013 is oversimulated with ratio of 108% of the number reported in official statistics. Ratio for 2014 is 167%, while for 2015 it's 158%. Oversimulation of nursing allowance recipients number for years 2014-2015 might be explained by the fact that this allowance is partially simulated based on declaration of take-up in data. Changes in nursing allowance granting rules that were introduced in 2013 led to a fall in the number of nursing allowance recipients in 2014. The accuracy of simulated aggregated value of nursing allowance account for 133% of the benchmark value from 2013. For years 2014-2015 oversimulation of aggregated values is higher and it reaches between 180% of benchmark from 2014 and 159% of value reported for 2015. Oversimulation of nursing allowance aggregated values for years 2014-2015 is linked to oversimulation of number of recipients of this allowance in those years.

Macrovalidation of special nursing allowance shows oversimulation of recipients number by 130% for 2013, nearly the same simulated number as in official statistics for 2014 and undersimulation by 47% for 2015. High oversimulation for the year of special nursing allowance introduction might be explained by the process of learing about new benefit rules by potential recipients. The simulated value for 2013 is 13 thousand recipients while average monthly number of recipients in 2013 was estimated around 6 thousand recipients. However, detailed statistics for the 1$^{st}$ and 2$^{nd}$ half of 2013, show that during the second half of the year average number of recipients of this allowance was around 11 thousand recipients (value for the first half was around 1 thousand recipients). When one compare simulated number of recipients for 2013 with average monthly number of recipients from the 2$^{nd}$ half of 2013, it turns out that simulated number of recipients is around 127% of the benchmark value from the 2$^{nd}$ half of the year 2013. Increase in the reported number of recipients of special nursing allowance in 2015 by

over 200% might be explained by two facts. The first is connected with a partial shift of former recipients of nursing allowance, who lost right to nursing allowance after changes from 2013, towards special nursing allowance. The second fact is that income threshold for means-test applied for the purpose of special nursing allowance was increased in November 2014 and November 2015. Those two facts connected with partial simulation of nursing allowance (person who claim nursing allowance can't apply for special nursing allowance), might cause oversimulation of special nursing allowance recipients number for the year 2015. Accuracy ratios for simulated aggregated special nursing allowance values for years 2013-2015 are consistent with ratios observed for simulated number of recpients. Aggregated value for 2013 is 138% above benchmark, value for 2014 is oversimulated by 5% and for 2015 is undersimulated by 46%.

The simulated number of recipients of the unemployment benefit for 2013 is 499,000 and 333,000 in official statistics. This is because 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 249,500 which would be 75% of the target official statistic. In order to fit exactly the number of 333,000 recipients, one should assume that the average duration of unemployment benefit take-up is 8 months even though some of the benefits are paid for 12 or even 18 months. Hence, it seems that the SILC database underrepresents unemployment benefit claimants. The simulated value misses the benchmark value by 36% for year 2013.

The simulation for 2013 identifies only 72% of the benchmark number of housing benefit recipients. The simulated value of housing benefit accounts for 89% of value from administrative data for 2013. Those differences might be explained by the fact that the real eligibility test for housing benefit consists of the income test and an informal assets test by local administration, 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 of recipients numbers are obtained for permanent and temporary social assistance. For 2013, simulation of those social assistance recipients results respectively with ratios equal to 102% and 100% respectively for the permanent and temporary social assistance. Simulated values are less accurate. Permanent social assistance has ratio of 90% for 2013 and temporary social assistance has ratio of 118% for 2013.

The number of employees who contribute to retirement and disability social insurance looks very poorly identified by the model. Simulation for 2013 returns 140% of the number of employees paying SIC for retirement, disability and illness. When it comes to aggregated values, the simulation for 2013 returns 130% of contributions paid by employees for retirement and disability and 128% of contributions paid for sickness insurance. 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 2013 would require assumption that average number of months should be equal to 8.6. Although it may seem too low we have to remember that the model assumes that all declared incomes are registered. The number of persons employed in the "shadow economy" for 2013 is estimated to be 1,078 thousands[5], if the number of payers outputted in the model were lowered by 1,078 thousands the average number of months would increase to 9.2. This supports the assumption that unregistered employment is the main reason for the observed differences both in the case of the simulated number of contributions payers and simulated aggregated values as well. The same arguments are valid for simulated employer contributions.

[5] Central Statistical Office (2016a).

The simulated number of the self-employed who pay social security contributions for retirement and disability is 33% above external data for 2013. In case of sickness insurance the simulated number of contribution payers is 59% above the benchmark number from 2013. Simulated number of self-employed accident insurance contributors is 33% above target value from 2013. When it comes to aggregated values simulated for 2013, the simulated values of retirement and disability contributions are 54% above benchmark value, simulated values of sickness contributions are 103% above relevant external statistics, while outputted value of accident contributions is 56% above the target. Similar explanations to those described above for employees apply for self-employed too. The model simulates the number of contributors in a year, while administrative data is expressed as monthly average. Moreover there is also a concern about unregistered economic activity of self-employed that is not reflected by the model. The number of self-employed who contribute for illness insurance is over-simulated because the model assumes that it is paid by all self-employed while the contribution is voluntary. 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 number of payers of social contributions for farmers for income reference year 2013 have ratio of 129% while the ratio for aggregated amount in 2013 is 127%. However, the number of agricultural tax payers is underestimated by the model and it accounts for 87% of administrative data for year 2013 while the value of simulated agricultural tax is 20% above benchmark for 2013. It seems that the procedure of identifying employed in agriculture sector may lack precision.

Simulated numbers of income tax and health insurance payers are close to the benchmark levels for the year 2013. Ratio for the number of income tax payers for 2013 is equal to 95%, and relevant ratio for health insurance payers is equal to 106%. Aggregated values of simulated personal income tax and health insurance are almost the same as the amounts in official statistics. Both, the aggregated values of personal income tax and health insurance are undersimulated by 2%.

## 4.2 Income distribution

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

### 4.2.1 Income inequality

In Table 4.9 we present income distribution indicators such as decile shares in population, median and mean equivalised incomes, Gini coefficient and income quantile ratio. In income reference year, 2013, shares of 1$^{st}$, 2$^{nd}$, 3$^{rd}$, 4$^{th}$, 5$^{th}$ and 10$^{th}$ income decile groups are simulated with 100% accuracy. For 2013, income decile shares in 6$^{th}$ and 9$^{th}$ decile are oversimulated by 1%, while the share of the 7$^{th}$ decile is oversimulated by 5%. On the other hand, the share in population of the 8$^{th}$ income decile group for the reference year 2013 is undersimulated by 2%.

Median equivalised incomes and mean incomes are 2% below the benchmark from the income reference year. The Gini coefficient is simulated with 97% accuracy according to external

statistics from 2013. Income quantile ratio simulated in EUROMOD accounts for 100% of external value from 2013.

### 4.2.2 Poverty rates

Validation of at risk of poverty rates calculated using EUROMOD is presentesd in Table 4.10. For 2013, the simulated number of individuals below 40% of the median household disposable income is 2% lower than the value in external statistics. On the other hand, the simulated proportion of individuals below 50% median household disposable income poverty line is 3% above the benchmark for 2013. At the same time simulated number of people with income below 60% median household disposable income is oversimulated by 6%, while simulated share of population living with income below 70% of the median HDI is 1% higher than proportion reported in external data.

Simulated share of people from different age groups living with income below 60% of the median HDI in income reference year 2013 is 102% precise for population aged 0-17, oversimulated by 9% for population aged 18-24 and oversimulated by 4% for population aged 25-49 years old. The share of the population living with income below 60% of the median HDI is undersimulated by 8% for population aged 50-64 years, while for population aged 65+ it's undersimulated by 3%.

## 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 baseline results deviations from minimum wage policy results are pertaining to the aggregated value of employment income. For years 2013-2016 gross employee incomes in baseline account for 99% of those simulated 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 modelled 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 modelled in EUROMOD.

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Zakład Ubezpieczeń Społecznych (2014b-2016b): Liczba tytułów ubezpieczenia oraz kwota przypisu składek na ubezpieczenie chorobowe według grup tytułów ubezpieczenia w *2013 r. (2014 r., 2015 r.).*

Zakład Ubezpieczeń Społecznych (2014c-2016c): *Liczba tytułów ubezpieczenia oraz kwota przypisu składek na ubezpieczenia emerytalne i rentowe według grup tytułów ubezpieczenia w okresie styczeń – grudzień 2013 r. (2014 r., 2015 r.).*

Zakład Ubezpieczeń Społecznych (2014d-2016d): *Liczba tytułów ubezpieczenia oraz kwota przypisu składek na ubezpieczenie wypadkowe według grup tytułów ubezpieczenia w 2013 r. (2014 r., 2015 r.)*

# 6. APPENDIX: POLICY EFFECTS IN 2015-2016

Table A1 and Figure A1 shows that as a result of tax-benefit changes between 2015-2016 the average equivalised HDI measured in real terms from 2016 increased by 5.1%. This change showed a progressive pattern with positive changes within all income decile groups. However, the first three income decile groups benefited the most, with average increase of equivalised HDI in the 1st decile by 36.0%, by 20.2% in the 2nd decile and 12.4% in the 3rd decile. The remaining income decile groups gained on average from 1.0% to 7.4% of equivalised HDI.

The biggest positive change of mean equivalised HDI is associated with means-tested benefits. On average this income component caused increases of equivalised HDI by 4.9%. The effect of means-tested benefits can be explained by changes in the Family Allowance that included increase of both income thresholds and benefit amounts. There were also increases of values of Family Allowance Supplements for Large Families, Education or Rehabilitation of Disabled Child and Supplement for Lone Parents. Increases of benefit values and raises of income eligibility thresholds included Housing Benefit, Permanent and Temporary Social Assistance as well. However the biggest change of disposable income in the group of means-tested benefits is attributed to implementation of Parental Allowance and especially to Childcare Allowance. It is assessed that due to those changes, households from 1st to 3rd income deciles groups gained respectively 35.4%, 19.7% and 11.9% of equivalised HDI. Average changes of equivalised HDI in households from 4th to 7th income decile groups accounted for 2.1%-6.9%, while the changes in income decile groups from 8th to 10th ranged between 0.9% to 1.8%.

The disposable income component which contributed the most to negative changes of mean equivalised HDI is associated with the increase of self-employed social security contributions. This income component caused average decrease of equivalised HDI by 0.1% with households from the 1st income decile that bore the biggest burden of self-employed SIC with average decrease of mean equivalised HDI by 0.5%.

Public pensions led to the average increase in mean equivalised HDI by 0.5%. In income deciles 1st to 6th public pensions increased equivalised HDI on average by 0.7%, in deciles 7th and 8th by 0.6% while in deciles 9th and 10th by 0.4% and 0.2% respectively.

Changes in HDI caused by non-means tested benefits are connected with annual indexation of Nursing Supplement and raise of Nursing Allowance values. Those changes influenced the incomes of households from 5th to 8th income deciles and resulted in average increases of equivalised HDI ranging by 0.1%.

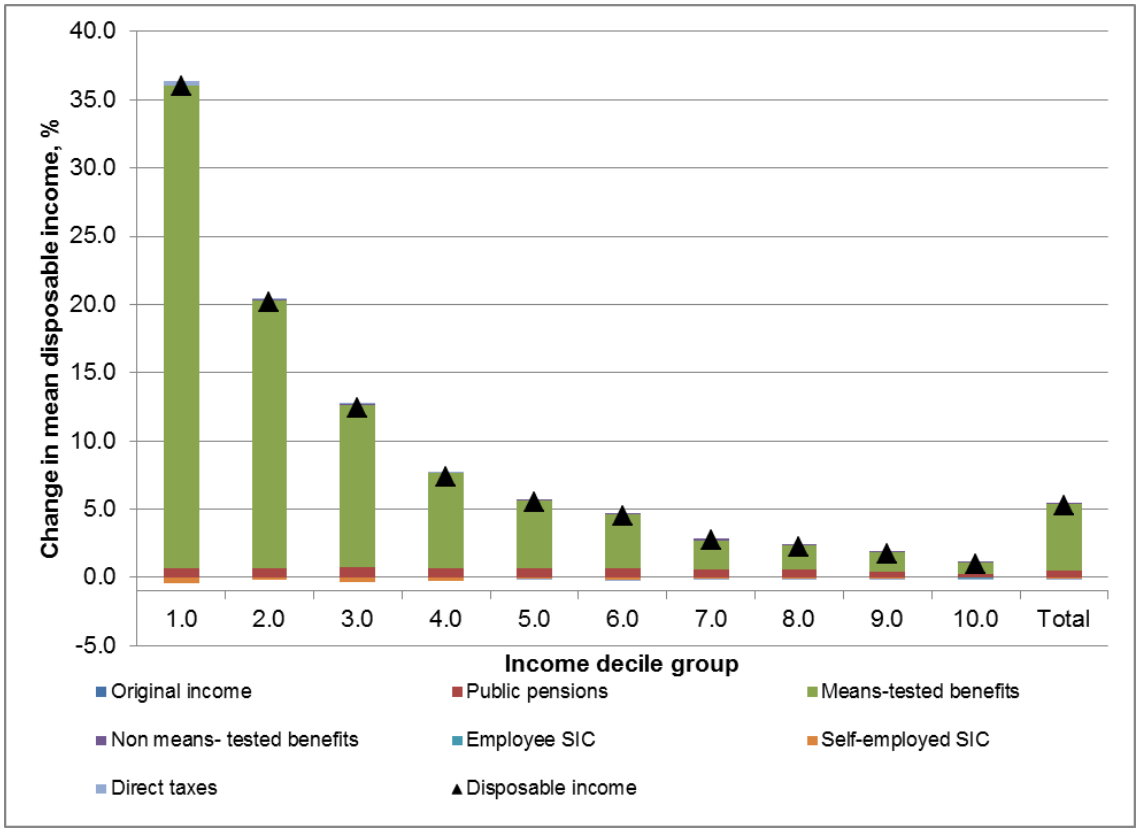
Another part of disposable income that contributed to changes in equivalised HDI is direct taxes. Although the overall effect of changes in direct taxes on mean equivalised HDI is close to 0.0%, the effects vary among particular income deciles. The positive change of 0.4% in 1st income decile is associated with the decrease of the factor used in agricultural tax assessment, while the negative changes of equivalised HDI in the middle and upper-end of the income distribution are connected with the effect of the fiscal drag with all nominal elements of the direct tax system unchanged between 2015 and 2016. However, these changes are small (about -0.1%).The negative effect of the Employee SIC is connected with annual indexation of income thresholds for old-age pension and disability insurance.

Table A1: Policy effects in 2015-2016, using the CPI-indexation, %

| Decile | Original income | Public pensions | Means-tested benefits | Non means-tested benefits | Employee SIC | Self-employed SIC | Direct taxes | Disposable income |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.0 | 0.7 | 35.4 | 0.0 | 0.0 | -0.5 | 0.3 | 36.0 |
| 2 | 0.0 | 0.7 | 19.7 | 0.0 | 0.0 | -0.2 | 0.0 | 20.2 |
| 3 | 0.0 | 0.7 | 11.9 | 0.0 | 0.0 | -0.3 | 0.0 | 12.4 |
| 4 | 0.0 | 0.7 | 6.9 | 0.0 | 0.0 | -0.3 | 0.0 | 7.4 |
| 5 | 0.0 | 0.7 | 4.9 | 0.1 | 0.0 | -0.1 | -0.1 | 5.5 |
| 6 | 0.0 | 0.7 | 3.9 | 0.1 | 0.0 | -0.2 | 0.0 | 4.5 |
| 7 | 0.0 | 0.6 | 2.1 | 0.1 | 0.0 | -0.1 | -0.1 | 2.7 |
| 8 | 0.0 | 0.6 | 1.8 | 0.1 | 0.0 | -0.1 | -0.1 | 2.2 |
| 9 | 0.0 | 0.4 | 1.4 | 0.0 | 0.0 | -0.1 | -0.1 | 1.7 |
| 10 | 0.0 | 0.2 | 0.9 | 0.0 | -0.1 | 0.0 | 0.0 | 1.0 |
| Total | **0.0** | **0.5** | **4.8** | **0.0** | **0.0** | **-0.1** | **0.0** | **5.3** |

Notes: shown as a percentage change in mean equivalised household disposable income by income component and income decile group. Income decile groups are based on equivalised household disposable income in 2014, using the modified OECD equivalence scale. Each policy system has been applied to the same input data, deflating monetary parameters of 2016 policies by Eurostat's Harmonized Index of Consumer Prices (HICP).

Figure A1: Policy effects in 2015-2016, using the CPI-indexation, %



# 7. APPENDIX: POLICY EFFECTS IN 2014-2015

Table A2 and Figure A2 shows that as a result of tax-benefit changes between 2014-2015 the average equivalised HDI measured in real values from 2014 increased by 0.6%. This change showed a generally progressive pattern, although the income group which benefited the most was the 2nd income decile with average increase of equivalised HDI by 1.1%.

The biggest positive change of mean equivalised HDI is associated with indexation of public pensions. On average this income component increased by 0.7% with the 1st income decile benefiting the most from average increase of public pensions by 1.1% and the 10th income decile indicating the lowest increase by 0.3%. The fact that the majority of pensioners are located in the lower income deciles determines the simulated pattern of income changes due to uprating of pensions with the average pension index. However, the actual effect of pension indexation in 2015 is not fully reflected in Figure 2. As shown by Myck et al. (2014) the effect was even more progressive due to the combination of proportional indexation with a lower bound on the minimum indexation amount of 36 PLN per month (gross) for retirement and 27 PLN per month for disability pensions. This policy, implemented in March 2015, implied that lowest retirement and disability pensions grew at an above average rate (see: Myck et al. 2014).

The disposable income component which contributed the most to negative changes of mean equivalised HDI is associated with the increase of self-employed social security contributions. This income component caused average decrease of equivalised HDI by 0.2% with households from the 1st income decile that bore the biggest burden of self-employed SIC with average decrease of mean equivalised HDI by 1.1%.

Non-means-tested benefits are another reason of the increase of equivalised HDI, on average by 0.1%. Those changes can be explained with annual indexation of Nursing Supplement and raise of Nursing Allowance values. They influenced the incomes of households from 2nd to 8th income deciles and resulted in average increases of equivalised HDI ranging from 0.1% to 0.3%.

The effect of means-tested benefits can be explained by changes in Family Allowance, Special Nursing Allowance and Housing Benefit. In 2015 income thresholds to Family Allowance and Special Nursing Allowance were raised. Changes in Housing Benefit included increase of benefit values and raise of income eligibility thresholds. The changes in means-tested benefits affected households from the first four income decile groups with average increase of equivalised HDI by 0.5% in 2nd income decile and by 0.1% to 0.2% in 1st, 3rd and 4th income decile.

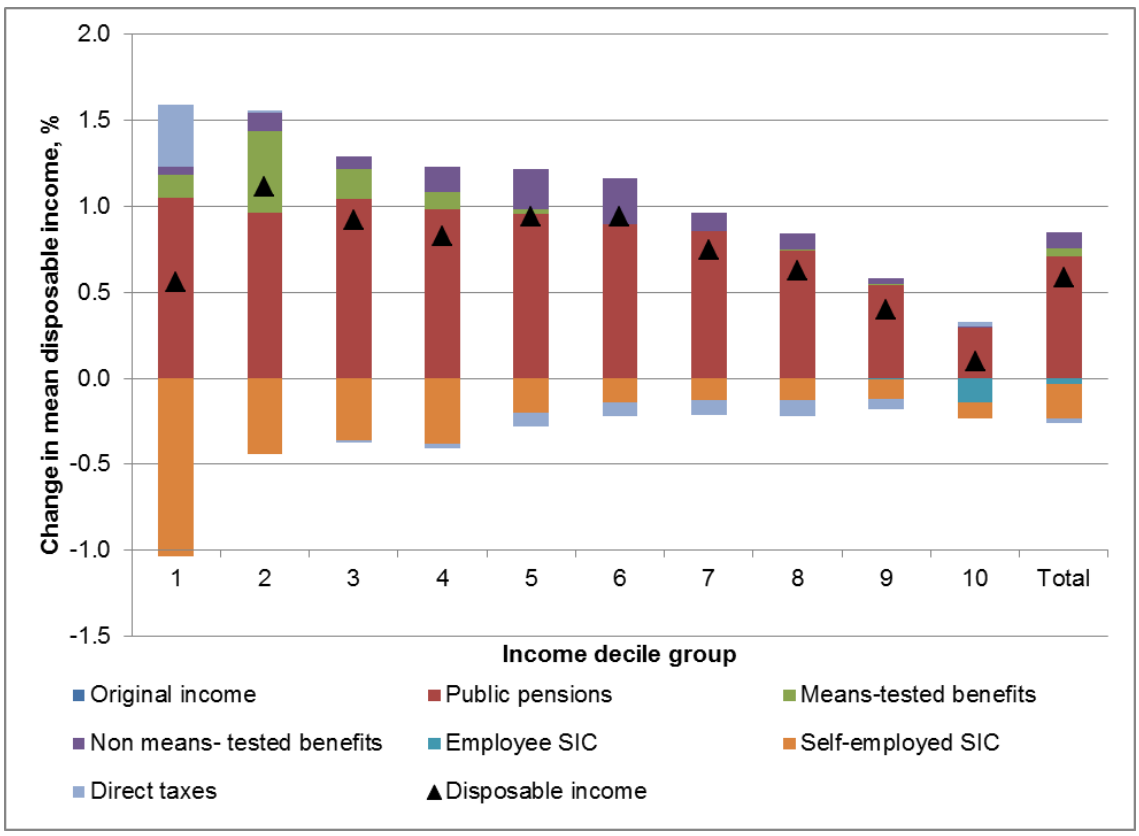
Another part of disposable income that contributed to changes in equivalised HDI is direct taxes. Although the overall effect of changes in direct taxes on mean equivalised HDI is 0.0%, the effects vary among particular income deciles. The positive change of 0.4% in 1st income decile is associated with the decrease of the factor used in agricultural tax assessment, while the negative changes of equivalised HDI in the middle and upper-end of the income distribution are connected with the effect of fiscal drag with all nominal elements of the direct tax system unchanged between 2014 and 2015. However, these change are small (about -0.1%).The negative effect of the Employee SIC is connected with annual indexation of income thresholds for old-age pension and disability insurance.

Table A2: Policy effects in 2014-2015, using the CPI-indexation, %

| Decile | Original income | Public pensions | Means-tested benefits | Non means-tested benefits | Employee SIC | Self-employed SIC | Direct taxes | Disposable income |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.0 | 1.1 | 0.1 | 0.0 | 0.0 | -1.0 | 0.4 | 0.6 |
| 2 | 0.0 | 1.0 | 0.5 | 0.1 | 0.0 | -0.4 | 0.0 | 1.1 |
| 3 | 0.0 | 1.0 | 0.2 | 0.1 | 0.0 | -0.4 | 0.0 | 0.9 |
| 4 | 0.0 | 1.0 | 0.1 | 0.2 | 0.0 | -0.4 | 0.0 | 0.8 |
| 5 | 0.0 | 1.0 | 0.0 | 0.2 | 0.0 | -0.2 | -0.1 | 0.9 |
| 6 | 0.0 | 0.9 | 0.0 | 0.3 | 0.0 | -0.1 | -0.1 | 0.9 |
| 7 | 0.0 | 0.9 | 0.0 | 0.1 | 0.0 | -0.1 | -0.1 | 0.8 |
| 8 | 0.0 | 0.7 | 0.0 | 0.1 | 0.0 | -0.1 | -0.1 | 0.6 |
| 9 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | -0.1 | -0.1 | 0.4 |
| 10 | 0.0 | 0.3 | 0.0 | 0.0 | -0.1 | -0.1 | 0.0 | 0.1 |
| Total | **0.0** | **0.7** | **0.0** | **0.1** | **0.0** | **-0.2** | **0.0** | **0.6** |

Notes: shown as a percentage change in mean equivalised household disposable income by income component and income decile group. Income decile groups are based on equivalised household disposable income in 2014, using the modified OECD equivalence scale. Each policy system has been applied to the same input data, deflating monetary parameters of 2015 policies by Eurostat's Harmonized Index of Consumer Prices (HICP).

Figure A2: Policy effects in 2014-2015, using the CPI-indexation, %



# 8. ANNEX 1: UPRATING FACTORS

Table 8.1 Raw indicies for deriving EUROMOD uprating factors

| Index | Income Source/index type | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| $f_h_cpi | Eurostat / Harmonized Indices of Consumer Prices (HICP) | 125.60 | 126.00 | 125.30 | 124.90 |
| $f_lab_cost | Central Statistical Office / Statistical Bulletin / Average monthly wages and salaries – grand total, IV-VI | 3612.51 | 3739.97 | 3854.88 | 4019.08 |
| $f_ret_pen | Central Statistical Office / Statistical Bulletin / Average monthly retirement pay and pension in PLN / from non-agricultural social security system / retirement pay | 2051.43 | 2133.61 | 2168.43 | 2200.69 |
| $f_dis_pen | Central Statistical Office / Statistical Bulletin / Average monthly retirement pay and pension in PLN / from non-agricultural social security system / disability pension | 1542.71 | 1590.09 | 1642.07 | 1665.67 |
| Sf_fam_pen | Central Statistical Office / Statistical Bulletin / Average | 1780.44 | 1825.11 | 1881.38 | 1908.72 |

| | | | | | |
|---|---|---|---|---|---|
| $f_gdp | monthly retirement pay and pension in PLN / from non-agricultural social security system / family pension Central Statistical Office / National accounts / The CSO information on quarterly GDP estimate / Gross Domestic Product | 1,634,404.60 | 1,690,805.30 | 1,745,531.40 | 1,818,091.70 |

Table 8.2 Uprate factors

| Variable | Variable label | Update factor | Factor reference name |
|---|---|---|---|
| afc | assets: financial capital | Growth of HICP | $f_h_cpi |
| aoc | assets : other capital | Growth of HICP | $f_h_cpi |
| bch | benefit : child | Growth of HICP | $f_h_cpi |
| bch00 | benefit : child : main/basic | Growth of HICP | $f_h_cpi |
| bchba | benefit : child : birth/adoption | Growth of HICP | $f_h_cpi |
| bchdied | benefit : child : disability : education | Growth of HICP | $f_h_cpi |
| bched | benefit : child : education | Growth of HICP | $f_h_cpi |
| bchlg | benefit : child : large family | Growth of HICP | $f_h_cpi |
| bchlp | benefit : child : lone parent | Growth of HICP | $f_h_cpi |
| bchlp00 | benefit : child : lone parent : main/basic | Growth of HICP | $f_h_cpi |
| bchot | benefit : child : other | Growth of HICP | $f_h_cpi |
| bcc | benefit : child care | Growth of HICP | $f_h_cpi |
| bchuc | benefit : child : unconditional/universal | Growth of HICP | $f_h_cpi |
| bchunlp | benefit : child : unemployment : lone parent | Growth of HICP | $f_h_cpi |
| bcrdi | benefit : caring : disability | Growth of HICP | $f_h_cpi |
| bdinc | benefit : disability : non-contributory | Growth of HICP | $f_h_cpi |
| bed | benefit : education | Growth of HICP | $f_h_cpi |
| bfa | benefit : family | Growth of HICP | $f_h_cpi |
| bfaam | benefit : family : unpaid alimony | Growth of HICP | $f_h_cpi |
| bfaot | benefit : family : other | Growth of HICP | $f_h_cpi |
| bhl | benefit : health | Growth of HICP | $f_h_cpi |
| bho | benefit : housing | Growth of HICP | $f_h_cpi |
| bma | benefit : maternity | Growth of HICP | $f_h_cpi |
| bot | benefit : other | Growth of HICP | $f_h_cpi |
| bsa | benefit : social assistance | Growth of HICP | $f_h_cpi |
| bsaot | benefit : social assistance : other | Growth of HICP | $f_h_cpi |
| bsapm | benefit : social assistance : permanent | Growth of HICP | $f_h_cpi |
| bsapmot | benefit : social assistance : permanent : other | Growth of HICP | $f_h_cpi |
| bsatm | benefit : social assistance : temporary | Growth of HICP | $f_h_cpi |
| bun | benefit : unemployment | Growth of HICP | $f_h_cpi |
| byr | benefit : early retirement | Growth of average retirement | $f_ret_pen |

| | | | |
|---|---|---|---|
| | | pensions | |
| kfb | in kind : fringe benefit | Growth of HICP | $f_h_cpi |
| kfbcc | in kind : fringe benefit : company car | Growth of HICP | $f_h_cpi |
| kivho | in kind : imputed value : housing | Growth of HICP | $f_h_cpi |
| pdi | pension : disability | Growth of average disability pensions | $f_dis_pen |
| pdi00 | pension : disability : main/basic | Growth of average disability pensions | $f_dis_pen |
| pdinw | pension : disability : not working | Growth of average disability pensions | $f_dis_pen |
| pdiuc | pension : disability : unconditional/universal | Growth of average disability pensions | $f_dis_pen |
| poa | pension : old age | Growth of average retirement pensions | $f_ret_pen |
| poa00 | pension : old age : main/basic | Growth of average retirement pensions | $f_ret_pen |
| poaab | pension : old age : abroad | Growth of average retirement pensions | $f_h_cpi |
| poacm | pension : old age : complement | Growth of average retirement pensions | $f_ret_pen |
| poacmdi | pension : old age : complement : disability | Growth of average retirement pensions | $f_ret_pen |
| poacmoa | pension : old age : complement : old age | Growth of average retirement pensions | $f_ret_pen |
| poacmsu | pension : old age : complement : survivors | Growth of average retirement pensions | $f_ret_pen |
| poafr | pension : old age : farmer | Growth of | $f_ret_pen |

| | | | |
|---|---|---|---|
| | | average retirement pensions | |
| poaot | pension : old age : other | Growth of average retirement pensions | $f_ret_pen |
| psu | pension : survivors | Growth of average survivors pensions | $f_fam_pen |
| psu00 | pension : survivors : main/basic | Growth of average survivors pensions | $f_fam_pen |
| psuor | pension : survivors : orphan | Growth of average survivors pensions | $f_fam_pen |
| psuot | pension : survivors : other | Growth of average survivors pensions | $f_fam_pen |
| psuwd | pension : survivors : widow | Growth of average survivors pensions | $f_fam_pen |
| pyr | pension : early retirement | Growth of retirement penisons | $f_ret_pen |
| tad | tax : repayments/receipts | Growth of HICP | $f_h_cpi |
| tin | tax : income tax | Growth of HICP | $f_h_cpi |
| tis | tax : income tax and sics | Growth of HICP | $f_h_cpi |
| tpr | tax : property tax | Growth of HICP | $f_h_cpi |
| tscee | tax : sic : employee | Growth of HICP | $f_h_cpi |
| tscer | tax : sic : employer | Growth of HICP | $f_h_cpi |
| tscse | tax : sic : self-employed | Growth of HICP | $f_h_cpi |
| xcc | expenditure : child care | Growth of HICP | $f_h_cpi |
| xcd | expenditure : charitable donations | Growth of HICP | $f_h_cpi |
| xcmie | expenditure : communication : internet | Growth of HICP | $f_h_cpi |
| xhc | expenditure : housing cost | Growth of HICP | $f_h_cpi |
| xhc00 | expenditure : housing cost : main/basic | Growth of HICP | $f_h_cpi |
| xhchm | expenditure : housing cost : house maintenance | Growth of HICP | $f_h_cpi |
| xhcmo | expenditure : housing cost : mortgage payment (interest+capital) | Growth of HICP | $f_h_cpi |
| xhcmomc | expenditure : housing cost : mortgage payment (interest+capital) : mortgage capital | Growth of HICP | $f_h_cpi |
| xhcmomi | expenditure : housing cost : mortgage payment (interest+capital) : mortgage interest | Growth of HICP | $f_h_cpi |
| xhcot | expenditure : housing cost : other | Growth of HICP | $f_h_cpi |
| xhcrt | expenditure : housing cost : rent | Growth of HICP | $f_h_cpi |
| xhcsc | expenditure : housing cost : service charges | Growth of HICP | $f_h_cpi |

| | | | |
|---|---|---|---|
| | expenditure : housing cost : service | Growth of HICP | |
| xhcscel | charges : electricity | | $f_h_cpi |
| | expenditure : housing cost : service | Growth of HICP | |
| xhcscht | charges : heating | | $f_h_cpi |
| | expenditure : housing cost : service | Growth of HICP | |
| xhcscrf | charges : refuse | | $f_h_cpi |
| | expenditure : housing cost : service | Growth of HICP | |
| xhcscwt | charges : water | | $f_h_cpi |
| xishl | expenditure : insurance : health care | Growth of HICP | $f_h_cpi |
| | expenditure : imputed value : housing | Growth of HICP | |
| xivhcrt | cost : rent | | $f_h_cpi |
| xmp | expenditure : maintenance payment | Growth of HICP | $f_h_cpi |
| xpp | expenditure : private pension (voluntary) | Growth of average salary | $f_lab_cost |
| yds | income : disposable | Growth of HICP | $f_h_cpi |
| | income : equivalized disposable income: | Growth of HICP | |
| ydses_o | original SILC | | $f_h_cpi |
| yem | income : employment | Growth of average salary | $f_lab_cost |
| yempj | income : employment : permanent job | Growth of average salary | $f_lab_cost |
| yemtj | income : employment : temporary job | Growth of average salary | $f_lab_cost |
| yivwg | income : imputed value : wage/salary | Growth of average salary | $f_lab_cost |
| yiy | income : investment | Growth of GDP | $f_gdp |
| yot | income : other | Growth of HICP | $f_h_cpi |
| ypp | income : private pension | Growth of retirement penisons | $f_ret_pen |
| ypr | income : property | Growth of GDP | $f_gdp |
| yprrt | income : property : rent | Growth of HICP | $f_h_cpi |
| ypt | income : private transfers | Growth of HICP | $f_h_cpi |
| ypt00 | income : private transfers : main/basic | Growth of HICP | $f_h_cpi |
| yptmp | income : private transfers : maintenance payment | Growth of HICP | $f_h_cpi |
| yseag | income : self-employment : agriculture | Growth of HICP | $f_h_cpi |
| ysebs | income : self-employment : business | Growth of GDP | $f_gdp |
| ysv | income : severance pay | Growth of average salary | $f_lab_cost |

# 9. ANNEX 2: VALIDATION TABLES

Table 4.2 Number of employed & unemployed (in thousands)

| | EUROMOD Simulation | | | | External Statistics | | | | Ratio | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2013** | **2014** | **2015** | **2016** | **2013** | **2014** | **2015** | **2016** | **2013** | **2014** | **2015** | **2016** |
| Employed (n) | 14,679 | 14,679 | 14,679 | 14,679 | 15,313 | 15,591 | 15,812 | n/a | 96% | 94% | 93% | n/a |
| Unemployed (n) | 2,215 | 2,215 | 2,215 | 2,215 | 1,793 | 1,567 | 1,304 | n/a | 124% | 141% | 170% | n/a |

Table 4.3 Market Income-Number of recipients (in thousands)

| | EUROMOD Simulation | | | | External Statistics | | | | Ratio | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2013** | **2014** | **2015** | **2016** | **2013** | **2014** | **2015** | **2016** | **2013** | **2014** | **2015** | **2016** |
| **Original income** | | | | | | | | | | | | |
| Employment | 14,373 | 14,373 | 14,373 | 14,373 | 14,244 | 14,402 | 14,803 | n/a | 101% | 100% | 97% | n/a |
| Self-employment | 3,255 | 3,255 | 3,255 | 3,255 | 3,785 | 3,790 | 3,885 | n/a | 86% | 86% | 84% | n/a |
| Investment | 735 | 735 | 735 | 735 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Property | 517 | 517 | 517 | 517 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Private pension | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Private transfers | 914 | 914 | 914 | 914 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Other | 517 | 517 | 517 | 517 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Severance payments | 7 | 7 | 7 | 7 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Paid private transfers | 803 | 803 | 803 | 803 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **In-kind income** | | | | | | | | | | | | |
| Fringe benefits | 4,337 | 4,337 | 4,337 | 4,337 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Imputed housing | 20,446 | 20,446 | 20,446 | 20,446 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

Table 4.4 Market Income-Aggregate amounts (in millions of PLN)

| | EUROMOD Simulation | | | | External Statistics | | | | Ratio | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2013 | 2014 | 2015 | 2016 | 2013 | 2014 | 2015 | 2016 | 2013 | 2014 | 2015 | 2016 | |
| **Original income** | | | | | | | | | | | | | |
| Employment | 515,883 | 534,085 | 550,494 | 573,943 | 491,202 | 512,608 | n/a | n/a | n/a | 105% | 104% | | n/a | n/a |
| Self-employment | 86,155 | 88,509 | 90,622 | 93,507 | 68,133 | 71,269 | n/a | n/a | n/a | 126% | 124% | | n/a | n/a |
| Investment | 4,302 | 4,451 | 4,595 | 4,786 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Property | 3,466 | 3,585 | 3,701 | 3,855 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Private pension | 53 | 55 | 56 | 57 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Private transfers | 6,927 | 6,949 | 6,910 | 6,888 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Other | 889 | 892 | 887 | 884 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Severance payments | 52 | 54 | 56 | 58 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Paid private transfers | 5,689 | 5,707 | 5,676 | 5,658 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **In-kind income** | | | | | | | | | | | | | |
| Fringe benefits | 4,918 | 4,933 | 4,906 | 4,890 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Imputed housing | 105,587 | 105,923 | 105,335 | 104,999 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

Table 4.5 Non-simulated taxes and benefits – Number of recipients/payers, thousands

| | EUROMOD Simulation | | | | External Statistics | | | | Ratio | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2013 | 2014 | 2015 | 2016 | 2013 | 2014 | 2015 | | 2013 | 2014 | 2015 | |
| **Pensions** | | | | | | | | | | | | |
| **Disability** | | | | | | | | | | | | |
| Disability pension | 1,298 | 1,298 | 1,298 | 1,298 | 1,326 | 1,284 | 1,232 | n/a | 98% | 101% | 105% | n/a |
| social pension | 214 | 214 | 214 | 214 | 265 | 269 | 272 | n/a | 81% | 80% | 79% | n/a |
| **Old age** | | | | | | | | | | | | |
| old age pension | 7,103 | 7,103 | 7,103 | 7,103 | 6,230 | 6,188 | 6,253 | n/a | 114% | 115% | 114% | n/a |
| farmer's structural pension | 82 | 82 | 82 | 82 | 69 | 68 | n/a | n/a | 118% | 121% | n/a | n/a |
| ret. severance payment | 24 | 24 | 24 | 24 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **Survivors** | | | | | | | | | | | | |
| Survivors pension | 982 | 982 | 982 | 982 | 1,397 | 1,398 | 1,394 | n/a | 70% | 70% | 70% | n/a |
| other survivor benefits | 13 | 13 | 13 | 13 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **Nursing supplement by pension type:** | | | | | | | | | | | | |
| disability | 4 | 4 | 4 | 4 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| old-age | 2,177 | 2,177 | 2,177 | 2,177 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| survivors | 8 | 8 | 8 | 8 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **Pre-retirement benefit** | 170 | 170 | 170 | 170 | 175 | 168 | 168 | n/a | 97% | 102% | 101% | n/a |
| **Sickness** | 197 | 197 | 197 | 197 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **Maternity benefit** | 142 | 142 | 142 | 142 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **Childcare leave suplement to family allowance** | 61 | 61 | 61 | 61 | 69 | 46 | 42 | n/a | 88% | 132% | 145% | n/a |
| **Special Circumstances social assistance** | 206 | 206 | 206 | 206 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **Not simulated taxes** | | | | | | | | | | | | |
| Property tax | 11,337 | 11,337 | 11,337 | 11,337 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

Table 4.6 Non-simulated taxes and benefits – Aggregate amounts, annual amounts (in milions of PLN)

| | EUROMOD Simulation | | | | External Statistics | | | | Ratio | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2013 | 2014 | 2015 | 2016 | 2013 | 2014 | 2015 | 2016 | 2013 | 2014 | 2015 | |
| **Pensions** | | | | | | | | | | | | |
| **Disability** | | | | | | | | | | | | |
| Disability pension | 16,121 | 16,616 | 17,159 | 17,406 | 22,879 | 22,836 | n/a | n/a | 70% | 73% | n/a | n/a |
| social pension | 1,753 | 1,807 | 1,866 | 1,893 | 2,200 | 2,267 | n/a | n/a | 80% | 80% | n/a | n/a |
| **Old age** | | | | | | | | | | | n/a | n/a |
| old age pension | 154,641 | 160,835 | 163,460 | 165,892 | 142,125 | 146,484 | n/a | n/a | 109% | 110% | n/a | n/a |
| farmer's structural pension | 1,558 | 1,621 | 1,647 | 1,672 | 1,566 | 1,539 | n/a | n/a | 99% | 105% | n/a | n/a |
| ret. severance payment | 152 | 158 | 161 | 163 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **Survivors** | | | | | | | | | | | | |
| Survivors pension | 18,238 | 18,695 | 19,272 | 19,552 | 29,425 | 30,318 | n/a | n/a | 62% | 62% | n/a | n/a |
| other survivor benefits | 52 | 53 | 55 | 56 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **Nursing supplement by pension type:** | 1,,293 | 1,282 | 1,303 | 1,322 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| disability | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| old-age | 1,288 | 1,277 | 1,298 | 1,317 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| survivors | 3 | 3 | 3 | 3 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **Pre-retirement benefit** | 1,904 | 1,980 | 2,013 | 2,042 | 2,106 | 2,370 | n/a | n/a | 90% | 84% | n/a | n/a |
| **Sickness** | 771 | 773 | 769 | 766 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **Maternity benefit** | 1,324 | 1,328 | 1,321 | 1,316 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **Childcare leave suplement to family allowance** | 302 | 302 | 301 | 300 | 317 | 213 | 196 | n/a | 95% | 142% | 154% | n/a |
| **Special Circumstances social assistance** | 146 | 147 | 146 | 146 | 764 | 752 | n/a | n/a | 19% | 20% | n/a | n/a |
| **Not simulated taxes** | | | | | | | | | | | | |
| Property tax | 2,824 | 2,833 | 2,817 | 2,808 | 13,342 | 13,954 | 12,299 | n/a | 21% | 20% | 23% | n/a |

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

| | EUROMOD Simulation | | | | External Statistics | | | | Ratio | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2013 | 2014 | 2015 | 2016 | 2013 | 2014 | 2015 | 2016 | 2013 | 2014 | 2015 | 2016 |
| **Family and Children** | | | | | | | | | | | | |
| Family allowance | 1,027 | 984 | 1,031 | 1,393 | 1,202 | 1,114 | 1,047 | n/a | 85% | 88% | 98% | n/a |
| supp child birth | 86 | 81 | 86 | 114 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| supp education of disabled child | 96 | 96 | 98 | 117 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| supp starting school year | 742 | 714 | 741 | 1,011 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| supp large families | 232 | 225 | 231 | 302 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| supp lone parent | 32 | 32 | 32 | 39 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| child birth allowance | 273 | 272 | 268 | 268 | 273 | 279 | n/a | n/a | 100% | 97% | n/a | n/a |
| nursing benefit | 434 | 434 | 434 | 434 | 927 | 927 | 921 | n/a | 47% | 47% | 47% | n/a |
| nursing allowance | 177 | 177 | 177 | 177 | 164 | 106 | 112 | n/a | 108% | 167% | 158% | n/a |
| special nursing allowance | 14 | 13 | 14 | 15 | 6 | 13 | 27 | n/a | 230% | 103% | 53% | n/a |
| **Unemployment** | 499 | 499 | 499 | 499 | 333 | 262 | 232 | n/a | 150% | 191% | 216% | n/a |
| **Housing benefit** | 243 | 239 | 239 | 232 | 338 | 329 | n/a | n/a | 72% | 73% | n/a | n/a |
| **Social assistance** | | | | | | | | | | | | |
| soc assist permanent | 173 | 166 | 159 | 199 | 170 | 176 | 176 | n/a | 102% | 94% | 90% | n/a |
| soc assist temporary | 250 | 247 | 228 | 260 | 251 | 246 | 228 | n/a | 100% | 100% | 100% | n/a |
| **Taxes and SIC** | | | | | | | | | | | | |
| **Employee contributions** | 14,373 | 14,373 | 14,373 | 14,373 | 10,248 | 10,405 | 10,661 | n/a | 140% | 138% | 135% | n/a |
| for retirement and disability | 14,373 | 14,373 | 14,373 | 14,373 | 10,248 | 10,405 | 10,405 | n/a | 140% | 138% | 135% | n/a |
| for sickness | 14,373 | 14,373 | 14,373 | 14,373 | 10,248 | 10,405 | 10,405 | n/a | 140% | 138% | 135% | n/a |
| **Employer contributions** | 14,373 | 14,373 | 14,373 | 14,373 | 10,248 | 10,405 | 10,405 | n/a | 140% | 138% | 135% | n/a |
| for retirement and disability | 14,373 | 14,373 | 14,373 | 14,373 | 10,248 | 10,405 | 10,405 | n/a | 140% | 138% | 135% | n/a |
| for accident | 14,373 | 14,373 | 14,373 | 14,373 | 10,248 | 10,405 | 10,405 | n/a | 140% | 138% | 135% | n/a |
| for labour fund | 14,373 | 14,373 | 14,373 | 14,373 | 10,248 | 10,405 | 10,405 | n/a | 140% | 138% | 135% | n/a |
| for employer insolvency | 14,373 | 14,373 | 14,373 | 14,373 | 10,248 | 10,405 | 10,405 | n/a | 140% | 138% | 135% | n/a |
| **Self-employed contributions** | 1,733 | 1,742 | 1,742 | 1,748 | 1,299 | 1,368 | 1,394 | n/a | 133% | 127% | 125% | n/a |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| for retirement and disability | 1,733 | 1,742 | 1,742 | 1,748 | 1,299 | 1,368 | 1,394 | n/a | 133% | 127% | 125% | n/a |
| for sickness | 1,733 | 1,742 | 1,742 | 1,748 | 1,087 | 1,129 | 1,132 | n/a | 159% | 154% | 154% | n/a |
| for labour fund | 1,733 | 1,742 | 1,742 | 1,748 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| for accident | 1,733 | 1,742 | 1,742 | 1,748 | 1,299 | 1,368 | 1,394 | n/a | 133% | 127% | 125% | n/a |
| **Other contributions** | | | | | | | | | | | | |
| farmer contributions | 1,903 | 1,903 | 1,903 | 1,903 | 1,478 | 1,448 | 1,393 | n/a | 129% | 131% | 137% | n/a |
| **Taxes** | | | | | | | | | | | | |
| Total Income tax | 22,071 | 22,172 | 22,237 | 22,320 | 23,116 | 22,976 | 23,226 | n/a | 95% | 97% | 96% | n/a |
| capital income tax | 735 | 735 | 735 | 735 | 323 | 323 | 294 | n/a | 228% | 227% | 250% | n/a |
| Health insurance | 22,491 | 22,517 | 22,519 | 22,539 | 21,120 | 21,188 | 21,483 | n/a | 106% | 106% | 105% | n/a |
| Agricultural tax | 1,212 | 1,212 | 1,212 | 1,212 | 1,391 | n/a | 1,378 | n/a | 87% | n/a | 88% | n/a |

Table 4.7* Simulated family benefits – Number of children

| | EUROMOD Simulation | | | | External Statistics | | | | Ratio | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2013 | 2014 | 2015 | 2016 | 2013 | 2014 | 2015 | 2016 | 2013 | 2014 | 2015 | |
| **Family and Children** | | | | | | | | | | | | |
| supp child birth | 82 | 78 | 84 | n/a | 133 | 116 | 118 | n/a | 62% | 67% | 71% | n/a |
| supp education of disabled child | 105 | 105 | 109 | n/a | 145 | 138 | 132 | n/a | 72% | 76% | 82% | n/a |
| supp starting school year | 1,173 | 1,142 | 1,182 | n/a | 1,724 | 1,619 | 1,525 | n/a | 68% | 70% | 77% | n/a |
| supp large families | 329 | 320 | 326 | n/a | 383 | 354 | 335 | n/a | 86% | 90% | 97% | n/a |
| supp lone parent | 54 | 54 | 55 | n/a | 112 | 103 | 97 | n/a | 48% | 52% | 57% | n/a |

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

| | EUROMOD Simulation | | | | External Statistics | | | | Ratio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2013 | 2014 | 2015 | 2016 | 2013 | 2014 | 2015 | 2016 | 2013 | 2014 | 2015 |
| **Simulated benefits** | | | | | | | | | | | |
| **Family and Children** | | | | | | | | | | | |
| Family allowance | 2,297 | 2,210 | 2,298 | 3,318 | 2,783 | 2,576 | 2,477 | | 83% | 86% | 93% |
| supp child birth | 86 | 81 | 88 | 109 | 133 | 116 | 118 | | 65% | 70% | 75% |
| supp education of disabled child | 99 | 99 | 103 | 165 | 133 | 126 | 127 | | 74% | 78% | 81% |
| supp starting school year | 124 | 119 | 124 | 160 | 172 | 162 | 153 | | 72% | 74% | 81% |
| supp large families | 331 | 321 | 327 | 449 | 368 | 340 | 327 | | 90% | 94% | 100% |
| supp lone parent | 98 | 97 | 99 | 117 | 234 | 216 | 206 | | 42% | 45% | 48% |
| child birth allowance | 273 | 272 | 268 | 268 | 277 | 279 | 279 | | 99% | 98% | 96% |
| nursing benefit | 830 | 830 | 830 | 830 | 1,703 | 1,702 | 1,690 | | 49% | 49% | 49% |
| nursing allowance | 1,738 | 2,120 | 2,544 | 2,755 | 1,310 | 1,178 | 1,595 | | 133% | 180% | 159% |
| special nursing allowance | 85 | 82 | 88 | 92 | 36 | 78 | 163 | | 238% | 105% | 54% |
| **Unemployment** | 1,832 | 1,849 | 1,849 | 1,849 | 2,875 | 2,328 | n/a | | 64% | 79% | n/a |
| **Housing benefit** | 873 | 850 | 832 | 788 | 982 | 971 | n/a | | 89% | 88% | n/a |
| **Social assistance** | | | | | | | | | | | |
| soc assist permanent | 776 | 759 | 749 | 933 | 863 | 898 | 940 | | 90% | 85% | 80% |
| soc assist temporary | 859 | 830 | 773 | 1,013 | 727 | 961 | 909 | | 118% | 86% | 85% |
| | | | | | | | | | | | |
| **Taxes and SIC** | | | | | | | | | | | |
| **Employee contributions** | 69,079 | 71,420 | 73,711 | 76,779 | 53,166 | 53,972 | 78,523 | | 130% | 132% | 94% |
| for retirement and disability | 56,440 | 58,335 | 60,224 | 62,718 | 43,279 | 43,772 | 67,794 | | 130% | 133% | 89% |
| for sickness | 12,639 | 13,085 | 13,487 | 14,062 | 9,887 | 10,201 | 10,729 | | 128% | 128% | 126% |
| **Employer contributions** | 104,614 | 108,165 | 110,912 | 115,534 | 77,940 | 78,914 | 84,256 | | 134% | 137% | 132% |
| for retirement and disability | 81,502 | 84,239 | 86,966 | 90,568 | 62,497 | 63,208 | 67,794 | | 130% | 133% | 128% |
| for accident | 894 | 907 | 894 | 919 | 5,556 | 5,505 | 5,733 | | 179% | 187% | 173% |
| for labour fund | 1,135 | 1,151 | 1,216 | 1,251 | 9,887 | 10,201 | 10,729 | | 128% | 128% | 126% |
| for employer insolvency | 516 | 534 | 550 | 574 | n/a | n/a | n/a | | n/a | n/a | n/a |
| **Self-employed** | 15,917 | 16,136 | 16,989 | 17,466 | n/a | n/a | n/a | | n/a | n/a | n/a |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **contributions** | | | | | | | | | | |
| for retirement and disability | 12,752 | 12,928 | 13,663 | 14,046 | 8,307 | 8,676 | 9,328 | 154% | 149% | 146% |
| for sickness | 1,135 | 1,151 | 1,216 | 1,251 | 559 | 522 | 522 | 203% | 220% | 233% |
| for labour fund | 1,135 | 1,151 | 1,216 | 1,251 | n/a | n/a | n/a | n/a | n/a | n/a |
| for accident | 894 | 907 | 894 | 919 | 573 | 599 | 615 | 156% | 151% | 145% |
| **Other contributions** | | | | | | | | | | |
| farmer contributions | 2,942 | 2,966 | 3,062 | 3,062 | 2,310 | 2,227 | 2,227 | 127% | 133% | 137% |
| **Taxes** | | | | | | | | | | |
| Total Income tax | 52,191 | 55,035 | 57,276 | 60,356 | 53,188 | 55,567 | 59,028 | 98% | 99% | 97% |
| capital income tax | 817 | 846 | 873 | 909 | 868 | 870 | 1,012 | 94% | 97% | 86% |
| Health insurance | 59,296 | 61,488 | 63,164 | 65,357 | 60,200 | 61,204 | 63,938 | 98% | 100% | 99% |
| Agricultural tax | 2,740 | 2,502 | 2,217 | 1,942 | 2,285 | 2,090 | 1,859 | 120% | 120% | 119% |

Table 4.9 Income distribution

| | EUROMOD Simulation | | | | External Statistics | | | | Ratio | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Description** | **2013** | **2014** | **2015** | **2016** | **2013** | **2014** | **2015** | **2016** | **2013** | **2014** | **2015** | **2016** |
| **Decile shares, %** | | | | | | | | | | | | |
| **1** | 3.0% | 3.0% | 3.0% | 3.4% | 3.0% | 3.0% | n/a | n/a | 100% | 100% | n/a | n/a |
| **2** | 4.9% | 4.9% | 4.8% | 5.4% | 4.9% | 4.9% | n/a | n/a | 100% | 100% | n/a | n/a |
| **3** | 6.1% | 6.1% | 6.1% | 6.4% | 6.1% | 6.1% | n/a | n/a | 100% | 100% | n/a | n/a |
| **4** | 7.1% | 7.1% | 7.1% | 7.3% | 7.1% | 7.1% | n/a | n/a | 100% | 100% | n/a | n/a |
| **5** | 8.1% | 8.2% | 8.1% | 8.3% | 8.1% | 8.2% | n/a | n/a | 100% | 100% | n/a | n/a |
| **6** | 9.3% | 9.3% | 9.3% | 9.3% | 9.2% | 9.3% | n/a | n/a | 101% | 100% | n/a | n/a |
| **7** | 11.0% | 11.0% | 11.0% | 10.0% | 10.5% | 10.5% | n/a | n/a | 105% | 105% | n/a | n/a |
| **8** | 12.0% | 12.0% | 12.0% | 12.0% | 12.2% | 12.2% | n/a | n/a | 98% | 98% | n/a | n/a |
| **9** | 15.0% | 15.0% | 15.0% | 15.0% | 14.9% | 14.9% | n/a | n/a | 101% | 101% | n/a | n/a |
| **10** | 24.0% | 24.0% | 24.0% | 23.0% | 24.0% | 23.9% | n/a | n/a | 100% | 100% | n/a | n/a |
| **Median income (equivalised)** | 21,967 | 22,799 | 23,335 | 25,264 | 22,399 | 23,247 | n/a | n/a | 98% | 98% | n/a | n/a |
| **Mean income (equivalised)** | 25,243 | 26,096 | 26,761 | 28,905 | 25,871 | 26,679 | n/a | n/a | 98% | 98% | n/a | n/a |
| **Gini Coefficient** | 30.00 | 30.00 | 30.00 | 28.00 | 30.80 | 30.60 | n/a | n/a | 97% | 98% | n/a | n/a |
| **Income quintile ratio (S80/S20)** | 4.90 | 4.90 | 4.90 | 4.30 | 4.90 | 4.90 | n/a | n/a | 100% | 100% | n/a | n/a |

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

| | EUROMOD Simulation | | | | External Statistics | | | | Ratio | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Description** | **2013** | **2014** | **2015** | **2016** | **2013** | **2014** | **2015** | **2016** | **2013** | **2014** | **2015** | **2016** |
| **40% median HDI** | | | | | | | | | | | | |
| Total | 5.70 | 5.90 | 6.00 | 4.00 | 5.80 | 6.30 | n/a | n/a | 98% | 94% | n/a | n/a |
| Males | 6.10 | 6.30 | 6.40 | 4.40 | 6.20 | 6.90 | n/a | n/a | 98% | 91% | n/a | n/a |
| Females | 5.30 | 5.50 | 5.60 | 3.60 | 5.50 | 5.70 | n/a | n/a | 96% | 96% | n/a | n/a |
| **50% median HDI** | | | | | | | | | | | | |
| Total | 11.00 | 11.00 | 11.00 | 8.20 | 10.70 | 10.70 | n/a | n/a | 103% | 103% | n/a | n/a |
| Males | 11.00 | 12.00 | 12.00 | 8.50 | 11.00 | 11.40 | n/a | n/a | 100% | 105% | n/a | n/a |
| Females | 10.00 | 11.00 | 11.00 | 8.00 | 10.40 | 10.00 | n/a | n/a | 96% | 110% | n/a | n/a |
| **60% median HDI** | | | | | | | | | | | | |
| Total | 18.00 | 18.00 | 18.00 | 14.00 | 17.00 | 17.60 | n/a | n/a | 106% | 102% | n/a | n/a |
| Males | 18.00 | 18.00 | 18.00 | 14.00 | 17.20 | 18.10 | n/a | n/a | 105% | 99% | n/a | n/a |
| Females | 17.00 | 18.00 | 18.00 | 14.00 | 16.80 | 17.20 | n/a | n/a | 101% | 105% | n/a | n/a |
| **70% median HDI** | | | | | | | | | | | | |
| Total | 25.00 | 25.00 | 25.00 | 22.00 | 24.80 | 24.80 | n/a | n/a | 101% | 101% | n/a | n/a |
| Males | 25.00 | 25.00 | 25.00 | 21.00 | 24.90 | 25.10 | n/a | n/a | 100% | 100% | n/a | n/a |
| Females | 25.00 | 25.00 | 25.00 | 22.00 | 24.70 | 24.60 | n/a | n/a | 101% | 102% | n/a | n/a |
| **60% median HDI** | | | | | | | | | | | | |
| 0-17 years | 22.00 | 23.00 | 22.00 | 8.30 | 21.60 | 21.60 | n/a | n/a | 102% | 106% | n/a | n/a |
| 18-24 years | 25.00 | 25.00 | 25.00 | 21.00 | 23.00 | 23.80 | n/a | n/a | 109% | 105% | n/a | n/a |
| 25-49 years | 16.00 | 17.00 | 17.00 | 12.00 | 15.40 | 16.40 | n/a | n/a | 104% | 104% | n/a | n/a |
| 50-64 years | 18.00 | 18.00 | 18.00 | 17.00 | 16.70 | 17.70 | n/a | n/a | 108% | 102% | n/a | n/a |
| 65+ years | 12.00 | 12.00 | 12.00 | 13.00 | 11.70 | 12.10 | n/a | n/a | 103% | 99% | n/a | n/a |

Table 4.11 Impact of minimum wage

| | Baseline | | | | Minimum wage included | | | | Ratio | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Description** | **2013** | **2014** | **2015** | **2016** | **2013** | **2014** | **2015** | **2016** | **2013** | **2014** | **2015** | |
| Disposable income (total) | 622,514 | 643,632 | 659,873 | 706,426 | 622,514 | 643,632 | 659,873 | 706,426 | 100% | 100% | 100% | 100% |
| Gross employee earnings (total) | 515,883 | 534,085 | 550,494 | 573,943 | 519,326 | 537,958 | 554,761 | 578,789 | 99% | 99% | 99% | 99% |
| Income tax (total) | 52,191 | 55,035 | 57,276 | 60,356 | 52,191 | 55,035 | 57,276 | 60,356 | 100% | 100% | 100% | 100% |
| Employee SICs (total) | 69,079 | 71,420 | 73,711 | 76,779 | 69,079 | 71,420 | 73,711 | 76,779 | 100% | 100% | 100% | 100% |
| Social assistance (total) | 1,634 | 1,589 | 1,523 | 1,946 | 1,634 | 1,589 | 1,523 | 1,946 | 100% | 100% | 100% | 100% |
| Gini coeficient (Eq HDI) | 30.5 | 30.6 | 30.7 | 28.5 | 30.5 | 30.6 | 30.7 | 28.5 | 100% | 100% | 100% | 100% |
| At poverty risk (60% median HDI) | 17.8 | 18.1 | 18.0 | 13.8 | 17.8 | 18.1 | 18.0 | 13.8 | 100% | 100% | 100% | 100% |