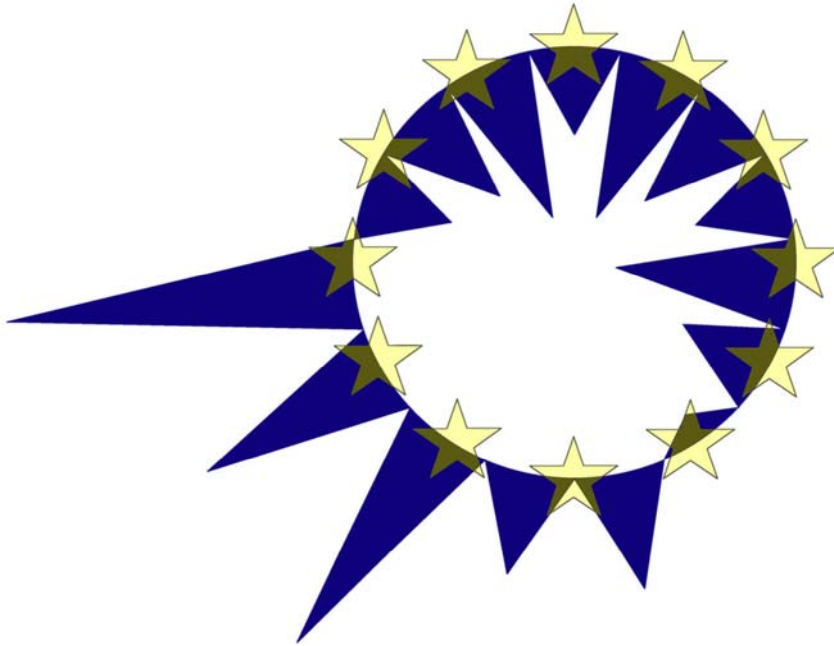


# **EUROMOD**

## **COUNTRY REPORT**



## **POLAND (2005)**

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**April 2007**



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## 1. BASIC INFORMATION

Basic information about tax and benefit system is presented below.

### 1.1 Basic figures

Poland is characterized by a large (about 38 millions) and young population with low life expectancy.

Table 1. Basic figures

	Pop. (m.)	Pop. < 18 (%) <sup>[1]</sup>	pop. ≥ 65 (%)	Life expect. (years)	Fertility rate	Unemp Rate	GDP per head (PPS) <sup>[2]</sup>	Currency Name	Exch. rate <sup>[3]</sup>
2005	38.17	22.4%	16.6%	75.1	1.24	17.7	51.0	Złoty	3.324
2006	38.14	22.1%	16.8%	75.3	1.27	13.8	52.9	Złoty	3.103 <sup>[4]</sup>

<sup>[1]</sup> Proportion of population aged 0-19 years; <sup>[2]</sup> EU-25=100; <sup>[3]</sup> Dollar exchange rate on 9th May.  
Source: Eurostat (2007)

### 1.2 The tax-benefit system

With large share of government expenditure social protection expenditure is on the average EU level. Transfers to old-age people constitute the largest share in total social expenditure.

Table 2. Tax-benefit system and government budget

	Total general government revenue <sup>[2]</sup> % of GDP	Total tax receipts <sup>[1]</sup> % of GDP	Total general government expenditure <sup>[2]</sup> % of GDP	Social protection <sup>[2]</sup> % of GDP
2003	38.4	34.9	44.6	20.6
2004	36.9	34.5	42.5	19.6

Source: OECD (2007); Eurostat (2007)

Table 3. Social protection expenditure by function (as % of total social protection expenditure)

	Sickness/ health care	Disability	Old age	Survivors	Family/ children	Unemployment	Housing	Social exclusion
2003	4.1	2.5	11.0	1.0	0.9	0.8	.	0.2
2004	3.8	2.3	10.8	1.0	0.9	0.7	.	0.2
2005	3.8	2.0	10.4	1.0	0.8	0.6	0.1	0.4

Source: Eurostat (2007)



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

	Personal income tax	Corporate income tax	Social security contributions		Taxes on goods and services (VAT)	Other taxes
			Employees*	Employers		
2004						
2005	21.7%.	10.7%.	.	.	59.4%.	8.2.

\* Includes self-employed

Source: Sprawozdanie z wykonania budżetu za 2005 rok, Ministerstwo Finansów, 2006

### 1.2.1 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 and some other charges like property taxes or “dog tax”, which is levied on the dog owners.
- The fiscal year runs from 1<sup>st</sup> of January to 31<sup>st</sup> of December. The family benefits allowance period runs from 1<sup>st</sup> September to 31<sup>st</sup> August of the following calendar year for which the right to family benefits is granted.
- The state pension age in 2005 was 65 years for men, and 60 years for women.
- The minimum schooling age is 16.
- Dependent children are defined as someone who is neither a parent nor married and:
  - a. aged 18 or less,
  - b. aged 25 or less and in full time education and living with his/her parents regardless of whether he/she is working or not;
  - c. aged 25 or less and in part time education and neither working nor registered as unemployed, and living with his or her parents.
- There is no definition of a single parent (lone parent) in the law.
- Spouses may tax their income jointly. They may pool their incomes and divide by two to determine the appropriate tax brackets. The same system applies to a lone parent and their child.
- Capital income is taxed at a flat rate (19%). Farmers pay agricultural tax that is based on farm size and land area quality. Self employment income may be taxed in one of three different ways, with more than 70% of the self-employed paying income tax according to the general progressive system.
- All individuals who earn an income need to file a tax return unless the only source of income is from a pension or if the individual is a farmer without non-farm work income.
- Social assistance benefit amounts are indexed to account for inflation. The indexation does not apply to taxes or family benefits.
- 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 an evaluation by the authority.



### 1.3 Social Benefits

Social security benefits in Poland can be divided into two main categories: **contributory** benefits and **non-contributory** benefits. Contributory benefits are earnings replacement benefits and pensions to which an individual is entitled if he/she meets certain conditions regarding work and/or health history. Non-contributory benefits may be means tested or non-means-tested and may also depend on contingencies such as disability or parenthood but without the requirement of previous contributions having been made.

#### II. National Insurance Benefits (contributory)

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

**Pre-retirement Benefits and Allowances (*zasilek przedemerytalny lub świadczenie przedemerytalne*):** payable to individuals who have the status of unemployed persons and satisfy specific requirements concerning age and length of employment.

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

**Family Pension (*renta rodzinna*):** [also called **survivor pension**] contributory benefit paid to eligible survivor(s) of a deceased person if the deceased met the contributory conditions.

**Maternity Benefits (*zasilek macierzyński*):** contributory benefit paid to a mother on the basis of her employment history; generally 100% of average monthly salary of the last 6 months for 16 weeks.

**Sickness Allowances (*zasilek chorobowy*):** payments for periods of incapacity for work caused by an illness, accident or isolation due to an infectious disease. Sickness allowances are payable to employees starting from the 34<sup>th</sup> day of incapacity for work (continuous or otherwise) in a calendar year. For the first 33 days of incapacitation, an employee retains the right to remuneration financed from the employer's resources or, in certain circumstances, from the Guaranteed Employee Benefit Fund.

**Rehabilitation Benefits (*świadczenie rehabilitacyjny*):** granted to an insured person who has exhausted his or her entitlement to the sickness allowances, 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.

**Compensatory Allowances (*zasilek wyrównawczy*):** granted to employees whose remuneration has been reduced as a result of occupational rehabilitation undertaken in order to adapt or retrain for a specific job.

**Care Allowances (*zasilek opiekuńczy*):** payable to persons who are unable to work, because they have to take care of a sick child of up to 14 years of age or, in some cases, of a healthy child of up to 8 years of age, or another sick member of the family. These allowances are only available to persons who are subject to mandatory sickness insurance.



**Funeral Grants (*zasilki pogrzebowe*):** paid under disability pension insurance on the death of an insured person, retiree, pensioner, or the recipient of a pre-retirement allowance or benefit and members of their families.

**Unemployment Benefits (*zasilek dla bezrobotnych*):** granted to the **unemployed**, conditional on previous contributory work requirements and active job search.

## II. Family Benefits and Social Assistance (non-contributory)

**Family Allowance (*zasilek rodzinny*):** a non-contributory means tested yearly grant to families that have a dependent child. In addition to the family allowance, the following supplements may also be granted:

- a) **Parental Leave Allowance** (*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.
- b) **Supplement for child birth** (*dodatek z tytułu urodzenia dziecka*): a one time lump sum grant paid upon the birth of a child.
- c) **Supplement for lone parents** (*dodatek z tytułu samotnego wychowywania dziecka*): The supplement paid to each lone parent eligible to the Family Allowance.
- d) **Supplement for lone parents who lost the right to unemployment benefit** (*dodatek z tytułu samotnego wychowywania dziecka i utraty prawa do zasiłku dla bezrobotnych*): supplement for bringing up a child alone and for the loss of the right to unemployment benefit due to the expiry of the statutory period of eligibility. Payable for a maximum period of 3 years until the child reaches the age of 7 years. The supplement is paid only to persons who obtained the grant before 1<sup>st</sup> September 2005 after which it was discontinued.
- e) **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 01.08.2005
- f) **Supplement for education and Rehabilitation of a Disabled Child Supplement** (*dodatek z tytułu wychowywania 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.
- g) **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.
- h) **Schooling Allowances Supplements:** includes supplements towards **starting the school year** and **supplements towards starting school outside the place of residence**.

**Nursing Allowance (*zasilek pielęgnacyjny*):** a benefit granted to a handicapped child, a handicapped person over 16 years of age who possesses a medical certificate confirming the degree



of disability or to a person who is over 75 years old. The benefit may also be granted to a person less than 16 years of age with a medical certificate if the disability occurred before the attainment of 21 years of age. The benefit is not granted to a person who is staying at an institution providing full time care if the services provided by the institution are financed by the state or the National Health Fund.

**Nursing Benefit (*świadczenie pielęgnacyjne*):** a means tested 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.

**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 years, or before attaining the age of 25 years, if the person concerned is still in education, e.g. at a tertiary educational institution, or in the course of doctoral or other 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 means of living while also meeting some specific social criteria. It is intended to benefit orphans, the disabled, unemployed, homeless, the chronically sick, expectant mothers and those generally in poverty. Rules and general guidelines are set at the national level but benefit amounts subject to the discretion of local office and resources. The benefit is non-taxable and may be thought of as a 'safety net'. There are three main elements of the Social Assistance system - Permanent Compensation Allowance, Temporary Social Allowance and Allowance in case of special circumstances.

- a) **Permanent Compensation Allowance (*zasilek stały*):** an allowance for 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 Allowance (*zasilek okresowy*):** a grant made to a household that is experiencing financial problems caused by unemployment, chronic illness(es), or disability and that have incomes lower than the Social Assistance threshold.
- c) **Special Circumstances Allowance (*zasilek celowy*):** an allowance paid in case of unforeseen event like a natural disaster

**Housing Benefits (*dodatek mieszkaniowy*):** a means tested non-contributory benefit granted to families based on the size of their home and number of people in a households. A local government has some discretion over of housing cost classification.

- ***Scope and scale***

Old-age pensions are the most important among social benefits. They are paid to 14.25% of population and their constitute of 48% of social benefit expenditure. Disability pensions account for 16.6% of social benefit expenditure. Social spending targeted for families are much less important. Family allowances are paid to 13.6% of population but their share in total social spending is only 2.1%. The role of social assistance is even smaller. It is paid to about 2% of population and its share in the expenditure is about 1%





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

	<b>2005</b>
Old-age pension	14,25%
Disability Pension	6,14%
Family Pension	3,63%
Unemployment Benefits	0,97%
Pre-retirement benefit	0,66%
Pre-retirement allowance	0,75%
Sickness Benefit	Nd
Rehabilitation benefits	0,06%
Funeral Benefits	0,76%
Social Pension	0,62%
Social Assistance	
Permanent social assistance	0,45%
Temporary social assistance	1,75%
Special Circumstances social assistance	0,03%
Family Allowance	13,60%
Supplement due to taking care of a child during child-care leave (parental leave allowance)	0,37%
Supplement for lone parents	1,90%
Supplement for large families	2,01%
Other supplements	2,68%
Nursing Allowance	1,68%
Nursing Benefit	0,19%
Housing Benefits	1,71%

Notes: Computed based on Chapter VII [Tables 1(199), 11(209)] Social Security Benefits, Statistical Yearbook of the Republic of Poland.

Source: [www.stat.gov.pl](http://www.stat.gov.pl)



Table 6. Social benefit: expenditure

Annual expenditure (currency)		2005
As % of total expenditure		
Old-age pension		48,49%
Disability Pension		16,62%
Family Pension		13,38%
Unemployment Benefits		1,68%
Pre-retirement benefis		1,54%
Pre-retirement allowance		2,49%
Maternity benefit		0,75%
Sickness Benefit*		4,78%
Care Benefit (opiekunicy)		0,14%
Compensatory allowances (wyrównawczy)		0,00%
Childbirth Benefit		0,00%
Funeral Benefit		1,05%
Rehabilitation benefits		0,24%
Family Allowance		2,12%
Supplement due to taking care of a child during child-		0,50%
Supplement for lone parents		1,15%
Supplement for large families		0,11%
Other supplements		0,63%
Nursing Allowance		0,83%
Nursing Benefit		0,26%
Social Pension		1,02%
Social Assistance		0,00%
Permanent social assistance		0,38%
Temporary social assistance		0,40%
Special Circumstances social assistance		0,42%
Housing Benefits		1,02%
<b>Total</b>		<b>100%</b>

Notes: \* includes amount paid from social security system.

Computed based on Chapter VII [Tables 1(199), 11(209)] Social Security Benefits, Statistical Yearbook of the Republic of Poland, and Statistical Yearbook of Social Insurance (non-agricultural system)

Source: [www.stat.gov.pl](http://www.stat.gov.pl)

- *Not strictly benefits*

**Sickness benefit (zasiłek chorobowy)** payable to employees by the employer for the first 33 days of sickness

#### 1.4 Social Contributions

There are separate social security systems for non-farmers and farmers. Social security contributions to non-farmers system are used to finance current *contributory benefits* as well as other *non-contributory benefits*. The contributions are made by both the employee and the employer 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 (FUS) that is part of Social Insurance Institution (Zakład Ubezpieczeń Społecznych - ZUS).



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

**Old-Age Pension Insurance** (*składka emerytalna*): this contribution is made in equal parts by employers and employees. 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*): contribution made in equal parts by both employers and employees. Contributions are also withheld from unemployment benefits.

**Sickness Insurance** (*składka chorobowa*): contribution made by employees to finance contributory sickness benefits. The self employed may contribute voluntarily.

**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.

**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.

- *Scope and scale*

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



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

	2004	2005
<b>Social contributions</b>		
Old-age Pension Insurance		27,8%
Pensions (disability pensions, survivors' pensions and death grants).		27,8%
Sickness Insurance		27,2%
Work Accident Insurance		27,2%
Fund of Guaranteed Employee Benefits		
Labour Fund (Unemployment)		27,2%
Health Insurance		59,8%
Farmers' insurances		4,1%

Notes: for farmers – number of insured (liczba ubezpieczonych)

Source: info from ZUS (Statistical Yearbook o Social Insurance (non-agricultural sector),) and KRUS (Kwartalna Informacja Statystyczna KRUS, IV kwartał 2005)

Table 8. Social contributions: revenue

	2006	2007
<b>Social contributions</b>		
	As % of total revenue	
Old-age Pension Insurance		30,3%
Disability and Survivors' pensions		27,1%
Sickness Insurance		4,4%
Work Accident Insurance		3,5%
Fund of Guaranteed Employee Benefits		5,6%
Labour Fund (Unemployment)		27,9%
Old-age and disability Insurance (farmers)		0,9%
Accident, sickness and maternity insurance (farmers)		0,4%

Source: : Statistical Yearbook o Social Insurance (non-agricultural sector), information from KRUS <http://www.zus.pl/files/english.pdf>

## 1.5 Taxes

The Polish direct tax system consists of 12 types of taxes. These include personal income tax, corporate income tax, gaming tax and real estate tax amongst others.

**Personal Income Tax** (*podatek dochodowy od osób fizycznych*): applies to individual incomes at a progressive rate. A couple or a single parent may file a joint tax return with their partners or children respectively. A single parent or a couple making a joint filing are allowed to tax only half of their taxable income while multiplying the tax due by two. Personal income tax however does not apply to incomes from agricultural activities or self employment income. Capital income such as incomes from investments, incomes from property rented out or interest earnings from saving deposited in a bank are taxed on a lump-sum basis.

**Agricultural Tax** (*podatek rolny*): incomes from agricultural activities are generally not subject to the personal income tax. Agricultural tax is levied on land classified in the Register of Lands and Buildings as agricultural arable lands or wooded lands. For the purposes of taxation, an agricultural farm is considered as an area exceeding 1 hectare or 1 *conversion* hectare.



**Real Estate Tax** (*podatek od nieruchomości*): applies to land, buildings, building structures and construction devices.

**Forestry Tax** (*podatek leśny*): levied on woodland classified by the register of land and building as forests, except for forests used for carrying out economic activities other than those connected with forestry.

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

**Lump sum tax on registered revenue** (*zryczałtowany podatek dochodowy od przychodów*): applied to selected registered revenue and may be paid by taxpayers who in a previous year raised revenue from an independent activity at the amount not exceeding 250,000 euro. Regardless of the revenue, the lump sum tax on registered revenue is levied on taxpayers who start performing a given activity in the tax year and are not taxed in the form of tax card.

**Tax on Goods and Services** (*podatek od dóbr i usług*): [value added tax (VAT)] is levied at a standard rate of 22% on most goods and services. Reduced rates of 7% and 3% apply to some categories of goods with the lower rate applying particularly to unprocessed or semi processed products of agriculture, forestry, hunting and fishery. A 0% preferential rate applies to exports, intra-community supply of goods, and supply of books and specialist periodicals.

**Gaming Tax** (*podatek od gier losowych*): Levied on revenues from activities related to the establishment and performance of games of chance and mutual bets. Rates range from a low of 2% for revenues from mutual bets on competition of animals to 45% for games in casinos and machine/video lotteries.

- *Scope and scale*

The following tables show the number of taxpayers and the composition of taxes, including social contributions, as a percentage of overall tax revenue.

Table 9. Taxes: taxpayers (as % of population)

	2005
<b>Direct taxes</b>	
Personal Income Tax	62,7%
Agricultural Income Tax	5,1%
Forestry Tax	nd
Tax Card and lump-sum revenue	1,7%
Gaming Tax	nd

Notes: nd – no data

Source: [http://www.stat.gov.pl/gus/45\\_1057\\_ENG\\_HTML.htm](http://www.stat.gov.pl/gus/45_1057_ENG_HTML.htm) , Informacja dotyczące rozliczenia podatku dochodowego od osób fizycznych, MF, 2006



Table 10. Taxes: Revenue

Annual revenue	2005	
	Millions of PLN	Share in %
<b>Direct taxes</b>	<b>41091,7</b>	<b>26,2%</b>
of which:		
Personal Income Tax	24423	59,4%
Agricultural Tax*	906,7	2,2%
Corporate Income Tax	15762	38,4%
<b>Indirect taxes</b>	<b>115672</b>	<b>73,8%</b>
of which:	75401	65,2%
VAT		
Excise Tax	39479	34,1%
Gaming Tax	792	0,7%
<b>Other Tax Revenue</b>	<b>2,3</b>	<b>0,0%</b>
<b>Total</b>	<b>156 766</b>	<b>100,0%</b>

Notes: \* information from the Ministry of Finance  
 Source: Statistical Yearbook of the Republic of Poland.

## 2. SIMULATION OF TAXES AND BENEFITS IN EUROMOD

### 2.1 Scope of simulation

In Table 11 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 12 taxes and social contributions are presented.

Table 11. Simulation of benefits in EUROMOD

	Variable name(s)	Treatment in Euromod	Why not fully simulated ?
		2005	
Old-age pension	copoa00	I	No data on contribution history
Disability Pension	copdi00	I	No data on contribution history
Survivor Pension: Widow Pension Orphan Pension	coPSUOR coPSUWD	I	No data on contribution history
Unemployment Benefits	co_BUN	PS	Eligibility and amount depend on contribution history. Simulation takes eligibility from data and amount is assumed to be the basic amount for all recipients.
Pre-retirement benefit and Pre-retirement allowance	coPYR	I	No data on contribution history
Maternity benefit	coBMA	I	No data on contribution history
Sickness Benefit	coBOT	I	No data on contribution history
Care Benefit	coBOT	I	No data on contribution history



Compensatory allowances	coBOT	I	No data on contribution history
Funeral Benefit	coBOT	I	No data on contribution history
Rehabilitation benefits	coBOT	I	No data on contribution history
Accident compensations	coBOT	I	No data on contribution history
Social Pension	coPDINW	I	No data on disability history
Family Allowance	co_BCH00	S	No data on contribution history
Supplement due to taking care of a child during child-care leave (parental leave allowance)	coBCHPL	I	No data on work history
Supplement for lone parents	co_bchlp00	S	
Supplement for lone parents due to lost a right to the unemployment		E	Very small benefit, no data on work history
Supplement for child birth	co_bchba	S	
Supplement for starting the school year	co_bched	S	
Supplement for education or rehabilitation of disabled child	co_bchdied	S	
Nursing Allowance	co_pdiuc	S	
Nursing Benefit	co_bchdi00	PS	Eligibility is taken from the data
Nursing Supplement	co_pdioacm	S	
Housing Benefits	co_bho	PS	Eligibility is taken from the data
Permanent social assistance	co_bsapm	S	
Temporary social assistance	co_bsatm	PS	Eligibility is based on the wealth test*
Special Circumstances social assistance		E	Not in data

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. (\*) details about the wealth test can be found in M.Myck “Mimicking an informal wealth test with a wealth-test model: SIMPL 2003 & 2005, SIMPL Technical Notes No.1, [www.simpl.pl](http://www.simpl.pl)

Table 12. Simulation of taxes and social contributions in EUROMOD

	Variable name(s)	Treatment in Euromod 2005	Why not fully simulated ?
Personal Income Tax	co_tin co_tkt	S	
Corporate Income Tax		E	
Agricultural Income Tax	co_tag	S	
Forestry Tax		E	No information available
Tax Card and lump-sum revenue		E	No information available*
Gaming Tax		E	No information available
Tax on Goods and Services – VAT		E	
Excise Duty		E	
Social Insurance Contributions			



Old-age insurance	co_tscepi co_tscerpi	PS	Amounts contributed by the central government from benefits are not taken into account
Disability insurance	co_tceedi co_tscerdi	PS	Amounts contributed by the central government from benefits are not taken into account
Sickness Insurance	co_tsceehl	PS	Voluntarily amounts are assumed not been paid
Work Accident Insurance	co_tscerac	PS	Amounts contributed by the central government from benefits are not taken into account
Fund of Guaranteed Employee Benefits	co_tscerei	S	
Labour Fund	co_tscerui	S	
Health Insurance	co_thl	PS	Amounts contributed by the central government from benefits are not taken into account

Notes: In the model it is assumed that all income from non-agricultural self-employment activities is taxed by the Personal Income Tax with progressive tax rates





## 2.2 Simulated policies and order of simulation

### 2.2.1 Simulated policies

Table 13. Simulated policies

Section	Policy	Description	Year		
			2005	2006	2007
	Ben_un_pl	BEN Unemployment Benefit	X		
2.4.1	Sic_ee_pj_pl	SIC Employee (permanent contract)	X		
2.4.1	Sic_er_pj_pl	SIC Employer (permanent contract)	X		
2.4.1	Sic_ee_tj_pl	SIC Employee (temporary contract)	X		
2.4.1	Sic_er_tj_pl	SIC Employer (temporary contract)	X		
2.4.2	Sic_fr_pl	SIC Farmer	X		
2.4.3	Sic_se_pl	SIC Self-employed	X		
2.4.1	Sic_ma_ee_pl	SIC Maternity Leave: “employee”	X		
2.4.1	Sic_ma_er_pl	SIC Maternity Leave: “employer”	X		
2.4.1	Sic_un_pl	SIC Unemployment benefit recipient	X		
2.6.3	Tax_kt_pl	TAX Tax on Capital Income	X		
2.5.4	Tax_it_tb_pl	TAX Income Tax Base	X		
2.4.4	Tax_hl_pl	TAX Health Insurance	X		
2.6.1	Tax_ag_pl	TAX Agricultural tax	X		
2.3.1	Pen_ns_pl	BEN Nursing Supplement	X		
2.3.2	Ben_na_pl	BEN Nursing Allowance	X		
2.3.3	Ben_fa_pl	BEN Family Allowance	X		
2.3.4	Ben_fas_pl	BEN Family Allowance Supplements	X		
2.3.5	Ben_nb_pl	BEN Nursing Benefit	X		
2.3.6	Ben_ho_pl	BEN Housing Benefit	X		
2.3.7	Ben_sa_pl	BEN Social Assistance	X		

### 2.2.2 Order of simulation

The means-tested benefits, Family Allowance with supplements, Nursing Benefits, Housing Benefits and Social Assistance all depend on net incomes after income tax due, employee social security contributions and health insurance contribution are deducted. They are therefore simulated after the simulation of income taxes and social security contributions.

Table 14. EUROMOD Spine: order of simulation, [2005]

Policy	Description	Main output
ben_un_pl	BEN Unemployment Benefit	co_bun
sic_ee_pj_pl	SIC Employee (permanent contract)	co_tscee
sic_er_pj_pl	SIC Employer (permanent contract)	co_tscer
sic_ee_tj_pl	SIC Employee (temporary contract)	co_tscee
sic_er_tj_pl	SIC Employer (temporary contract)	co_tscer
sic_fr_pl	SIC Farmer	co_tscfr
sic_se_pl	SIC Self-employed	co_tscse
sic_ma_ee_pl	SIC Maternity Leave: “employee”	co_tscmaee
sic_ma_er_pl	SIC Maternity Leave: “employer”	co_tscmaer
sic_un_pl	SIC Unemployment benefit recipient	co_tscun
tax_kt_pl	TAX Tax on Capital Income	co_tkt
tax_hl_mx_pl	TAX Maximum Health Insurance Tax	co_thlmx
tax_it_tb_pl	TAX Income Tax Base	co_tintb



tax_it_it_pl	TAX Income Tax: Individual Taxation	co_tinit
tax_it_jt_pl	TAX Income Tax: Joint Taxation	co_tinjt
tax_it_pl	TAX Income Tax: Optimisation	co_tin
tax_hl_pl	TAX Health Insurance	co_thl
tax_ag_pl	TAX Agricultural tax	co_tag
ben_inc_pl	BEN Farmers imputed income	co_yagiv
pen_ns_pl	BEN Nursing Supplement	co_pdioacm
ben_na_pl	BEN Nursing Allowance	co_pdiuc
ben_fa_pl	BEN Family Allowance	co_bch00
ben_fas_pl	BEN Family Allowance Supplements	co_bchba
ben_nb_pl	BEN Nursing Benefit	co_bchdi00
ben_ho_pl	BEN Housing Benefit	co_bho
ben_sa_pl	SIC Employer (permanent contract)	co_bsapm

## 2.3 Social benefits

### 2.3.1 Nursing Supplement (co\_pdioac)

The benefit is paid to old-age, disability or widow insurance pensioner who are aged 75+ or with severe disability

#### Definitions

The unit of analysis is an individual. This is not means-tested benefit.

#### Eligibility conditions

All pensioners in age 75 and more or those with severe disability.

#### Income test

No income test

#### Benefit amount

Year	2005
------	------

Amount	144
--------	-----

Note: PLN per month

### 2.3.2 Nursing allowance (co\_pdiuc)

#### Definitions

The unit of analysis is an individual. If the person entitled is a child, the benefit is paid to a parent/tutor

#### Eligibility

It is a universal (not contributory not means-tested) 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 (c.f., section 2.3.1)



### Income test

This allowance is not means-tested.

### Benefit amount

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
Amount	144								

Note: PLN per month

## 2.3.3 Family allowance (co\_bch00)

### Definitions

This is an income-tested child benefit that requires the presence of dependent children in a family

### Eligibility

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

### Income test

The benefit is means-tested over the previous year using personal tax form. Net income (net of social security contributions, health insurance contributions and income tax payments) per capita must be below a threshold [1] that is larger if there is a disable child in a family [2].

The income test for farmers is applied on imputed income equal to the number of converted hectares times an amount [3].

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
[1]	504								
[2]	583								
[3]	194								

Note: PLN per month

### Benefit amount

Amount per child is different according to the number of children. The amount for a first and a second child [1] is lower than for the third [53] which is also lower than for the fourth and subsequent children.

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
[1]	43								
[2]	53								
[3]	66								

Note: PLN per month



### 2.3.4 Supplements to family allowance

- ***Supplement for child birth (co\_bchba)***

Definitions

Lump-sum amount for the birth or adoption of a child.

Eligibility

Child aged 0 years.

Income test

Income test the same as for the Family Allowance

Benefit amount

One time payment per eligible child. [1].

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
[1]	500								

Note: one time PLN

- ***Supplement for starting school year (co\_bched)***

Definitions

Lump sum amount payable once in September, for each child in primary and secondary school (we assume here for each child in education below 16).

Eligibility

Children aged under 16 and in education.

Income test

Income test the same as for the Family Allowance

Benefit amount

One time payment per eligible child [1].

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
[1]	90								

Note: one time PLN

- ***Supplement for education or rehabilitation of disabled child (co\_bchdied)***

Definitions

For families with a child below 16 or 24 if he/she is in education and with moderate or severe degree of disability.



### Eligibility

Disabled child aged below 24 years.

### Income test

Income test as for the Family Allowance

### Benefit amount

Amounts are different per disabled child aged below 5 years [1], per disabled child aged between 5 and 16 years [2] or between 17 and 24 [3].

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
[1]	50								
[2]	70								
[3]	70								

Note: PLN per month

- ***Supplement for lone parents, as of 30.06.2005 (co\_bchlp00)***

### Definitions

For a lone parent taking care of a child.

### Eligibility

A lone parent eligible for the Family Allowance. May not be combined with a social pension for a child.

### Income test

As for the family allowance

### Benefit amount

Payment per child [1], larger if disable child [2].

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
[1]	170								
[2]	250								

Note: PLN per month

## **2.3.5 Nursing benefit (co\_berchdi)**

### Definitions

Means-tested benefit for parents voluntarily on leave to take care of a disabled child and not receiving unemployment benefit or pre-retirement pension.

### Eligibility

This benefit is granted to parents (single parent or in couple) voluntarily on leave, who were not receiving unemployment benefit or pre-retirement pension and took care of disabled children.



### Income test

It is means-tested, with an upper threshold of family income fixed at 1.5 times the SA threshold.

### Benefit amount

Fixed amount independently of the number of disabled children [1].

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
[1]	420								

Note: PLN per month

## 2.3.6 Housing benefit (co\_bho)

### Definitions

Family or household level benefit in order to cover housing expenditures. Expenses include rent and other housing related bills (gas, electricity, heating, water, etc.). The authorities use imputed rent and expenses in their computations of eligibility, rather than actual values provided by the household. Imputed rent corresponds to at most the maximum level of local municipal rent.

### Eligibility

This is an income-tested benefit with extra restrictions on the size of the flat. The size limit for a 1 person household is 35 m<sup>2</sup>. 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

	The size of the flat	The extended size of the flat
1 person	35 m <sup>2</sup>	+ 30% = 45,5 m <sup>2</sup>
2 people	40 m <sup>2</sup>	+ 30% = 52 m <sup>2</sup>
3 people	45 m <sup>2</sup>	+ 30% = 58,5 m <sup>2</sup>
4 people	55 m <sup>2</sup>	+ 30% = 71,5 m <sup>2</sup>
5 people	65 m <sup>2</sup>	+ 30% = 84,5 m <sup>2</sup>
(5+n) people	65 m <sup>2</sup> +n*5 m <sup>2</sup>	+ 30% = 84,5 m <sup>2</sup> +(n*30%*5) m <sup>2</sup>

### Income test

To qualify for the housing income per capita must be below 125% of the Minimum Pension [1] 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.

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
[1]	562.58								

Note: PLN per month



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:

$$HB = E - k*( Y_{HB}) \tag{4}$$

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

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

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

**2.3.7 Permanent Social Assistance (co\_bsapm)**

Definitions

The permanent allowance (zasiłek stały) is a specific permanent Social Assistance allowance for a person unable to work due to disability or age, who is not entitled to a social insurance invalidity pension.

Eligibility

To be eligible one must have disability of significant or moderate degree or unable to work due to age, whereby the age limit is 60 for women and 65 for men. Per capita income must be below 418 pln [1] for one person household and 316 pln [2] for more than one person household.

Income test

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

Benefit amount

The amount corresponds to the difference between a threshold and total household income.

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
[1]	418								
[2]	316								

Note: PLN per month

The amount of permanent allowance may not be lower than 30 PLN.



### 2.3.8 Temporary Social Assistance (co\_bsاتم = co\_bsاتمفنا + co\_bsاتمفم)

#### Definitions

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

#### Eligibility

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

#### Income test

The income concept is as for the Permanent Social Assistance

#### Benefit amount

The amount corresponds to the difference between a threshold and total household income with a threshold calculated as for the permanent social assistance.

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
[1]	418								
[2]	316								

Note: PLN per month

#### Comment

The Central Government is obliged to pay 20% [1] of due amount in case of multi-person household and 30% [2] in a case of single-person household (co\_bsاتمفنا) while the rest may be paid by the local government. In the model it is assumed that local government pays 7% [3] of its due (co\_bsاتمفم).

The model allows to choose between the effective amount (co\_bsاتمفنا+ co\_bsاتمفم) and the entitled amount (co\_bsاتم)

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
[1]	20%								
[2]	30%								
[3]	7%								

## 2.4 Social contributions

### 2.4.1 Employee social contributions

Income Base





Social security contributions are paid by the employer and by the employee, according to the rate schedules described below. All rates are applied to the same income base, which is gross income, defined as:

gross income = net income + IT + HI + employee part of SS contributions

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. The total cost to the employer is therefore gross income plus the employer's part of social contributions.

Incomes from temporary labour contracts may or may not be included in the social security income base. With minor exceptions, a temporary job income is excluded from the SSC income base if the job is performed in addition to a permanent job and it is performed for a different employer than the permanent job. Due to the lack of detailed data, all temporary work incomes earned in addition to permanent work incomes are excluded from the social security income base. Some forms of labour incomes, such as compensation of corporate supervisory board members, are excluded from the SSC income base, even though they are part of the gross income for the purpose of income tax. The old-age pension insurance and for 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, determined by the state and published in the state budget. It was equal to 72,690 PLN in 2005.

Title of social security contribution	Employee rate (%)	Employer rate (%)	Income base limit (annual)
Old-age pension insurance	9.76	9.76	72690 PLN
Disability insurance	6.5	6.5	72690 PLN
Sickness Insurance	2.45	---	no limit
Work accident insurance (average)	---	1.93	no limit
Labour Fund	---	2.45	no limit
Fund of Guaranteed Employee Benefits	---	0.15	no limit

The work accident insurance rates depend on the type of work and range from 0.97% to 3.86%, the median rate of 1.93% is assumed in the model.

#### 2.4.2 Social contributions for farmers

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. 1582000 persons were insured according to KRUS principles in 2005, and they paid the following monthly amounts of contributions, per person in PLN:



	1st quarter	2nd quarter	3rd quarter	4th quarter
Old-age pension and disability insurance	42.2	42.2	42.2	42.2
Work accident, sickness and maternity insurance	15	15	18	18

### 2.4.3 Self-employed social contributions

The rates of SSCs for self-employed (entrepreneurs) are the sum of the rates for employee and employer. However, 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 in the previous quarter, which is published with a 2-month delay. The second difference is that the sickness insurance for self-employed is voluntary. Exact data on income base declarations and sickness insurance participation is not available. However, virtually all self-employed minimize their SSC contributions by declaring the minimum income base and by opting out of the sickness insurance. We therefore assume that the self-employed SSC's are the lump-sum amounts based on the minimum declared income base and no sickness insurance. In the year 2005 these **monthly** amounts were (in PLN):

	Jan-Feb	Mar-May	Jun-Aug	Sep-Nov	Dec	Annual
Minimum income base	1361.96	1443.28	1449.27	1391.12	1408.34	16983.27
Old-age pension insurance	265.85	281.73	282.9	271.55	274.91	3315.15
Disability insurance	177.05	187.63	188.41	180.85	183.08	2207.85
Sickness Insurance	0	0	0	0	0	0
Work accident insurance (1.93%)	26.29	27.86	27.97	26.85	27.18	327.8
Labour Fund	33.37	35.36	35.51	34.08	34.50	416.09

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

### 2.4.4 Other social contributions (if applicable)

#### Health Insurance (HI)

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.

HI contributions are considered social security contributions, however, they are calculated according to different principles. 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

The rate of HI contributions was 8.5% of the HI income base. However, 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 (about 91.2% of HI dues) are deducted from the calculated IT dues. In other words:

if the calculated IT dues are lower than 7.75% of the HI income base, then the actual HI dues are equal to the calculated IT dues, and the actual IT becomes null,



if the calculated IT dues exceed 7.75% of the HI income base, but does not exceed 8.5% 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 8.5% of the HI income base, then the actual HI dues are equal to 8.5% 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)

### Health Insurance for self-employed (HI)

The self-employed pay the HI contributions according to the same rates and IT deduction rules as above. 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 the previous quarter in the non-government sector, instead of 60% of the overall average monthly gross income in the previous quarter], 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. The amounts of HI income base limits, the lump-sum dues, and the IT-deductible amounts for 2005 are given in the table below:

	Jan-Feb	Mar-May	Jun-Aug	Sep-Nov	Dec	Annual
HI income base limit	1822.13	1910.99	1818.93	1852.73	1871.73	9276.51
HI dues	154.8	162.4	154.6	157.4	159.1	788.3
IT-deductible dues	141.2	148.1	141	143.6	145.1	718.9

The HI contributions on social security benefits and for most farmers are covered by the state budget. Only those who conduct special activities in agriculture contribute to the health insurance.

## 2.5 Personal income tax

The main tax simulated for Poland is the personal income tax. It is the most comprehensive direct tax in the Polish tax code. Over 24 million people filed a tax return in 2005. With a working age population of about 31 million, this corresponds to a coverage of personal income taxation of 78%. Personal Income Tax receipts amounted to 42.2 billion in 2005 i.e. about 21.7% of all tax revenues.

### 2.5.1 Tax unit

Personal income tax in Poland is an individual. However, couples (as well as single parents together with one of their children), 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 would fall into different income brackets if they filed separately. If one of the persons has no income or almost no income in a given year, they benefit from joint filing by claiming two universal tax credits, as described below.

### 2.5.2 Exemptions

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

- non-contributory benefits (social assistance, family benefits and housing benefits, social pensions,
- disability pensions for war veterans,



- student scholarships,
- alimonies.

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.

### 2.5.3 Tax allowances

In 2005, the list of tax allowances was short, and included:

- revenue costs,
- charitable donations,
- housing loan (mortgage) interest,
- medical rehabilitation expenses,
- Internet access expenses.

All of the above are subject to certain limits. Only the revenue costs and the the Internet allowance are included in the model and described below, due to the lack of data on the other allowances take-up.

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 increased to 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 works 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 in 2005, in PLN.

	One job	More than one job
All jobs within the residence area	1227	1841
Job(s) outside of the residence area	1534	2301

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

### 2.5.4 Tax base

The tax base is net 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 the income tax in the manner described in the 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.



### 2.5.5 Tax schedule

The tax schedule for 2005 is progressive, as in the table below:

Bracket number	Lower limit	Upper limit	Rate
1	0	37024	19%
2	37024	74048	30%
3	74048	-	40%

### 2.5.6 Tax credits

Three types of tax credits were deductible from the tax liability in 2005:

- universal tax credit: each taxpayer may deduct 530.08 PLN per year from his tax dues. This tax credit is equivalent to a tax-free income bracket between 0 and 2789.90 PLN (0 tax is paid on annual taxable incomes below 2789.90 PLN),
- part of health insurance (7.75% of the HI income base, as described in the section above),
- housing tax credits, acquired before 2005: due to lack of take-up data, this credit is excluded from the model.

## 2.6 Other taxes

### 2.6.1 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”, determined on the basis of the land area, the type and class of arable land, as well as buildings used to obtain agricultural incomes. The **annual** rate of the tax amounts to the pecuniary equivalent of 2.5 quintals of rye per 1 conversion hectare of farm land and 5 quintals of rye per non-farm land. The pecuniary equivalent is based on the average purchase price of rye for the first three quarters of the year preceding the tax year, and for the purpose of 2005 tax year it was 37.67 PLN for 1 quintal of rye. We do include agricultural tax in our model, since our data contains information on the conversion hectares.

### 2.6.2 Income tax for self-employed

Instead of being taxed according to the general personal income tax rules with progressive tax rates, most self-employed can choose to be taxed according to a flat tax rate of 19%. 261 thousand taxpayers had chosen this taxation regime in 2005. However, with the flat rate taxation the taxpayer loses to 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 more than 80% 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.

### 2.6.3 Income tax on capital gains

Capital gains, such as the gains from savings accounts, mutual funds and stock exchange, are taxed according to a 19% flat rate, with no allowances or deductions. [For stock exchange, the tax base are net gains].

### 2.6.4 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.

### 3. DATA

#### 3.1 General description

The Polish database is drawn from the Household Budget Survey (Badanie Budżetów Gospodarstw Domowych) that is a cross-sectional survey and is conducted throughout the year. The HBS includes information on income and expenditures. Work and replacement incomes are given on individual level. The HBS is the primary source for income distribution analysis. The other household survey available in Poland is the EU-SILC, which was conducted in 2005 for the first time. However, the micro-data from this survey is not available.

The HBS is based on a random sample that accounted for 107 024 individuals living in 34 767 households. The sampling frame for the HBS in Poland is the Central Statistical Office mailing address database. There are three minor groups of people that are excluded from the survey. These groups are (i) individuals in long-term care institutions, (ii) prisoners, (iii) students in boarding schools or student dorms. This explains small discrepancy between the grossed up population figure (38,096,226 individuals) and the official population statistics (38,174,000) for the year 2005. This limitation of the sample will mean that taxes and benefits and other income components will be under-represented to the extent that they are received (or paid) by people living in institutions. A household is defined as a group of persons living together and sharing their incomes and expenditures.

The adopted sampling scheme was a geographically stratified two-stage procedure, with different selection probability at the first stage. The sampling units for the first stage were the area survey points and those for the second stage were dwellings. The BBGD2005 was collected with the use of the monthly rotation method. An one twelfth of the sample (about 2916 hh) was surveyed in every month of the calendar year (January to December).

Non-participation of the households selected for HBS is a significant problem. The replacement of selected households not participating in the survey was introduced. Being randomly selected, the household which replaces a non-participating one does not have to represent the same socio-demographic traits (e.g. it may have a different personal structure or source of maintenance). The method of random replacement of households – in the case of non-response – consists of taking of households in order from the randomly arranged set. The procedure is carried out until households from two dwellings in each area survey unit (at least one household per dwelling) agree to participate in the survey.



Table 15. EUROMOD database description

	Year	...
	2005	
EUROMOD database		
Original name	BBGD	
Provider	GUS	
Year of collection	2005	
Period of collection	Jan-Dec	
Income reference period	2005	
Sampling	Random, stratified	
Unit of assessment	Household	
Coverage	Private households	
Sample size	34 767	
Response rate	55%*	

Notes:

## 3.2 Sample quality and weights

### 3.2.1 Non-response

In 2005 the non-response rate was 44.8% of households selected and of those which participated in the survey in the corresponding month of 2004. In total, the non-response rate amounted to 28.7% of retired persons' households, 26.8 % of households living on unearned sources, 21.1% of employees' households, 21.0% of self-employed persons' households, 18.7% of pensioners' households and 15.3% of farmers' households.

Among the households selected to enter the survey for the first time in 2005 the non-response rate was 53.8%. The highest non-participation rates were observed in the group of households of retirees (34.7%), ranking down to employees' households (23.6%), households of the self-employed (22.7%), pensioners' households (22.0%), and households of persons living on unearned sources (18.2%). The lowest non-response rates were indicated among farmers' households (18.1%).

Refusals (subjective reasons) proved to be the most frequent cause – 31.1%. The rates varied according to the socio-economic group from 9.8% for the households of pensioners to 19.8% for households of the self-employed. Temporary absence (objective reasons) was also a very significant reason for non-participation for all the households (10.9%). In the case of pensioners and retirees age or illness provided an important reason for non-participation. In this group of households selected for the survey, 13.9% of retirees' households and 9.9% of pensioners' households did not participate in the survey for these reasons.

### 3.2.2 Weights

The original dataset consisted on 34 767 households with 107 024 individuals. The final EUROMOD dataset has 34 692. No re-weighting was performed. The weights provided by the CSO are grossing-up weights.

Table 16. Descriptive Statistics of the Grossing-up weight

	Weight	...
Number	34 767	
Mean	383.4845	
Median	365.25	
Maximum	882.5	





Minimum	214.5
Max/Min	4,11
Decile 1	250.5
Decile 9	595.25
Dec 9 / Dec1	2,38

---

### 3.2.3 Item non-response and under-reporting

Information about income and expenditure (monetary and non-monetary) of each household participating in the survey is based on the “Budget Diary” filled in by the household during two weeks. During the next two weeks of the same month the household keeps records of its income and expenditure in the second diary.

Each family records in its diary all income obtained by the household in the month of the survey as well as from a private farm or self-employment, which were utilized to satisfy the household's needs. An additional source of information is provided by a questionnaire known as “Household’s Statistical Sheet”.

### 3.3 Data adjustment

Data adjustments include some minor cleaning - that is done to make sure that the households and relationships of individuals within households, are coherent (for example, that young children do not appear as living alone).

### 3.4 Imputations and assumptions

#### 3.4.1 Time period

Information on earnings refers to the month in which the survey was conducted. There is no information about how many times a particular income was paid over the year.

#### Gross incomes

Work income (permanent employment, temporary employment, self-employment) and replacement income (old-age pension, disability pension, family pension) are reported as net income. Due to monthly income tax allowance system and limits on old-age and pension contributions there is no fixed correspondence of net and gross wages for each month. The same amount of gross wage may lead to different values of net wages in different months.

The net-to-gross conversion was conducted by a conditional backward calculations. The following cases were considered:

I. income from permanent contract:

1. lone person or two earner couple,
2. a one-earner couple with permanent contract only,

II. income from temporary contract:

1. no permanent contract
2. combining with permanent contract

III. income from self-employment





1. one-earner couple
2. two-earner couple

IV. income from old-age pension, disability pension and family pension

For each case a conversion table showing a sequence of monthly net wages derived from a fixed gross wage was constructed. In the second stage the closest gross income for given net value and month was searched.

**3.4.2 Other imputed variables**

**Income from farming**

Farmers’ income in the database is imputed by the regression model in order to overcome the problem of seasonality. The measure of average household income is:

$$Finc_i = \frac{\sum_{m=1}^{12} \hat{\beta}' X_{i,m}}{12}$$

where  $\hat{\beta}$  are the estimated coefficients from the equation, and  $X_{i,m}$ , are characteristics of household  $i$  in month  $m$ . The final specification of the farm income equation included a polynomial for farm size, interaction of farm size and farm size-squared with month of interview, and interaction of a farm size polynomial with regional dummies.

**3.5 Updating**

No need to update incomes as survey data and policies are from the same year (2005).

Table 17. Updating factors

Index	Income Source/index type	Year1- year2	Year1- year3	...

Notes:



## 4. VALIDATION

### 4.1 Aggregate Validation

A few obstacles make validation particularly difficult. These are:

1. different income definitions in the HBS and in the tax law make it difficult to choose the right official statistic for validation purpose,
2. one month reporting in the HBS – a household reports income only for a given month and there is no information about number of months for which an income is received,
3. no information about households that refused to participate in the survey leads to a selection problem; one may expect that rich households are under-represented in the data. It is also known that households in villages are less willing to participate in the survey,
4. it is commonly accepted that people reveal their investment and property income with reluctance.

#### **permanent income (coYEMPJ)**

The number of permanent employees is estimated correctly. The mean gross wage is 11.2% lower than the administrative value what is acceptable.

#### **temporary income (coYEMTJ)**

A simulation of temporary income is done under the assumption that each reporting person obtains such income for 12 months. This leads to good simulation of the number of recipients but significantly underestimates the mean revenue. The possible explanation comes from a fact that the official value is based on tax records statistics from the Ministry of Finance considering privately conducted activities net of social security contributions. The amount of social security contribution is imputed from the National Insurance Institution Information, which probably causes an over-estimation of the gross amount. Intuitively, the “official average” of about 1800 PLN is highly overestimated while the average obtained in EUROMOD – 699 PLN – seems much more sensible.

#### **self-employment income from business activities (coYSEBS)**

The number of recipients is simulated correctly. The total revenue is difficult to validate due to lack of the official statistics. Similarly to temporary income, the official value for non-agricultural self-employment income is derived from the amount net of social security contributions as reported by the Ministry of Finance and the imputed value for social security contributions on the basis of information from the National Insurance Institutions. The total value is significantly overestimated. One month reporting together with the assumption of receiving this income for 12 months may be responsible for this.

#### **self-employment income from agricultural activities (coYSEAG)**

The number of farmers' households is underestimated by 20%. The official statistics are for the year 2002. We may expect a lower official number for 2005. There is no data about income from agricultural activity that may fit into the HBS.



### investment income (coYIY)

Information on investment income collected in the HBS does not fit the official data. The variable used in EUROMOD is defined as “interest and profit from company ownership”. This includes interest on bank loans and capital gains from shares and bonds. Capital income tax is paid at the source (by the bank). According to the information from the Ministry of Finance, capital income tax paid on banking loans in 2005 was 1.26 mln PLN. The number of taxpayers is unknown. The tax from capital gains was paid in 2005 by 0.25 million taxpayers. This tax is also paid at the source but it is reported in the annual income tax statement by taxpayers. An amount paid in 2005 was 770 mln PLN, what gives an monthly average of 255.3 PLN.

According to the HBS there were about 0.033 million household who reported investment income of 14.88 mln PLN in 2005. The number of income recipients is extremely low compared with the official data. This partly due to the one-month reporting in the HBS. Annual income statement must be delivered by the end of April, which is revealed in the HBS by higher fraction of positive answers in March and April. Interest on some bonds are paid at the end of each quarter, which should lead to a higher fraction in March, June, September and December. This is confirmed by the data with 13.2% share for April and December and 10.6% fraction for March and 8.9% for June.

However, we believe that the main reason is the measurement error due to income not reporting, together with the selection problem.

### private transfers - maintenance payment (coYPTMP)

Private alimony for children is not taxable income. There is no official data.

### property income (coYPR)

The number of rent income recipient is underestimated by 23%. Plausible explanation is a unwillingness of respondents to reveal information in a questionnaire. Selection may also be a part of the problem, since households with income from rent are relatively rich. The fact that income is observed for one month only, may influence the result if payments are done on a bi-monthly or a quarterly basis.

### Main private transfers (coYPT00)

This is a composite variable consisting of “gifts” and “gifts for a farm”. There is no official data on it.

Table 18. Euromod validation: sources of original income

	Recipients/Payers (mln)			Mean Expenditure/Revenue (PLN /month)			Total	
	Euromod	SIMPL (%)	Official (%)	Euromod	SIMPL (%)	Official (%)	SIMPL (%)	Official (%)
<i>Employment income</i>								
permanent	9.64	100.4	101.0	1 933	99.6	88.8	99.9	89.7
temporary	0.81	101.1	87.7	699	99.9	38.9	101.0	33.8
self- employment	2.85	92.3	98.3	2 132	107.2	x	99.0	x
business	1.42	99.7	107.1	2 586	100.3	216.3	100.0	231.6
agriculture	1.44	86.1	90.9	1 684	113.2	x	97.5	x
<i>Non-employment income</i>								
investment	0.03	nc	13.4	428	57.7	167.5	96.5	23.2
private	0.33	98.7	x	454	101.5	x	100.2	X
maintenance								



property	0.19	nc	64.4	430	56.2	117.2	99.5	75.8
main private transfers	2.34	X	x	364	x	x	X	X

Notes: nc – not comparable with SIMPL, included on different levels

Sources: Statistical Yearbook of Social Insurance 2003-2005 (non-agricultural sector), Social Insurance Institution (ZUS); Statistical Yearbook 2006, Central Statistical Office; Demographic Yearbook 2005, Central Statistical Office; Statistical Yearbook of Agriculture and Rural Areas, Central Statistical Office (GUS), information from Social Insurance Institution, the Ministry of Finance (MF), the Ministry of Economy (MG).

#### 4.1.1 Non simulated taxes and benefits

The table 19 compares statistics on benefits that are not simulated by EUROMOD with external sources. This provides an assessment of the quality of the database. It calculates the ratio of EUROMOD results to estimates from administrative statistics and from the country specific microsimulation model SIMPL.

There is no administrative data for *scholarship* that might be used for comparison. Scholarship income in the HBS combines payment from the Ministry of Education, local authorities and non-public school that have significant discretion over the scholarship granting rules.

A *Maternity Benefit* was paid in 2005 for 96 or 122 days depending whether the benefit was given for the first or the second and consecutive child. The HBS gives us information only about part of women who get the benefit since in the HBS2005 a household is observed only for one month. For example - one twelfth of households in 2005 gave information in January. This means that probability of having information about getting the benefit by a women who was receiving it from January to March was either about 26% (=96/365) or 33% (=122/365). A number of recipients in the dataset is 29 124 and an expected number is between about 87 000 and about 111 000 .

The only available official value is a number of days for which the Social Insurance Institution paid the benefit – 1.97 million days per month – and an average monthly amount of 1275 PLN. This gives about 65 000 benefits paid from non-agricultural social security system. This together with 39 000 benefits paid to farmers gives overall number of 104 000. This number lies between limits derived for the model.

Even though we are not able to present either a fully credible official statistics or a robust value from the model, we are convinced that the model gives correct results for a number of maternity benefit recipients. The higher average is caused by low fraction of maternity benefits paid from the Agricultural Social Insurance Institution (KRUS).

The number of recipients of *Retirement Pension* is correctly estimated (6% too many). The average value is very close to the administrative value (overestimation by 3%). Also the amounts for *Pre-retirement Pension* are close to the administrative values. The number of recipients is overestimated by 5% while the average amount just 1.2% below the official value.

The number of *Invalidity Pension* recipients is estimated correctly. The mean expenditure is under-estimated by 15%.

In case of *Survivor Pension (Family Pension)* both the number of recipients and the mean expenditures are underestimated by 12% and 20% respectively.

*Parental leave allowance* is a supplement to the Family Allowance. Eligibility is based on a work history which is not observable in the HBS. All supplements to the Family Allowances are under-estimated in the HBS. The possible reason is the one-month observation schedule,



causing significant under-estimation of a number of recipients in January and September. The mean expenditure is overestimated by 7%.

Table 19. EUROMOD validation: taxes and benefits included but not simulated, [2005]

	Recipients/Payers (mln)			Mean Expenditure/Revenue (PLN /month)			Total	
	Euromod	SIMPL (%)	Official (%)	Euromod	SIMPL (%)	Official (%)	SIMPL (%)	Official (%)
Scholarship	0.20	x	x	297	x	x	x	x
Maternity benefits	0.10	86.3	92.4	1 370	136.4	134.4	117.7	124.1
Retirement pension	5.77	99.8	106.0	1 221	99.9	102.9	99.8	109.1
Pre-retirement pension	0.57	100.0	104.9	828	99.9	98.8	99.9	103.6
Invalidity pension	2.31	100.1	98.7	746	99.9	84.5	100.1	83.5
Survivor pension	1.23	105.1	88.5	885	98.4	79.9	103.4	70.7
Parental leave allowance	0.11	x	81.5	431	x	106.8	x	87.0

Notes: Parental leave allowance is not compared to SIMPL since the benefit is simulated (calibrated) in SIMPL.

Sources: Statistical Yearbook of Social Insurance 2003-2005 (non-agricultural sector), Social Insurance Institution (ZUS); Statistical Yearbook 2006, Central Statistical Office; Demographic Yearbook 2005, Central Statistical Office (GUS).

#### 4.1.2 Simulated income tax

Table 20. EUROMOD validation: income tax, [2005]

	Taxpayers (mln)			Mean revenue (PLN /month)		
	Euromod	SIMPL (%)	Official (%)	Euromod	SIMPL (%)	Official (%)
Progressive income tax	19.67	103.0	84.5	134.47	103.6	109.1
Agriculture tax (yearly)	1.96	x	100.1	611.68	x	129.8
Health Insurance	17.59	92.2	88.3	125.62	105.5	96.6
Capital Income tax	0.04	x	14.5	0.07	x	29.3

Notes:

Sources: Official data from the Ministry of Finance

A high fraction of workers reporting very low income explains the lower number of income tax payers. An overestimation of low-base taxpayers is expected, since it is assumed that the reported income is retained over the whole year. The same argument explains the lower number of health insurance contributors.

The number of agricultural tax payers is correctly simulated. The mean amount is about 30% above the official value. This is due to local authority discretion to lower the tax, which we omit in the model



### 4.1.3 Simulated social contributions

Table 21. Euromod validation: social contributions, [2005]

	Recipients/Payers (mln)			Mean Expenditure/Revenue (PLN/month)			Total	
	Euromod	SIMPL (%)	Official (%)	Euromod	SIMPL (%)	Official (%)	SIMPL (%)	Official (%)
<b>Employees' SIC</b>								
Permanent work	9.64	99.8	101.9	348	100.0	94.3	99.9	96.1
Temporary work	0.54	90.1	163.8	112	103.7	44.1	93.4	72.3
Farmer*	1.39	x	117.1	76.3	x	100.9	x	1.73
Self-employment	1.28	x	111.4	507	x	149.4	101.3	166.4
Maternity replacement	0.10	92.0	101.2	223	84.5	131.0	77.8	132.7
Unemployed	0.40	113.5	106.8	126	52.2	51.3	59.3	54.7
<b>Employers' SSC</b>								
Permanent work	10.18	97.8	102.8	375	101.7	93.1	99.5	95.7
Permanent work	9.64	100.4	101.4	388	99.7	94.9	100.0	96.2
Temporary work	0.54	90.1	180.2	144	132.6	51.3	119.4	92.4
Maternity replacement	0.03	26.5	29.1	223	76.6	117.2	20.3	34.1

Notes: The number "1.39" considers contributors which are farmers. A number of individuals covered by farmer's social security is 2.72 mln that includes family members.

Sources: information from National Insurance Institution

Social Security Contributions from *Permanent Employment* are simulated correctly. A 2% difference in the number of recipients and 6% in the mean amount are satisfactory.

The number of contributors in *Temporary Income* is significant larger in EUROMOD than the administrative data suggest. There are at least two reasons for this. An assumption that each person reporting this income was receiving it for 12 months is the first reason. Imperfect identification of individuals, who do not pay social security contributions on temporary income is the second one. There were 0.92 mln individuals having this type of income in 2005 (table 18). However, only 0.33 millions contributed to the social security system. In the model the respective numbers are: 0.81 mln and 0.54 mln. The smaller difference may come from an under-representation of people who combine temporary income with permanent income, in the dataset.

The number of farmers contributing to Farmer's Social Contribution Fund is over-simulated by 17% and the mean contribution is simulated correctly.

The number of contributors from *self-employment income* is over-simulated by 11%. According to the official data 1.15 mln self-employed contributed to the social security system out of the 1.42 mln self-employed (table 18). The simulated difference is smaller – 1.4 mln and 1.28 mln. This may be explained by an under-representation of the self-employed who also receive permanent income and by the social security contribution evasion. The mean contribution is over-simulated by 50%, which is consistent with the higher revenue presented in table 18.

The number of payers of social security contributions to the *maternity replacement* is simulated correctly. The mean value is over-simulated by about 30% as a consequence of the difference in



income amounts. Since the maternity benefit is observed for only 86 households, the selection problem may also play an important role.

#### 4.1.4 Simulated social benefits

Table 22 shows comparison of Euromod outcomes against the national model SIMPL and the official/administrative data. Overall results are quite satisfactory.

The number of children who get a family allowance is overestimated by 24.2%. This is a reasonable result since non-take up is not taken into consideration in the simulation. Numbers of recipients of a supplement for child birth and a supplement for education and rehabilitation of disabled child are overestimated despite the underestimation of the number of family allowance recipients. Few individuals claiming a supplement for child birth in the model may be partly explained by the one-month observation in the HBS.

The official numbers of recipients of the supplements are based on an estimation (or guesstimation) by the Ministry of Labor and Social Policy. The value for a child birth supplement is 0.3 mln and 0.256 mln for supplement for education and rehabilitation of disabled child. These values include recipients who got a benefit through the Social Insurance Institution and those who got it from their employer. According to the information from the Social Insurance Institution the child birth supplement in 2005 was paid to 0.198 mln people and the other one to 0.186 mln. The model values lie between these values. Too many recipients of the supplement for starting school and the supplement for lone parent are the effect of too many recipients of family allowance in the model.

Mean amounts for the family allowance and supplements are simulated correctly. The differences between the model and the official values are less than 3% except the supplement for education and rehabilitation of disabled child for which the model mean is 6% above the official value. This comes from a slight overrepresentation of disabled children in age above 5 year in the dataset.

Complementary retirement pension was paid to people aged 75 and above who got an old-age pension or disability pension. One should expect an insignificant share of disability pensioner among complementary retirement pension recipients. The official number of holders is imputed from an information about pensioners in age 75 and above. Higher official number may be partially explain by a fraction of old-age pensioners living in hospital or care institutions.

Table 22. EUROMOD validation: Family Benefits, 2005

	Recipients/Payers (mln)			Mean Expenditure/Revenue (PLN/month)			Total	
	Euromod	SIMPL (%)	Official (%)	Euromod	SIMPL (%)	Official (%)	SIMPL (%)	Official (%)
Family Allowance	6.54	106.2	124.4	46.07	101.8	96.9	126.6	102.9
Supplements for:								
child birth	0.23	111.3	89.9*	41.56	98.2	97.0	88.3	107.9
education and rehabilitation of disabled child	0.24	118.0	78.6*	69.44	104.2	106.8	81.9	126.0
starting school	3.37	103.0	112.2	7.50	107.1	98.1	120.3	101.0
lone parent	0.87	x	122.2	174.02	98.4	X	120.2	x





Nursing allowance	0.66	93.2	103.4	148.79	102.4	103.6	105.9	96.5
Nursing supplement	1.12	x	68.7	144	x	x	x	x

Notes: \* based on estimation by the Ministry of Labour and Social Policy

Sources: Information from the Ministry of Labour and Social Policy, Statistical Yearbook of Poland.

Both housing benefit and social assistance are prone to non-take up. Eligibility for the housing benefit is taken from the data. For these households mean value of the housing benefit is 36% above the official value. The number of permanent assistance recipients is overestimated significantly, by 62.5% and the mean value is overestimated by 27%. Results for temporary social assistance are more accurate. The number is underestimated by 12% and the mean expenditure is overestimated by 13%.

Table 23. EUROMOD validation: Housing Benefit and Social Assistance, 2005

	Recipients/Payers			Mean Expenditure/Revenue			Total		
	Euromod (millions)	SIMPL %	Official %	Euromod (pln)	SIMPL %	Official %	Euromod (mln pln)	SIMPL %	Official %
Housing benefit*	0.64	40.0	84.2	183.20	139.1	135.6	117.97	55.6	114.2
Social Assistance									
Permanent	0.28	174.0	162.5	318.90	73.9	126.9	88.77	128.7	206.2
Temporary**	0.27	89.1	87.9	167.58	116.9	112.7	44.82	104.2	99.0

Notes: \* eligibility from data, \*\* calibrated through a wealth test

Sources: Information from the Ministry of Labour and Social Policy, Statistical Yearbook of Poland.

## 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.

The primary data source for calculation of poverty rates in Poland is the Household Budget Survey. The official rates, calculated by the Central Statistical Office, are the following expenditure-based rates<sup>1</sup>:

- Minimum subsistence-level income rate - fraction of people who lived in households having expenditures per capita below the minimum level of 397 pln - 12.3% in 2005
- Statutory poverty rate - fraction of people who lived in households with expenditures per capita below the Social Assistance income threshold of 461 pln – 18% in 2005
- Subjective poverty rates - fraction of people who lived in households with expenditures per capita below the 50 of average expenditures per capita – 18% in 2005

The rates based on equivalent disposable income estimated from EU-SILC data for 2004 were published only recently.

<sup>1</sup> Warunki życia ludności w latach 2004-2005, GUS, Warszawa 2007.





#### 4.2.1 Poverty

The simulated poverty rates in EUROMOD were calculated for `std_dispY` variable. They are compared with the equivalent income from the HBS2005. There is a noticeable difference between the results based on the HBS and the ones obtained from EU-SILC, which show higher poverty. The reason for this is unknown, since the CSO has not yet revealed individual data from EU-SILC. One possible explanation may come from the difference in income concepts used in the surveys.

Table 24. EUROMOD validation: poverty rates at different poverty lines, [2005]

percentage of individuals below:	Euromod	External source		Ratio	
		HBS 2005	EU-SILC 2004	HBS 2005	EU-SILC 2004
40% of median equivalent income	6,0%	6,4%	9,0%	94,0%	66,3%
Males	6,2%	6,6%		94,8%	
Females	5,5%	5,8%		94,1%	
50% of median equivalent income	11,3%	11,6%	15,0%	97,4%	75,3%
Males	11,9%	12,2%		97,6%	
Females	10,5%	10,8%		97,6%	
60% of median equivalent income	18,4%	18,9%	21,0%	97,3%	87,4%
Males	19,9%	20,4%	21,0%	97,8%	94,8%
Females	17,5%	17,9%	20,0%	97,8%	87,6%
70% of median equivalent income	26,7%	27,1%	28,0%	98,7%	95,4%
Males	29,5%	29,8%		99,1%	
Females	26,0%	26,2%		99,1%	

Notes: Computed for individuals according to their household disposable income (HDI) equivalised by the “modified OECD” equivalence scale. HDI are calculated as the sum of all income sources of all household members net of income tax and social insurance contributions.

\* Own calculation based on the HBS2005

Sources: own calculations and „Warunki życia ludności w latach 2004-2005”, GUS, Warszawa 2007

Table 25. EUROMOD validation: poverty rates by age groups, [2005]

Percentage of individuals below:	EUROMOD	External source		Ratio
		HBS2005	EU-SILC 2004	
Population	18.4	18.8	21.0	0.87
children (0-17)	24.39	25.13	29.0	0.84
18-24	20.67	21.88	26.0	0.80
25-49	19.15	19.60	21.0	0.91
50-64	13.99	14.73	16.0	0.87
65-	7.97	6.94	7.0	1.14

Notes: Computed for individuals according to their household disposable income (HDI) equivalised by the “modified OECD” equivalence scale. HDI are calculated as the sum of all income sources of all household members net of income tax and social insurance contributions.

Sources: own calculations and „Warunki życia ludności w latach 2004-2005”, GUS, Warszawa 2007

#### 4.2.2 Income inequality

Both Euromod and the HBS show less income inequality than EU-SILC.



Table 26. EUROMOD validation: income inequality, [2005]

percentage of individuals below:	Euromod	External source		Ratio		
		HBS 2005	EU-SILC 2004	HBS 2005	EU-SILC 2004	
Gini Coefficient	0,3267	0,3223	0,3600	101%	91%	
Income quintile ratio (S80/S20)	5,4915	5,2832		104%		
Decile Points/average income per decile/Lorenz curve/etc.						
	1	320,51	354,86	313,75	90%	102%
	2	565,66	570,25	454,00	99%	125%
	3	698,19	704,01	561,25	99%	124%
	4	815,38	820,83	674,75	99%	121%
	5	930,42	936,53	789,25	99%	118%
	6	1 056,42	1 062,39	911,67	99%	116%
	7	1 207,03	1 213,15	1 063,25	99%	114%
	8	1 407,09	1 413,21	1 294,50	100%	109%
	9	1 730,78	1 738,60	1 710,42	100%	101%
	10	3 135,64	3 148,94		100%	
Mean income (equivalised)	1 186,65	1 158,19		102%		
Median income (equivalised)	991,37	997,40		99%		
Mean income (unequivalised)	775,60	903,17	733,83	86%	106%	

Notes: Computed for individuals according to their household disposable income (HDI) equivalised by the “modified OECD” equivalence scale. HDI are calculated as the sum of all income sources of all household members net of income tax and social insurance contributions.

Sources: own calculations and „Warunki życia ludności w latach 2004-2005”, GUS, Warszawa 2007

#### 4.3 Summary of “healthy warnings”

- The sample is large. It covers about 0.25% of population
- The detailed method of constructing weights is unknown.
- Observing incomes only for a month makes it difficult to conclude on the annual average income.
- There is an underrepresentation of people with high income
- The information on permanent work income, old-age pensions and disability pensions are reliable, while the information about investment and rent income is significantly under-reported.
- The income sources included in the HBS do not fit the typology used in the official statistics published by the Ministries, the National Insurance Institution and the Central Statistical Office. This makes validation almost impossible in some cases (self-employment income, temporary income, scholarships)
- There are some facts arising from using EUROMOD, which are surprising but not improbable. These are: the large fraction of people living on farms who are not reported to Farmers’ Social Security Institution, the large fraction of self-employed who do not pay



social security contribution, the large non-take up of the housing benefit and the family allowance.

- Income from agricultural activities is very difficult to estimate using the HBS data. The simulation of agricultural tax is also uncertain due to the discretion of local authorities over its amount.

## 5. REFERENCES

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Rocznik Statystyczny Rolnictwa i obszarów wiejskich 2005 (Statistical Yearbook of Agriculture and Rural Areas 2005), GUS, 2006

## 6. SOURCES FOR TAX-BENEFIT DESCRIPTIONS/RULES

On-line legislation (in Polish)

<http://isip.sejm.gov.pl/prawo/index.html>