COUNTRY REPORT

POLAND

2016-2019

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EUROMOD version I2.0

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

EUROMOD has been enlarged to cover 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.

The European Commission is in the process of taking over responsibility for carrying out the annual update and release of EUROMOD. The transfer of responsibility is expected to be complete by the end of 2020 and the transition is being facilitated by close cooperation between the University of Essex and the Joint Research Centre (JRC) of the European Commission as well as Eurostat.

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 I2.0. 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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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). In 2017 the old retirement age was restored with the reform taking effect on 01.10.2017. Thus the statutory retirement age is still 60/65 for women/men.

- 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 Support 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 2018 and it resulted in the proposal of freezing family allowance values (apart from the nursing benefit and the care allowance, which has been increased) in consecutive years from 2018 to 2020 and family allowance income thresholds in 2018 and 2020. The last audit of allowances from social assistance which took place in 2018 froze income thresholds and most benefits values and assumes those values to be fixed until the next verification in 2021.

- 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 2017 the statutory retirement age value was 66 years and 3 months (61 years and 3 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 2017 minimum required contributory and non-contributory period for women was 22 years. Beginning from October 2017 the state pension age will move back to 65 (60) for men (women).

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

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

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

Compensatory Allowances (*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 18th 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 1st May 2004 and brought back in October 2008.

Housing support

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

Social Assistance

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

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

    a) **Permanent Compensation Benefit** *(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). As of July 2019, the benefit is expanded to the first child in the family and means testing is abolished.

Start of School Year Allowance (Good Start)

Start of School Year Allowance (*świadczenie dobry start***)**: universal benefit paid once a year for children up to the age of 20, starting the school year. Disabled children at school will receive it until they are 24 years of age. The amount of the benefit is 300PLN (per year). The benefit is exempt from taxation.

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 Rolniczego Ubezpieczenia Społecznego – KRUS).

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

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

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

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

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

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

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

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

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

1.4 Taxes

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

Agricultural Tax (*podatek rolny*): is levied on ownership, co-ownership, possession and co-possession of agricultural arable lands or woods. Lands on which the agricultural tax is imposed are classified in the Register of Lands and 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 250,000 euro (1,078,425.00 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 towarów 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.

Solidarity tax (danina solidarnościowa):

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?
		2016	2017	2018	2019	
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
Pension for mothers of 4 or more kids	poa04_s	I	I	I	I	No data on number of children
Thirteenth pension	boa13_s	S	S	S	S	
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 Allowance	bchuc_s	-	-	-	-	
	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	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	S	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?
		2016	2017	2018	2019	
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 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 2016 to 2019 few structural changes of simulated policies occurred:

- 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 the 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.

- Since July 2018 parents of children who attend school can apply for Start of School Year Allowance

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 2016-2019 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.

This is followed by the thirteenth pension, ben_13pen_pl, which must be included in the tax base. Subsequently, ben_pen04_pl is imputed based on eligibility criteria and external statistics. Since we don't know how many children a pensioner had in their lifetime, we select those women who have reached the age of retirement and do not receive a pension, and randomly assign the benefit.

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.

Childcare Allowance (introduced in April 2016). This benefit uses for the purpose of mean-test the same income concept as the Family Allowance. However, the 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, 2016 - 2019

Policy	2016	2017	2018	2019	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
ben_13pen_pl	Off	Off	Off	On	BEN: Thirteenth pension (trzynasta emerytura)
ben_pen04_pl	Off	Off	Off	On	BEN: Pension for mothers with 4 or more kids (Emerytura matki 4+)
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	On	On	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	**On**	**On**	**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	**On**	**On**	**On**	BEN: Childcare Allowance
ben_ssya_pl	N/A	N/A	N/A	**On**	BEN: Start of School Year 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

Uprating by Average Adjustment switch has been implemented in 2019. This allows for uprating pensions according to the regular rules of indexation when the switch is off, or according to the average rise in pensions when it is on.[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-employed as well, however self-employed 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].[*]

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[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.

Table 2.4 Base ammount of Unemployment Benefit

Year	2016	2017	2018	2019
Amount [1]	831.10	831.10	831.10	847.80
Amount [2]	652.60	652.60	652.60	665.70

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

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

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

Table 2.5 Characteristics of the unemployment benefit

		2016	2017	2018	2019
Eligibility	Contribution period	>= 365 calendar days over the last 18 months	>= 365 calendar days over the last 18 months	>= 365 calendar days over the last 18 months	>= 365 calendar days over the last 18 months
	Other conditions	registered at labour office	registered at labour office	registered at labour office	registered at labour office
	Eligibility of self-employed	Similar conditions	Similar conditions	Similar conditions	Similar conditions
Payment	Contribution base	No, flat-rate benefit	No, flat-rate benefit	No, flat-rate benefit	No, flat-rate benefit
	Monthly Base amount:	PLN 831.10 for three months, PLN 652.60 thereafter.	PLN 831.10 for three months, PLN 652.60 thereafter.	PLN 831.10 for three months, PLN 652.60 thereafter.	PLN 847.80 for three months, PLN 665.70 thereafter.
	Flat payment: Percentage of base amount	1 to 5 years: 80%, 5 to 20 years: 100%,	1 to 5 years: 80%, 5 to 20 years: 100%,	1 to 5 years: 80%, 5 to 20 years: 100%,	1 to 5 years: 80%, 5 to 20 years: 100%,

	depending on work history:	20 years and more: 120%	20 years and more: 120%	20 years and more: 120%	20 years and more: 120%
Duration	Standard (in months)	6	6	6	6
	Special cases (in month)	12 if: local unemployment rate >= 150% national average, OR working period >= 20 years and age >=50, OR if spouse is unemployed with no allowance and child aged <= 15.	12 if: local unemployment rate >= 150% national average, OR working period >= 20 years and age >=50, OR if spouse is unemployed with no allowance and child aged <= 15.	12 if: local unemployment rate >= 150% national average, OR working period >= 20 years and age >=50, OR if spouse is unemployed with no allowance and child aged <= 15.	12 if: local unemployment rate >= 150% national average, OR working period >= 20 years and age >=50, OR if spouse is unemployed with no allowance and child aged <= 15.
Subject to	Taxes	YES	YES	YES	YES
	SIC	YES	YES	YES	YES

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 2.6 Nursing Supplement

Year	2016	2017	2018	2019
Amount	208.67	209.57	215.84	222.01

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 2.7 Nursing Benefit

Year	2016-2019
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 2.8 Family Allowance thresholds

Year	2016	2017	2018	2019
Regulation period	1.11.2015 - 31.10.2016	1.11.2016 - 31.11.2017	1.11.2017 - 31.11.2018	1.11.2018 - 31.11.2019
[1]	674.00	674.00	674.00	674.00
[2]	764.00	764.00	764.00	764.00
[3]	208.83	164.58	214.75	283.25

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, 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 2.9 Family Allowance – benefit levels

Year	2016	2017	2018	2019
Regulation period	1.11.2015 - 31.10.2016	1.11.2016 - 31.10.2017	1.11.2017 - 31.10.2018	1.11.2018 - 31.11.2019
[1]	89.00	95.00	95.00	95.00
[2]	118.00	124.00	124.00	124.00
[3]	129.00	135.00	135.00	135.00

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 80.00PLN per month between 2013 and 2015, 90.00PLN per month in 2016 and 95.00PLN per month in 2017-2019.

Table 2.9 Family Allowance Supplement for Large Families

Years	2016	2017	2018	2019
Regulation period	1.11.2015 - 31.10.2016	1.11.2016 - 31.10.2017	1.11.2017 - 31.10.2018	1.11.2018 - 31.11.2019
Amount	90.00	95.00	95.00	95.00

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	2016-2019
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	2016-2019
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	2016	2017	2018	2019
Regulation period	1.11.2015 - 31.10.2016	1.11.2016 - 31.10.2017	1.11.2017 - 31.10.2018	1.11.2018 - 31.11.2019
[1]	90	90	90	92.50
[2]	110	110	110	112.50

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	2016	2017	2018	2019
Regulation period	1.11.2015 - 31.10.2016	1.11.2016 - 31.10.2017	1.11.2017 - 31.10.2018	1.11.2018 - 31.11.2019
[1]	185	193	193	193
[2]	265	273	273	273

Notes: PLN per month, from 1.06.2018 benefit amount per all children must be below 386 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.

- *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 2009-2019 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-XII 2016	I XII 2017	I XII 2018	I XII 2019
[1]	1,300	1,406	1,477	1,583
[2]	n/a	n/a	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 relatives added up to net income in the family of the dependent relative must be below the amount of 764 PLN per person per month.

Table 2.15 Special Nursing Allowance thresholds

Year	2016	2017	2018	2019
Regulation period	1.11.2015 - 31.10.2016	1.11.2016 - 31.10.2017	1.11.2017 - 31.10.2018	1.11.2018 - 31.10.2019
[1]	764.00	764.00	764.00	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 benefit meant to support parents of new born children who are not eligible to maternity leave allowance: students, employees on civil contracts (i.e. without 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 the 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 the 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	2016	2017	2018	2019
Amount	882.56	1000.00	1029.80	1100.00

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 July 2018 per capita income must be below701 PLN [1] for one person household and 528 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 TemporarySocial Assistance thresholds

Year	2016	2017	2018	2019
Regulation period	1.10.2015 - 30.09.2016	1.10.2016 - 30.09.2017	1.10.2017 - 30.09.2018	1.10.2018 - 30.09.2019
[1]	634.00	634.00	634.00	701.00
[2]	514.00	514.00	514.00	528.00

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

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	2016	2017	2018	2019
Regulation period	1.10.2015 - 30.09.2016	1.10.2016 - 30.09.2017	1.10.2017 - 30.09.2018	1.10.2018 - 30.09.2019
[1]	604	604	604	634
[2]	514	514	514	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	2016	2017	2018	2019
[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 spendings in funding of Temporary Social Assistance statutory amounts. In years 2015-2017 proportions of local government spending in statutory amount of Temporary Social Assistance varied from 1.1% to 1.3%. As we can see the amount of spending on temporary social assistance fell substantially between 2015 and 2017. While one of the reasons behind it are good overall economic conditions, part of the reduction is due to the fall in the number of applications for TSA which resulted from the roll-out of the new Childcare Allowance benefit (see below).

Table 2.22 Temporary Social Assistance – estimation of actual funding proportions

Year	2015	2016	2017
Statutory amount guaranteed by central government (millions of PLN)	889.0	819.4	684.3
Theoretical spending of local government (millions of PLN)	889.0	819.4	684.3
Theoretical total spending of central & local government (millions of PLN)	1778.0	1638.8	1368.6
Actual spending of local government (millions of PLN)	19.9	19.2	17.3
Proportion of local government spending to theoretical spending in %	1.1%	1.2%	1.3%

Source: Own calculations using Ministerstwo Pracy i Polityki Społecznej (2015b-2017b)

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 (214.75 per hectare in 2018). As of July 2019 the income test for the first child has been waived and the benefit is granted to all children.

- *Benefit amount*

The benefit amount is 500.00PLN per month. Payment period in the first year of Childcare Allowance 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.

2.4.18 Start of School Year Allowance

- *Definitions*

This is a non-income tested child benefit for each child at the start of their school year that requires the presence of dependent children in the family (tu_bchcc_pl).

- *Eligibility conditions*

The student is eligible until they turn 20, or 24 if they have a disability. If the dependent child reaches the age limit before the start of the school year, but within the same calendar year in which the benefit is claimed then they are still eligible. Children that are attending kindergarten are not eligible, nor are university students.

- *Income test*

The benefit is granted to all parents, regardless of income. The benefit is non-taxable and is not included in calculations for eligibility for any other benefits.

- *Benefit amount*

The benefit amount is 300 zł, once per year.

2.4.19 Thirteenth pension (poa13_s):

- *Definitions*

This is a one-time non-means tested benefit for all pensioners amounting to an extra payout of the minimum pension in May of 2019.

- *Eligibility conditions*

Anyone who is receiving a pension in May of 2019 receives the additional benefit.

- *Income test*

There is no income test. However, the benefit is included in the taxable income base.

- *Benefit amount*

The benefit amount is 1,100 zł, it is a one-time payout.

2.4.20 Pension for mothers with 4 or more kids (boa04_s):

- *Definitions*

This benefit grants the minimum national pension to mothers (or single fathers) who have raised 4 or more kids.

- *Eligibility conditions*

Must be a mother (or single father) who raised 4 or more kids and did not meet the required minimum time in work to be eligible for the national pension.

- *Income test*

There is no income test. However, the benefit is included in the taxable income base.

- *Benefit amount*

The benefit amount is equal the minimum national pension, once per month.

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)

	2016	2017	2018	2019
Threshold for old-age pension insurance and disability insurance	121,650	127,890	133,290	142,950

Source: Zakład Ubezpieczeń Społecznych (2019e).

- *Contribution rates*

Table 2.24 Employee social security contribution rates (01.01.2016 – 31.12.2019)

	Period	Total contribution rate (%)	Employee rate (%)	Income base limit
Old-age pension insurance	01.01.2016 – 31.12.2019	19.52	9.76	gross income
Disability insurance	01.01.2016 – 31.12.2019	8.00	1.5	gross income
Sickness Insurance	01.01.2016 – 31.12.2019	2.45	2.45	gross income

Source: Zakład Ubezpieczeń Społecznych (2019e).

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 (01.01.2016 – 31.12.2019)

	Year	Total contribution rate (%)	Employer rate (%)	Income base limit
Old-age pension insurance	01.01.2016 – 31.12.2019	19.52	9.76	gross income
Disability insurance	01.01.2016 – 31.12.2019	8.00	6.5	gross income
Sickness Insurance	01.01.2016 – 31.12.2019	2.45	–	gross income
Work accident insurance	01.01.2016 – 31.03.2019	from 0.67 to 3.86	0.67 – 3.86	gross income
	01.04.2016 – 31.12.2019	from 0.40 to 3.60	0.40 – 3.60	gross income
	01.04.2016 – 31.12.2019	from 0.67 to 3.33	0.67	gross income
Labour Fund	01.01.2016 – 31.12.2019	2.45	2.45	gross income
Fund of Guaranteed Employee Benefits	01.01.2016 – 31.12.2019	0.10	0.10	gross income

Source: Zakład Ubezpieczeń Społecznych (2019e).

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 2016 – 2nd quarter 2019)

Year	Quarter	Farm's size				
		up to 50 ha	50ha – 100ha	100ha – 150ha	150ha – 300ha	more than 300 ha
2016	1st	264	582	897	1215	1533
2016	2nd	264	582	900	1218	1536
2016	3rd	264	582	900	1218	1536
2016	4th	264	582	900	1218	1536
2017	1st	264	582	900	1218	1536
2017	2nd	267	585	906	1224	1542
2017	3rd	267	585	906	1224	1542
2017	4th	267	585	906	1224	1542
2018	1st	267	585	906	1224	1542
2018	2nd	273	603	930	1260	1587
2018	3rd	273	603	930	1260	1587
2018	4th	273	603	930	1260	1587
2019	1st	273	603	930	1260	1587
2019	2nd	282	621	957	1296	1635

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 28.06.2019)

Table 2.27 Work Accident, sickness and maternity insurance contribution rates of KRUS (1st quarter 2016 – 2nd quarter 2019)

Work accident, sickness and maternity insurance	1st quarter	2nd quarter	3rd quarter	4th quarter
2016	126.0	126.0	126.0	126.0
2017	126.0	126.0	126.0	126.0
2018	126.0	126.0	126.0	126.0
2019	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 28.06.2019)

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. There is a second rate for anyone who's revenue is below 2.5 times the minimum wage – in this case, income base is 30% of the national minimum wage. 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 (2016-2019)

Year	Rate	Minimum income base	Old-age pension insurance	Disability insurance	Sickness insurance	Work accident insurance	Labour Fund
2016	n/a	2,433.00	474.92	194.64	59.61	43.79	59.61
2017	n/a	2,557.80	499.28	204.62	62.67	46.04	62.67
2018	n/a	2,665.80	520.36	213.26	65.31	44,52	65,31
2019	Regular	2,859.00	558.08	228.72	70.05	47.75	70.04
	Small	675.00	131.76	54.00	16.54	11.27	0

Note: PLN per month
Source: Zakład Ubezpieczeń Społecznych (2019f).

- *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 2016 those self-employed who paid preferential SIC (excluding Labour Fund contributions) accounted for 20.4% to 20.6% of the total number of self-employed, while in 2018 it was 19.2%. Preferential SIC from self-employed (excluding Labour Fund contributions) in 2016 accounted for 5.5% to 5.6% (Table 2.30).

Table 2.29 Proportion of contributors of preferential self-employed SIC to the total number of self-employed SIC contributors (2016-2018)

SIC for:	2016	2017	2018 (I Q)
Retirement and disability pension	20.4%	20,2%	19.2%
Sickness insurance	20.6%	n/a	18.6%
Work accident insurance	20.4%	n/a	19.1%
Labour Fund	n/a	n/a	n/a

Note: The ratios are proportions of monthly averages within the years.
Source: Zakład Ubezpieczeń Społecznych (2016b-2018b, 2016c-2018c, 2016d-2018d).

Table 2.30 Proportion of aggregated values of contributions from preferential self-employed SIC contriubtors to the total value of self-employed SIC contributions (2016-2018)

SIC for:	2016	2017	2018
Retirement and disability pension	5.5%	5.6%	5.4%
Sickness insurance	5.4%	5.5%	4.8%
Work accident insurance	5.6%	5.5%	5.5%
Labour Fund	n/a	n/a	n/a

Note: The ratios are proportions of monthly averages within the years.
Source: Zakład Ubezpieczeń Społecznych (2016b-2018b, 2016c-2018c, 2016d-2018d).

In EUROMOD it is assumed that self-employed people pay the accident insurance rate for entrepreneurs who employ less than 9 persons. Table 2.30. shows how this rate [1] changed between 2016 and 2019.

Table 2.30 Accident insurance rate for self-employed hiring less than 9 persons (2016-2019)

Year	2016	2017	I.-III. 2018	IV.-XII. 2018	I.-III. 2019	IV.-XII. 2019
[1]	1.80%	1.80%	1.80%	1.67%	1.67%	1.67%

Source: Zakład Ubezpieczeń Społecznych (2019e).

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 (2016 - 2019)

Year	HI Paid	HI Deducted
2016-2019	9.00 %	7.75 %

Source: Ministry of Health

Health insurance contributions for self-employed:

- *Liability to contributions*

Self-employed conducting non-agricultural economic activity.

- *Income base used to calculate contributions*

The self-employed pay 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
2016	Jan-Dec	3,210.60	288.95	248.82
2017	Jan-Dec	3,303.13	297.28	255.99
2018	Jan-Dec	3,554.93	319,94	275.51
2019	Jan-Dec	3,573.75	321.64	276.96

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 10.07.2019)

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 2017 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 2016 till 2019 in PLN.

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

		2016	2017	2018	2019
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	2016-2019	no limit
other donations	2016-2019	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)
2016-2019	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	2016-2019	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 2019 the deduction limit was increased to 5,718.00PLN.

Table 2.38 The limit of taxable income deductions due to payments to Individual Pension Security Accounts in PLN per year (2016-2019)

Year	2016	2017	2018	2019
Deduction limit	4,866.00	5,115.60	5,331.60	5,718.00

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 (2016-2019)

2016-2019			
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:

Before 1st January 2017

- 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 2.40a Universal tax credit (2016-2019)

	2016-2019
Universal tax credit (in PLN)	556.02

Source: Ministry of Finance

After 1st January 2017

- Since January 2017 tax credit included withdrawal rate. Withdrawal rate is depended on annual taxable income. The rules of tax credit calculations in 2019 are presented in table 2.40b.

Table 2.40b Tax credit in 2019

Taxable income	Tax credit
0 - 8,000	1.440
8001 - 13,000	$1,440 – 883.98*(\text{taxable income} – 8,000)/5000$
11,001 - 85,258	556.02
85,529 – 127,000	$556.02 – 556.02*(\text{taxable income} – 85,529)/41,472$
127,001 -	0

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 (2016-2019)

	2016	**2017**	**2018**	**2019**
per 1st or 2nd child	1,112.04	1,112.04	1,112.04	1,112.04
per 3rd child	2000.04	2000.04	2000.04	2000.04
per 4th, 5th or any subsequent child	2700.00	2,700.00	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 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 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 (until December 2016) or up to 6,600 PLN (in 2017) and 8000 (since January 2018) 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 (up to 6,600.50 in 2017 and 8,000.50 in 2018) per year are free of taxation. The rounding of tax base and tax liability is not conducted in EUROMOD.

In the Polish tax law, one of conditions defining a dependent child to the 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 (2016-2019)

	2016	2017	2018	2019
Amount of agricultural tax per:				
1 conversion hectare	134.38	131.10	131.23	135.9
1 hectare	268.75	262.20	262.45	271.8
1 quintal of rye	53.75	52.44	52.49	54.36

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.

- 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.

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[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.

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	2017
Original name	UDB EU-SILC
Provider	GUS
Year of collection	2017
Period of collection	4th of May – 15th of July
Income reference period	2016
Sample size	13,057
Response rate	60.5%

The survey unit is the household and all the household members who were at least 16 years old by December 31, 2016. 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	0.757
Warsaw	0.606
Towns 500 000 – 1 000 000 inhabitants	0.692
Towns 100 000 – 500 000 inhabitants	0.703
Towns 20 000 – 100 000 inhabitants	0.752
Towns less than 20 000 inhabitants	0.772
Rural areas	0.834

Non-response

Household non-response rate was 24.5%. The number of contacted households was 15,084out of 15,594 in a sample and 13,064interviews were conducted. The main reason for lack of contact was "There is no dwelling at the address" (445cases). The main reason of non-responding was refusal to co-operate (1,386 cases) and "Temporary absence" (481 cases).

The number of accepted interviews for people at age of 16 or more was 25,847. There were 18,829 face to face interviews and 7,018 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

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 2017 - such as age, marital status, household composition, education, living condition, health, refer to year of data collection (2017).

Information on labour market activity and working history covers partially year of data collection and in some characteristics refer to year 2016. This include information on working status in 2017, attributes of employing company (such as size and sector) or changes of labour market activities in prior year 2016 and reasons of that changes.

The EU-SILC UDB information on incomes refers to the year 2016. 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 2017)"* 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 SILC2016

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 2015. In order to impute the farmer status from household level data, additional conditions were checked for in Euromod's dataset 2016. 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 Uprating

To account for any time inconsistencies between the input dataset and the policy year, uprating 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. Uprating 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, uprating 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. Uprating 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 disposable income (ils_dispy) does not include them. The values 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.

Total disposable household income in EU-SILC (HY020) is computed as the sum of all household members' gross personal income components and 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).

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

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 91% to 98%. The lowest ratio of 91% can be observed in 2018. On the other hand, the unemployment numbers taken from external statistics show higher variability. The value reported by the CSO for the year 2018 is significantly lower than in the EUROMOD's database resulting in a ratio of 225%. The ratio of the number of unemployed in EUROMOD to number in external data is ranging from 139% to 225% in years 2016-2018. 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 a job within a period of 4 weeks prior to the BAEL survey. Furthermore, the EUROMOD simulation is based on data from 2016 and due to a drop in unemployment in the past 3 years a rising disparity can be expected.

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 the numbers of recipients and the values of employment and self-employment income.

The number of employment income recipients in EU-SILC (14,776 thousands recipients) fits well with the values reported by CSO for years 2016-2018. The ratios between EUROMOD and external statistics fall in the range between 94% and 98%. The self-employment income recipients number accounts for 3,199 thousands individuals in EUROMOD database and it is below the number of self-employed reported by external statistics for 2016 with a ratio equal to 81%. Changes in the number of self-employed reported by CSO in years 2017-2018 resulted in ratios that vary from 79% to 78%.

Aggregated values of employment income in the EUROMOD database are similar to values present in external statistics. Relevant ratios for years 2016-2017 are ranging from 103% to 108%. The values of self-employment income is not possible to compare with external statistics, as the administrative data aggregates the self-employed with employers, meaning that the income of business owners is included the total value. Furthermore, as it is stated in the list of EU-SILC target variables[4]: "collection of accurate income information from the self-employed 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 the self-employed are less likely than the employed to respond to income surveys, which results in a higher level of item non-response. Finally, the financial and accounting framework used in the construction of national accounts by statisticians does not relate well to those used by the self-employed.

Table 4.5 presents a validation of the number of payers of non-simulated taxes and the recipients of benefits. Looking closer to subgroups of pensioners reveals over simulation in the number of old age pension recipients with a ratio of 115% for 2016 and a ratio of 132% in the group of disability pension recipients for 2016. At the same time the number of survivors pension recipients is under simulated in 2016 with a ratio of 69%. The under simulation of the number of survivors pension recipients may be explained by the fact that those benefits can be perceived by their claimants as either old-age or disability pensions and incorrectly reported in the survey data. If one would add up the numbers of recipients of disability, old age and survivors pensions and compare it with the relevant sum of external statistics then the ratio of accuracy would be 111% in 2016, 110% in 2017 and 103% in 2018. This shows that in general the information about recipients of disability, old-age and survivors pensions in EUROMOD is accurate. There is no clear explanation of under simulation of the number of recipients of farmer's structural pensions. According to the external data the benefit is under simulated by 23% in year 2016. Unfortunately, the statistics that allow for the validation of the number of recipients of other non-simulated benefits and taxes included in Table 4.5 are not provided in publicly available sources.

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[4]Eurostat (2016).

In general, the validation of non-simulated taxes and benefits aggregated amounts result in similar observations as in the case of recipient 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 2016 disability pension amounts are over simulated with ratio of 105% and survivor pension amounts have a ratio of 63%. Under simulation 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 property tax validation shows that households included in the data paid between 25% and 23% of the total value reported by the Ministry of Finance, which might actually be accurate 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 the validation of the number of simulated benefit recipients and taxes/social security contributions payers. The validation of the number of recipients of family allowance and its supplements is hampered due to the fact that the EUROMOD output in this case is on a family level and most official statistics concerning family benefits reflect the 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 over simulated by the model. For 2016, the model simulates that 1343 thousands of families were eligible to family allowance. This number accounts for 114% of the families reported in official statistics.

Aggregated amounts of simulated family benefits in Table 4.8 are consistent with simulated numbers of recipients. This shows that eligibility identification is the main problem in case of family benefits simulation. Simulated values of family allowance range between 108% to 111% of relevant administrative data, while ratios of simulated values of supplement for child birth vary from 100% to 102%. Aggregated values of the supplement for starting the school year are different from benchmark statistics by 3% to 4%. Simulated values of the supplement for large families accounts for 106% to 112% of external statistics, while the supplement for lone parents ranges between 72% to 77% of the benchmark data. The simulated aggregated amount of child birth allowance is over simulated by 6% the external statistics in 2016 and by 8% in 2017.

Identification of recipients of the nursing benefit also proved challenging. The simulated number of nursing benefit recipients in 2016 and 2017 is 50% below the benchmark value. This appears as a substantial under simulation, but it is worth stressing that when 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 the criteria for claiming the nursing benefit individuals above 16 years old with a moderate degree of disability can claim the benefit if their disability started before reaching the age of 21. This factor is being controlled in the simulation of the nursing benefit by the condition that an individual with a moderate degree of disability is granted the benefit if he declared take-up of the benefit in the national SILC data. However, there are no individuals fitting this condition in the EUROMOD dataset. It seems that the simulation of the nursing benefit lacks a substantial group of nursing benefit recipients.

The number of nursing allowance recipients simulated for income reference year 2016 is over simulated with ratio of 123% of the number reported in official statistics. The ratio for 2017 is 117%. The over simulation of number of nursing allowance recipients in 2016 might be explained by the fact that this allowance is partially simulated based on the declaration of take-

up in the 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.

Macrovalidation of special nursing allowance shows an exact simulation of the recipients number an under simulation by 33% in 2016. The increase in the income threshold for the means-test applied for the purpose of the special nursing allowance was increased in November 2014 and November 2015. This might cause under simulation of number of recipients of special nursing allowance for the year 2016. Accuracy ratios for simulated aggregated special nursing allowance values for years 2016-2017 slightly more accurate. The aggregated value for 2016 is 23% below the benchmark.

The simulated number of recipients of the unemployment benefit for 2017 is 396,000, while in official statistics it is 201,000. 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 198,000 which would be 97% of the target official statistic. Thus, in order to fit exactly the number of 232,000 recipients, one should assume that the average duration of unemployment benefit take-up is 6 months, even though some of the benefits are paid for 12 or even 18 months. Hence, it seems that the SILC database could represent unemployment benefit claimants accurately. This is supported by the simulated value of the benefit aligning closely to the external statistics, with a ratio of 85% in 2016 and 97% in 2017.

The simulation for 2017 identifies only 95% of the aggregate value of housing benefits that year. Unfortunately, the government only releases data on the number of benefits paid, rather than the number of recipients. 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. Since there is no set duration for benefit eligibility, it is not possible to assess the number of recipients based on the number of paid out benefits.

While permanent social assistance fairly well simulated, temporary social assistance is very heavily under simulated. This can be attributed to a variety of factors, ranging from the complex eligibility criteria in assessing who could pass the means test to the short term nature of the benefit. This makes it unlikely that everyone who receives the benefit in the relevant income year will report receiving assistance, while the external statistics include anyone who was granted the benefit at some point in the year.

The number of employees who contribute to social insurance looks very poorly identified by the model. The simulation for 2016 returns 150% of the number of employees paying SIC, with the ratio slightly decreasing to 147% in 2017 and 143% in 2018. When it comes to aggregated values, the simulation for 2016 returns 92% of contributions paid by employees, and 90% in 2017. 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 2016 would require the assumption that average number of months should be equal to 8.7. Although it may seem too low we have to remember that the model assumes that all declared incomes are registered. The latest statistic for the number of persons employed in the "shadow economy" is from 2014, and is estimated at around 711 thousand[5], if the number of payers outputted in the model were lowered by 711 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

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[5] Central Statistical Office (2015b).

the simulated number of contributions payers and simulated aggregated values as well. The same arguments are valid for simulated employer contributions.

The simulated number of the self-employed who pay social security contributions is 18% above the figure sourced from external data for 2016 and 15% in 2017. When it comes to aggregated values simulated for 2016, the simulated values of self-employed contributions are 72% above benchmark value, with an over simulation of 69% in 2017 and 59% in 2018. Similar explanations to those described above for employees apply for the self-employed too. The model simulates the number of contributors in a year, while administrative data is expressed as a monthly average. Moreover there is also a concern about unregistered economic activity of the 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 the observed discrepancies might, to some extent, be explained by the application of the 60% rate used to calculate the income base for self-employed social contributions. In reality, the self-employed running a business for less than two years and those who are disabled can use a reduced rate of 30% to calculate the income base for self-employed social security contributions.

The simulated number of payers of social contributions for farmers for income reference year 2016 have ratio of 140%. However, the number of agricultural tax payers is underestimated by the model and it accounts for 87% of administrative data for year 2016.

Simulated numbers of income tax payers are closer to the benchmark levels for the year 2016. Ratio for the number of income tax payers for 2016 is equal to 91%. Aggregated values of simulated personal income tax have a similar disparity from official statistics. The aggregated value for personal income tax is over simulated by 17% in 2016 and 6% in 2017, but is almost exactly correct in 2018 at 99%.

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 the population, median and mean equivalised incomes, Gini coefficient and income quantile ratio. In income reference year 2016, shares of the lower income decile groups are slightly over simulated by up to 9%, while upper decile groups are under simulated by a maximum 1-3% In 2017 and 2018 the simulation results becomes more accurate, with the largest variation in 2018 reaching only 4%.

Median equivalised incomes and mean incomes 5% above the benchmark in 2016, but they are even more accurate in 2017 and 2018 . The Gini coefficient is simulated with 7% off according to external statistics from 2016, but only over simulated by 2% in 218. Income quantile ratio simulated in EUROMOD is also slightly over simulated in 2018, but again by a very small amount, specifically 4%.

4.2.2   Poverty rates

Validation of at risk of poverty rates calculated using EUROMOD is presented in Table 4.10. For 2018, the simulated number of individuals below 40% of the median household disposable income is virtually the same as the value in the external statistics, with a ratio of 97%. The simulated proportion of individuals below 50% median household disposable income poverty line is also 3% below the benchmark for 2018. At the same time the simulated number of people with income below 60% median household disposable income is simulated with 98% accuracy, while simulated share of population living with income below 70% of the median HDI is 6% lower than proportion reported in external data.

The simulated share of people from different age groups living with income below 60% of the median HDI in income reference year 2018 is 77% for population aged 0-17, over simulated by 3% for population aged 18-24, but 98% precise for the population aged 25-49 years old. The share of the population living with income below 60% of the median HDI is over simulated by 4% for the population aged 50-64 years and by 1% for the population aged 65+.

Data for the previous years (2016 and 2017) are significantly less accurate when compared to external statistics.

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 not detectable. This means that in the surveys for years 2016-2019 gross employee incomes below the minimum wage were virtually unrecorded.

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.

5. REFERENCES

- *Other references*

Central Statistical Office (2016d): *Incomes and Living Conditions of The Population in Poland (report from the EU-SILC survey of 2014)*, Statistical Publishing Establishment, Warsaw.

Eurostat (2015): *EU-SILC Description Target Variables.* [source: http://ec.europa.eu/eurostat/documents/1012329/6070906/Personal+data+-+income.pdf/e0aa20ce-d452-4f0a-9341-88d9e8cff2c4 (last access 19.06.2017)]

Eurostat:
http://ec.europa.eu/eurostat/data/database

Myck, M., Kundera, M., Najsztub, M., Oczkowska, M., (2014): *Projekt budżetu na rok 2015 – jak plany odczują domowe budżety?* CenEA Commentary 29.10.2014.

- *Sources for tax-benefit description/rules*

Agricultural Social Insurance Fund (2013): Basic Information, Organisational and Legal Department, Warsaw.

Agricultural Social Insurance Fund (Kasa Rolniczego Ubezpieczenia Społecznego): http://www.krus.gov.pl/en/

European Commission (2016): *Your rights country by country. Poland.* European Commission website (last access 19.06.2017), source: http://ec.europa.eu/social/main.jsp?catId=1124&langId=en .

Internetowy System Aktów Prawnych: http://isap.sejm.gov.pl/

Ministry of Finance (Ministerstwo Finansów): http://www.mf.gov.pl/en/news

Ministry of Health (Ministerstwo Zdrowia): http://www.mz.gov.pl/en

Ministry of Labour and Social Policy (Ministerstwo Pracy i Polityki Społecznej): http://www.mpips.gov.pl/en/

MISSOC – Mutual Information System on Social Protection: http://www.missoc.org/

National Health Fund (Narodowy Fundusz Zdrowia): http://www.nfz.gov.pl/

Social Insurance Institution (Zakład Ubezpieczeń Społecznych): http://www.zus.pl/default.asp?p=1&id=1442

Social Insurance Institution (2015): Social Security in Poland, Warsaw.

Ustawa z dnia 21 czerwca 2001 r. o dodatkach mieszkaniowych (Dz. U. z 2001 r. Nr 71, poz. 734).

Zakład Ubezpieczeń Społecznych (2018e): *Wysokość składek na ubezpieczenia społeczne.* [source: http://www.zus.pl/baza-wiedzy/skladki-wskazniki-odsetki/skladki/wysokosc-skladek-na-ubezpieczenia-spoleczne (last access 15.11.2018)]

Zakład Ubezpieczeń Społecznych (2018f): *Minimalna podstawa wymiaru i wysokość składek na ubezpieczenia społeczne, ubezpieczenie zdrowotne i fundusze pozaubezpieczeniowe od 1 stycznia 1999 r.* [source: http://www.zus.pl/documents/10182/24106/minimalna_podstawa.pdf/8e3c77a4-ee09-4377-8ec8-ed03aa235a2b (last access 15.11.2018)]

- ***Statistics***

Agencja Restrukturyzacji i Modernizacji Rolnictwa (2016): *Kwota zrealizowanych płatności oraz liczba beneficjentów, którzy otrzymują płatności w działaniu Renty Strukturalne 113 w podziale na województwa i lata, według stanu na dzień 31.08.2015 roku.*

Agricultural Social Insurance Fund (2013): Basic Information, Organizational and Legal Department, Warsaw.

Central Statistical Office (2016a-2019a): *Concise Statistical Yearbook of Poland*, Statistical Publishing Establishment, Warsaw.

Central Statistical Office (2016b-2019b): *Statistical Bulletin 7*, Statistical Publishing Establishment, Warsaw.

Central Statistical Office (2016c): *Unregistered employment in Poland in 2014*, , Statistical Publishing Establishment, Warsaw.

Central Statistical Office (2018d): *National Accounts by Institutional Sectors and Sub-Sectors 2013 – 2017,* Statistical Publishing Establishment, Warsaw. [source: http://stat.gov.pl/download/gfx/portalinformacyjny/en/defaultaktualnosci/3300/2/11/1/national_accounts_by_institutional_sectors_and_sub_sectors_2012_2015.pdf (last access 10.10.2017)]

Central Statistical Office, *Local Data Bank*: https://bdl.stat.gov.pl/BDL/start

Central Statistical Office (2016e-2019e): *Statistical Yearbook of the Republic of Poland*, Statistical Publishing Establishment, Warsaw.

Central Statistical Office (2015f-2016f): *Housing Economy in 2014 r. (2015 r.)*, Statistical Publishing Establishment, Warsaw.

Central Statistical Office (2016g-2018g): *Agriculture in 2014 (2015, 2016)*, Statistical Publishing Establishment, Warsaw.

Kasa Rolniczego Ubezpieczenia Społecznego (2016-2018): *Kwartalna informacja statystyczna, IV kwartał 2014 r.(2015 r., 2016 r.)*, Warszawa.

Ministerstwo Finansów (2015a-2017a): *Informacja dotycząca rozliczenia podatku dochodowego od osób fizycznych za rok 2013 (2014, 2015)*, Departament Podatków Dochodowych, Warszawa.

Ministerstwo Finansów (2017b-2019b): *Informacja z wykonania budżetów gmin za IV Kwartały 2015 (2016, 2017) roku.*

Ministerstwo Finansów (2018c): *Dane statystyczne za lata 2012-2016 dotyczące podatników, do których ma zastosowanie ustawa z 20 listopada 1998 r. o zryczałtowanym podatku dochodowym od niektórych przychodów osiąganych przez osoby fizyczne.*

Ministerstwo Pracy i Polityki Społecznej (2017a-2019a): *Informacja o realizacji świadczeń rodzinnych w 2015 r. (2016 r., 2017 r.)*, Departament Polityki Rodzinnej, Warszawa.

Ministerstwo Pracy i Polityki Społecznej (2017b-2019b): *Sprawozdanie MPiPS-03-R za I-XII 2015 r. (2016 r., 2017 r.)*, Departament Pomocy i Integracji Społecznej, Warszawa.

Zakład Ubezpieczeń Społecznych (2017a-2019a): *Ważniejsze informacje z zakresu ubezpieczeń społecznych 2015 r. (2016 r., 2017 r.)*, Departament Statystyki i Prognoz Aktuarialnych, Warszawa.

Zakład Ubezpieczeń Społecznych (2017b-2019b): *Liczba tytułów ubezpieczenia oraz kwota przypisu składek na ubezpieczenie chorobowe według grup tytułów ubezpieczenia w 2016 r. (2017 r., 2018 r.).*

Zakład Ubezpieczeń Społecznych (2017c-2019c): *Liczba tytułów ubezpieczenia oraz kwota przypisu składek na ubezpieczenia emerytalne i rentowe według grup tytułów ubezpieczenia w okresie styczeń – grudzień 2016 r. (2017 r., 2018 r.).*

Zakład Ubezpieczeń Społecznych (2017d-2019d): *Liczba tytułów ubezpieczenia oraz kwota przypisu składek na ubezpieczenie wypadkowe według grup tytułów ubezpieczenia w 2015 r. (2016 r., 2017 r.)*

Zakład Ubezpieczeń Społecznych (2017e-2019e): *Wydatki na świadczenia z ubezpieczeń społecznych związane z niezdolnością do pracy w 2016 r. (2017 r.)*

Zakład Ubezpieczeń Społecznych (2017f-2019f): *Miesięczna informacja o wybranych świadczeniach pieniężnych 2016 r. (2017 r.)*

6.   APPENDIX: POLICY EFFECTS IN 2018-2019

Table 1 and Figure 1 show the effect of 2019 policies on mean equivalized household disposable income by income component and income decile group. This effect is estimated as the difference between simulated household net income under the 2019 tax-benefit policies (deflating monetary parameters by Eurostat's Harmonized Index of Consumer Prices, HICP) and net incomes simulated under 2018 policies, as a percentage of mean equivalized household disposable income in 2018.

Table A1 and Figure A1 show that between 2018-2019 the average equivalised household disposable income (HDI) - measured in real values - from 2018 increased by 0.58%. This change was mainly driven by an increase of non-means tested benefits. Although the effect is positive for the whole distribution, this change was most pronounced in the lowest deciles. The income group which gained the most was the 1st income decile with an average increase of equivalised HDI of 4.09%.

Although smaller, the most visible negative changes in mean equivalised HDI are associated with changes in public pensions and direct taxes. On average public pensions decreased household incomes by 0.41%, reflecting that pension indexation was lower than growth in CPI. For its part, an increasing tax burden reduced equivalised HDI – on average by 0.28%. This is partially explained by the lack of tax parameter indexation to accommodate for inflation. Furthermore, lower income groups had the greatest proportional benefit from increasing non-means tested benefits, especially the one-time thirteenth minimum pension (boa13_s), so they also encountered a more significant increase in their tax burden, with the 1st decile paying 0.98% more in direct taxes.

Table A1: Policy effects in 2018-2019, using the CPI-indexation, %

	Original income	Public pensions	Means-tested benefits	Non means-tested benefits	Employee SIC	Self-employed SIC	Other SIC	Direct taxes	Disposable income
Decile 1	0.00	-0.84	0.39	4.09	0.00	0.26	0.00	-0.98	2.92
Decile 2	0.00	-0.72	-0.12	2.96	0.00	0.24	0.00	-0.66	1.70
Decile 3	0.00	-0.65	-0.16	2.40	0.00	0.07	0.00	-0.52	1.14
Decile 4	0.00	-0.60	-0.07	1.95	0.00	0.10	0.00	-0.39	0.99
Decile 5	0.00	-0.51	-0.07	1.61	0.00	-0.05	0.00	-0.32	0.67
Decile 6	0.00	-0.51	-0.01	1.46	0.00	0.01	0.00	-0.28	0.67
Decile 7	0.00	-0.43	0.01	1.15	0.00	0.01	0.00	-0.22	0.53
Decile 8	0.00	-0.37	0.09	0.86	0.00	-0.04	0.00	-0.16	0.39
Decile 9	0.00	-0.27	0.01	0.58	0.00	-0.02	0.00	-0.13	0.17
Decile 10	0.00	-0.17	0.03	0.29	0.04	-0.06	0.00	-0.14	0.00
Total	0.00	-0.41	0.01	1.23	0.01	0.01	0.00	-0.28	0.58

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 2019, using the modified OECD equivalence scale. Each policy system has been applied to the same input data, deflating monetary parameters of 2019 policies by Eurostat's Harmonized Index of Consumer Prices (HICP).

Figure A1: Policy effects in 2018-2019, using the CPI-indexation, %
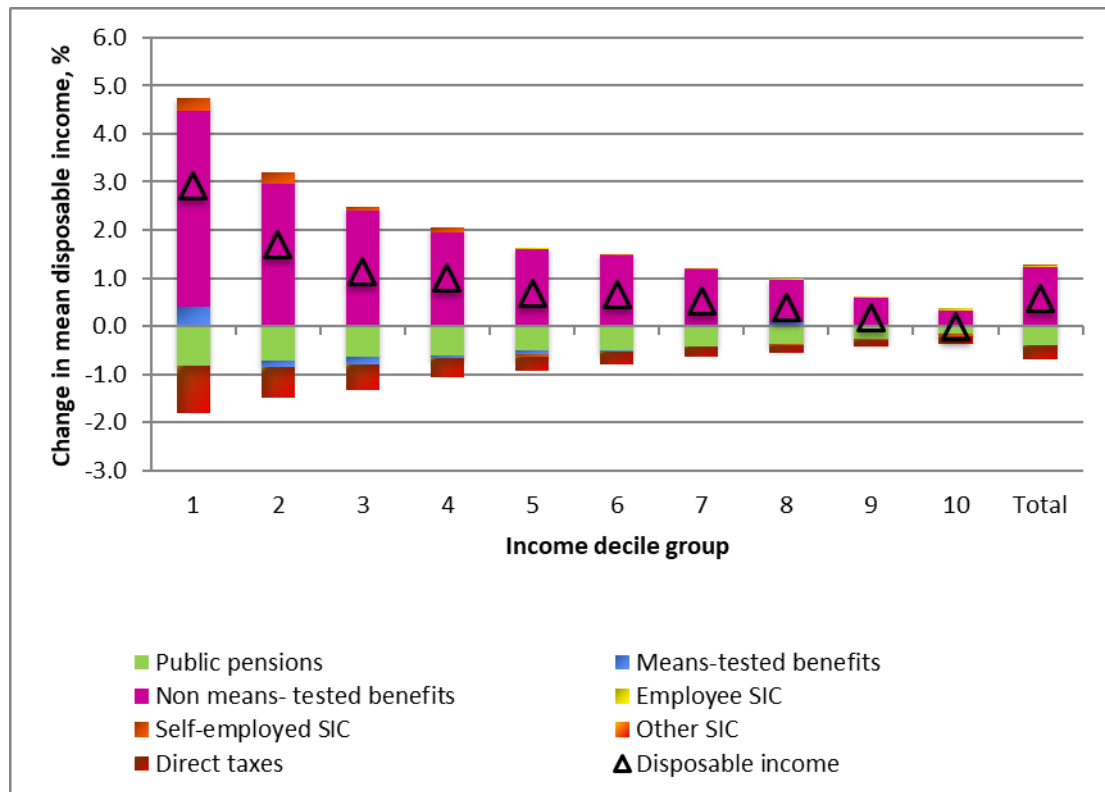
7. ANNEX 1

Table 8.1 Raw indicies for deriving EUROMOD uprating factors

Index	Income Source/index type	2016	2017	2018	2019
$f_h_cpi	Eurostat / Harmonized Indices of Consumer Prices (HICP)	124.9	127.1	128.6	129.4
$f_lab_cost	Central Statistical Office / Statistical Bulletin / Average monthly wages and salaries – grand total, IV-VI	4019.08	4088.40	4622.84	4765
$f_ret_pen	Central Statistical Office / Statistical Bulletin / Average monthly retirement pay and pension in PLN / from non-agricultural social security system / retirement pay	2200.69	2238.65	2176.21	2343.85
$f_dis_pen	Central Statistical Office / Statistical Bulletin / Average monthly retirement pay and pension in PLN / from non-agricultural social security system / disability pension	1665.67	1694.40	1718.17	1837.13
Sf_fam_pen	Central Statistical Office / Statistical Bulletin / Average monthly retirement pay and pension in PLN / from non-agricultural social security system / family pension	1908.72	1941.64	1968.88	2043.62
$f_gdp	Central Statistical Office / National accounts / The CSO information on quarterly GDP estimate / Gross Domestic Product	1818092	1902073	1999078	2071045

Source: Central Statistical Office (2015b-2018b), Eurostat

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 pensions	$f_ret_pen
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 average retirement pensions	$f_ret_pen
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	$f_fam_pen

		pensions	
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
xhcscel	expenditure : housing cost : service charges : electricity	Growth of HICP	$f_h_cpi
xhcscht	expenditure : housing cost : service charges : heating	Growth of HICP	$f_h_cpi
xhcscrf	expenditure : housing cost : service charges : refuse	Growth of HICP	$f_h_cpi
xhcscwt	expenditure : housing cost : service charges : water	Growth of HICP	$f_h_cpi
xishl	expenditure : insurance : health care	Growth of HICP	$f_h_cpi
xivhcrt	expenditure : imputed value : housing cost : rent	Growth of HICP	$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
ydses_o	income : equivalized disposable income: original SILC	Growth of HICP	$f_h_cpi
yem	income : employment	Growth of average salary	$f_lab_cost
yempj	income : employment : permanent job	Growth of	$f_lab_cost

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yemtj	income : employment : temporary job	average salary 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

8. **ANNEX 2**

Table 4.2-Number of employed and unemployed

	EUROMOD	External				Ratio			
	2016	2016	2017	2018	2019	2016	2017	2018	2019
Number of employed		14200	14504	15380	15685	N/A	0.98	0.92	0.91	N/A
Number of unemployed		1479.72	1063	844	659	N/A	1.39	1.75	2.25	N/A

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

	EUROMOD	External				Ratio			
	2016	2016	2017	2018	2019	2016	2017	2018	2019
Employment income	14800	15178	15720	15685	N/A	0.98	0.94	0.94	N/A
Self-employment income	3199.049	3952	4066	4126	N/A	0.81	0.79	0.78	N/A
Private pensions	9.80796	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Property income	523.2712	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Investment income	460.0833	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

	EUROMOD				External				Ratio			
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019
Average income	3239.027	3294.892	3643.594	3840.173	4047.21	4283.73	4585.03	N/A	0.80	0.77	0.79	N/A
Employment income	574341.8	584247.7	646079.5	680936.6	556,845	539519	N/A	N/A	1.03	1.08	N/A	N/A
Self-employment income	87949.37	91411.35	96950.08	98046.66	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Private pensions	77.87171	79.21531	79.56123	79.68468	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Property income	3849.187	4026.996	4333.338	4384.735	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Investment income	2289.399	2395.149	2577.357	2607.928	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 4.5-Tax benefit instruments included but not simulated in EUROMOD

	EUROMOD	External				Ratio			
	2016	2016	2017	2018	2019	2016	2017	2018	2019
Benefits									
Disability pension	1284	967	907	1007	N/A	1.327666	1.415494	1.274929	N/A
Social pension	253	276	278	280	N/A	0.917474	0.910874	0.904368	N/A
Old-age pension	7310	6337	6480	6829	N/A	1.153604	1.128146	1.070492	N/A
Farmer's structural pension	41	53	53	53	N/A	0.770699	0.770699	0.770699	N/A
Survivors pension	870	1259	1252	1363	N/A	0.690789	0.694652	0.638081	N/A
Other survivor benefits	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nursing supplement	2135	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Early retirement pension	181	N/A	160	108	N/A	N/A	1.129866	1.673875	N/A
Sickness and injury benefits	208	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Maternity benefit	280	396	407	N/A	N/A	0.707595	0.688471	N/A	N/A
Special circumstances social assistance	155	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Taxes and Social Insurance contributions									
Property tax	11500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

	EUROMOD				External				Ratio			
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019
Benefits												
Disability pension	16321.06	16602.56	16675.03	16701.00	15481	14607	N/A	N/A	1.05	1.14	N/A	N/A
Social pension	2257.69	2296.63	2306.65	2310.25	2427	2746	3197	N/A	0.93	0.84	0.72	N/A
Old-age pension	168992.50	171907.10	172657.40	172926.40	159219	199091	214410	N/A	1.06	0.86	0.81	N/A
Farmer's structural pension	634.20	645.14	647.95	648.96	N/A	16924	17039	N/A	N/A	0.04	0.04	N/A
Survivors pension	17610.55	17914.28	17992.47	18020.50	28055	28507	2659	N/A	0.63	0.63	6.77	N/A
Other survivor benefits	18.10	18.42	18.50	18.53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nursing supplement	1186.31	1206.90	1212.11	1214.09	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Early retirement pension	2017.56	2052.35	2061.31	2064.52	N/A	1640	1130	N/A	N/A	1.25	1.82	N/A
Sickness and injury benefits	895.03	910.46	918.67	927.27	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Maternity benefit	3391.74	3450.24	3481.35	3513.94	3746	4056	N/A	N/A	0.91	0.85	N/A	N/A
Special circumstances social assistance	116.35	118.36	119.42	120.54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Taxes and Social Insurance contributions												
Property tax	3102.34	3155.86	3184.34	3214.15	12613	13372	13800	N/A	0.25	0.24	0.23	N/A

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

	EUROMOD				SILC	Ratio	External				Ratio			
	2016	2017	2018	2019	2016	2016	2016	2017	2018	2019	2016	2017	2018	2019
Benefits														
Family allowance	1343.87	1361.89	1145.25	1088.93	1087.73	1.24	1181.00	1119.00	1115.00	N/A	1.14	1.22	1.03	N/A
supp child birth	136.41	138.31	115.65	109.89	82.43	1.65	160.00	157.00	N/A	N/A	0.85	0.88	N/A	N/A
supp education of disabled child	141.94	141.34	133.55	133.55	3.29	43.16	137.00	134.00	132.00	N/A	1.04	1.05	1.01	N/A
supp starting school year	999.60	1016.56	867.63	824.69	0.00	N/A	1593.00	1619.00	N/A	N/A	0.63	0.63	N/A	N/A
supp large families	252.18	261.21	231.28	228.09	213.92	1.18	340.00	354.00	333.00	N/A	0.74	0.74	0.69	N/A
supp lone parent	45.80	46.97	44.00	44.00	75.04	0.61	100.00	99.00	96.00	N/A	0.46	0.47	0.46	N/A
child birth allowance	324.64	323.54	302.88	298.28	0.00	N/A	305.00	279.00	N/A	N/A	1.06	1.16	N/A	N/A
nursing benefit	452.44	452.44	452.44	452.44	455.72	0.99	917.00	912.00	N/A	N/A	0.49	0.50	N/A	N/A
nursing allowance	144.47	144.47	144.47	144.47	87.77	1.65	117.00	123.00	N/A	N/A	1.23	1.17	N/A	N/A
special nursing allowance	26.42	26.01	22.01	22.67	35.55	0.74	39.00	44.00	42.00	N/A	0.68	0.59	0.52	N/A
soc assist permanent	198.63	180.19	175.69	176.08	127.38	1.56	214.00	214.00	203.00	N/A	0.93	0.84	0.87	N/A
soc assist temporary	141.23	127.22	117.61	114.78	147.07	0.96	417.00	365.00	318.00	N/A	0.34	0.35	0.37	N/A
Unemployment benefit	396.07	396.07	396.07		396.07	1.00	201.00	171.00	151.00	N/A	1.97	2.32	2.62	N/A
housing benefit	186.36	191.16	186.19	184.96	348.92	0.53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Taxes and Social Insurance contributions

Employee SIC	14800.00	14800.00	14800.00	14800.00	14800.00	1.00	9859.00	10076.00	10307.00	N/A	1.50	1.47	1.44	N/A
Employer SIC	14800.00	14800.00	14800.00	14800.00	14800.00	1.00	9859.00	10076.00	10307.00	N/A	1.50	1.47	1.44	N/A
Self-employed SIC	1618.62	1640.92	1630.29	1632.30	1618.62	1.00	1393.00	1433.00	1474.00	N/A	1.16	1.15	1.11	N/A
SIC: farmer contributions	1893.75	1893.75	1893.75	1893.75	1893.75	1.00	1350.00	N/A	N/A	N/A	1.40	N/A	N/A	N/A
Total Income tax	22893.23	22315.81	22060.73	22516.94	22893.23	1.00	25103.00	25316.00	N/A	N/A	0.91	0.88	N/A	N/A
capital income tax	460.08	460.08	460.08	460.08	460.08	1.00	1049.00	1678.00	N/A	N/A	0.44	0.27	N/A	N/A
Health insurance	22800.00	22200.00	21900.00	22100.00	22800.00	1.00	24306.00	24547.00	N/A	N/A	0.94	0.90	N/A	N/A
Agricultural tax	1205.51	1205.51	1205.51	1205.51	1205.51	1.00	1384.00	N/A	N/A	N/A	0.87	N/A	N/A	N/A

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

	EUROMOD				SILC				Ratio				External				Ratio			
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019
Benefits																				
Family allowance	3173.44	3368.56	2922.88	2773.50	3555.38	3616.71	3649.34	3683.48	0.89	0.93	0.80	0.75	2942.00	3023.00	N/A	N/A	1.08	1.11	N/A	N/A
supp child birth	131.84	127.62	110.25	106.34	788.96	802.57	809.80	817.38	0.17	0.16	0.14	0.13	129.00	127.00	N/A	N/A	1.02	1.00	N/A	N/A
supp education of disabled child	192.34	192.56	182.92	176.67	0.72	0.74	0.74	0.75	265.73	261.61	246.26	235.60	160.00	168.00	N/A	N/A	1.20	1.15	N/A	N/A
supp starting school year	154.76	156.24	136.81	129.86	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	159.00	150.00	N/A	N/A	0.97	1.04	N/A	N/A
supp large families	389.33	416.17	388.05	376.76	1904.93	1937.78	1955.26	1973.56	0.20	0.21	0.20	0.19	366.00	373.00	N/A	N/A	1.06	1.12	N/A	N/A
supp lone parent	164.46	172.81	167.42	166.88	354.96	361.08	364.34	367.75	0.46	0.48	0.46	0.45	227.00	223.00	N/A	N/A	0.72	0.77	N/A	N/A
child birth allowance	324.63	323.53	302.87	298.27	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	305.00	300.00	N/A	N/A	1.06	1.08	N/A	N/A
nursing benefit	859.97	859.97	859.97	859.97	814.71	828.77	832.39	833.67	1.06	1.04	1.03	1.03	1683.00	1675.00	1730.00	N/A	0.51	0.51	0.50	N/A
nursing allowance	2253.78	2437.55	2560.64	2560.64	1266.89	1288.74	1300.36	1312.53	1.78	1.89	1.97	1.95	1817.00	2065.00	N/A	N/A	1.24	1.18	N/A	N/A
special nursing allowance	164.83	162.29	137.33	141.44	223.27	227.12	229.17	231.31	0.74	0.71	0.60	0.61	215.00	270.00	N/A	N/A	0.77	0.60	N/A	N/A
soc assist permanent	858.33	797.79	809.75	806.83	540.49	549.81	554.77	559.97	1.59	1.45	1.46	1.44	1069.00	1057.00	1018.00	N/A	0.80	0.75	0.80	N/A
soc assist temporary	505.97	475.35	440.87	430.18	211.62	215.27	217.21	219.24	2.39	2.21	2.03	1.96	839.00	701.00	588.00	N/A	0.60	0.68	0.75	N/A
Unemployment benefit	1515.77	1515.77	1515.77		2184.02	2221.69	2241.72	2262.70	0.69	0.68	0.68	0.00	1790.00	1550.00	N/A	N/A	0.85	0.98	N/A	N/A
housing benefit	686.72	706.40	691.80	688.92	564.42	574.16	579.34	584.76	1.22	1.23	1.19	1.18	N/A	746.00	N/A	N/A	N/A	0.95	N/A	N/A

Taxes and Social Insurance contributions

Employee SIC	76857.77	78293.71	86356.53	90774.31	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	83389.00	85223.00	N/A	N/A	0.92	0.92	N/A	N/A
Employer SIC	115650.50	117804.60	129109.90	135727.10	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	89306.00	91270.00	N/A	N/A	1.29	1.29	N/A	N/A
Self-employed SIC	16028.19	16529.26	18160.16	18367.67	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	9327.00	9494.00	10080.00	N/A	1.72	1.74	1.80	N/A
SIC: farmer contributions	3065.63	3353.04	3137.72	3137.72	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Income tax	58939.48	60524.46	67423.99	73258.72	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	50452.00	55500.00	59558.00	N/A	1.17	1.09	1.13	N/A
capital income tax	434.99	455.08	489.70	495.51	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Health insurance	64844.11	65447.82	69905.90	73067.89	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	66632.00	70573.00	N/A	N/A	0.97	0.93	N/A	N/A
Agricultural tax	2050.41	2000.45	2002.34	2073.69	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	1692.00	1463.00	1460.00	N/A	1.21	1.37	1.37	N/A

Table 4.9-Distribution of equivalised disposable income

	EUROMOD				External				Ratio			
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019
D1	3.27	3.30	3.21	3.23	3	3.1	3.3		1.09	1.07	0.97	N/A
D2	5.43	5.44	5.31	5.30	5	5.2	5.4		1.09	1.05	0.98	N/A
D3	6.63	6.61	6.49	6.51	6.2	6.4	6.5		1.07	1.03	1.00	N/A
D4	7.57	7.56	7.46	7.43	7.2	7.4	7.5		1.05	1.02	0.99	N/A
D5	8.41	8.40	8.30	8.33	8.3	8.3	8.5		1.01	1.01	0.98	N/A
D6	9.32	9.36	9.28	9.24	9.4	9.3	9.5		0.99	1.01	0.98	N/A
D7	10.44	10.40	10.42	10.45	10.7	10.4	10.6		0.98	1.00	0.98	N/A
D8	11.99	11.96	12.03	12.02	12.4	12	12.1		0.97	1.00	0.99	N/A
D9	14.38	14.42	14.58	14.57	14.9	14.7	14.6		0.96	0.98	1.00	N/A
D10	22.56	22.54	22.93	22.93	22.9	23.2	22.1		0.99	0.97	1.04	N/A
Median	25840.97	26281.00	27697.44	28940.68	24618	25940	27984		1.05	1.01	0.99	N/A
Mean	29166.49	29723.63	31694.57	33078.73	27864	29714	31235		1.05	1.00	1.01	N/A
Gini	27.89	27.85	28.62	28.62	29.8	29.2	27.8		0.94	0.95	1.03	N/A
S80/S20	4.25	4.23	4.40		4.8	4.6	4.25		0.88	0.92	1.04	N/A

Table 4.10-Poverty rates by gender and age

	EUROMOD				External				Ratio			
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019
40% median HDI												
Total	4.64	4.54	4.96	4.82	6.1	5.2	5.1		0.76	0.87	0.97	N/A
Males	5.21	5.06	5.45	5.34	6.3	5.7	5.6		0.83	0.89	0.97	N/A
Females	4.11	4.06	4.50	4.33	5.8	4.7	4.6		0.71	0.86	0.98	N/A
50% median HDI												
Total	8.49	8.37	8.71	8.60	11.1	9.5	9		0.77	0.88	0.97	N/A
Males	9.08	8.96	9.13	9.06	11.3	9.9	9.4		0.80	0.90	0.97	N/A
Females	7.95	7.82	8.32	8.17	10.9	9	8.6		0.73	0.87	0.97	N/A
60% median HDI												
Total	13.86	13.82	14.50	14.55	17.3	15	14.8		0.80	0.92	0.98	N/A
Males	14.06	14.02	14.65	14.71	17.1	15.1	14.6		0.82	0.93	1.00	N/A
Females	13.67	13.63	14.36	14.40	17.4	14.9	15		0.79	0.91	0.96	N/A
70% median HDI												
Total	20.91	20.92	21.53		25.1	22.4	22.8		0.83	0.93	0.94	N/A
Males	20.82	20.85	21.23	21.04	24.6	22.1	22.1		0.85	0.94	0.96	N/A
Females	21.00	20.98	21.80	21.72	25.5	22.7	23.5		0.82	0.92	0.93	N/A
60% median HDI												
0-15 years	8.58	8.54	9.54	10.19	20.3	13.2	12.4		0.42	0.65	0.77	N/A
16-24 years	20.87	20.74	21.10	21.30	24.8	21	20.4		0.84	0.99	1.03	N/A
25-49 years	12.03	12.05	12.29	12.54	15.9	13.2	12.6		0.76	0.91	0.98	N/A
50-64 years	17.96	17.87	18.22	17.91	17.3	17.8	17.6		1.04	1.00	1.04	N/A
65+ years	13.76	13.70	15.67	15.03	12.8	13.8	15.5		1.08	0.99	1.01	N/A

Table 4.10-Minimum wage validation

	Baseline				Min Wage Incl.				Ratio			
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019
Equivalised disposable income	703177.30	716607.50	763592.30	797506.00	706955.70	721619.60	767974.40	802485.30	0.99	0.99	0.99	0.99
Employment income	574341.80	584247.70	646079.50	680936.60	579839.30	591842.60	652548.10	688341.30	0.99	0.99	0.99	0.99
Total income tax	58939.48	60524.46	67423.99	73258.72	59434.09	61235.97	67992.87	73954.12	0.99	0.99	0.99	0.99
Total employee social insurance contributions	76857.77	78293.71	86356.53	90774.31	77611.54	79334.97	87243.38	91789.57	0.99	0.99	0.99	0.99
Gini coeficient	27.89	27.85	28.62	28.62	27.66	27.57	28.39	28.38	1.01	1.01	1.01	1.01
Poverty rate (60% median HDI)	13.86	13.82	14.50	14.55	13.78	13.81	14.35	14.32	1.01	1.00	1.01	1.02