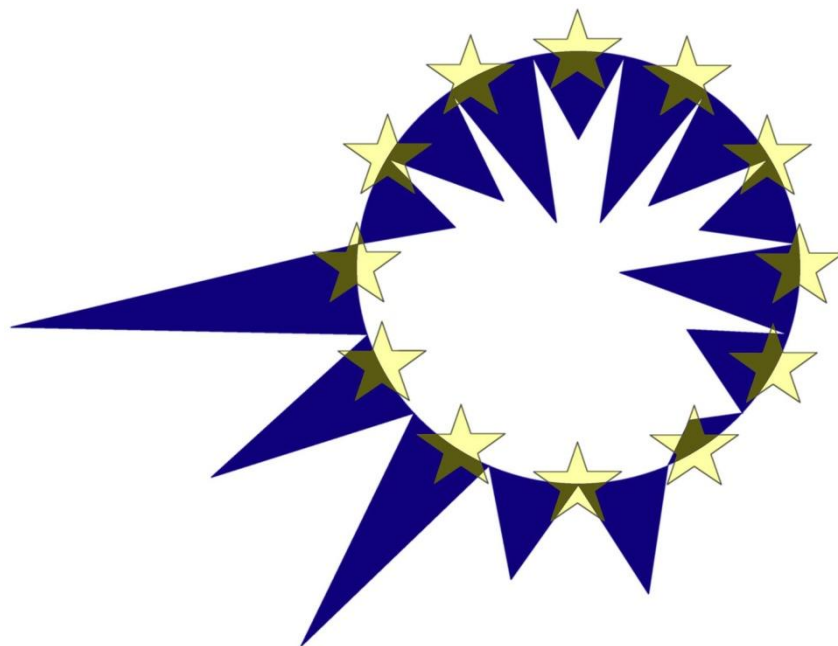


EUROMOD

COUNTRY REPORT



BULGARIA (BG)

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

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

This report documents the work done in one annual update for Germany. 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 F6.0. EUROMOD is continually being improved and the results presented here may not match those that would be obtained with later versions of EUROMOD.

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

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This programme is managed by the Directorate-General for Employment, social affairs and equal opportunities of the European Commission. It was established to finally support the implementation of the objectives of the European Union in the employment and social affairs area, as set out in the Social Agenda, and thereby contribute to the achievement of the Lisbon Strategy goals in these fields.

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

PROGRESS mission is to strengthen the EU contribution in support of Member States' commitment. PROGRESS is instrumental in providing analysis and policy advice on PROGRESS policy areas; monitoring and reporting on the implementation of EU legislation and policies in PROGRESS policy areas; promoting policy transfer, learning and support among Member States on EU objectives and priorities; and relaying the views of the stakeholders and society at large

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



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1. BASIC INFORMATION

1.1 Basic figures

Table 1.1 Basic figures

	Annual average popul. (mln.) ^[2]	Pop. < 18 (%) ^[2]	Pop. ≥ 65 (%) ^[2]	Life Expect. (years) ^[1] m / f	Fertility rate ^[2]	Unemp. rate ^[2]	GDP per cap. (PPS) ^[1]	Currency Name	exch. rate ^[2]
2007	7.660	17.1	17.3	69.5/76.7	1.42	6.9	10,000	BGN	1.95583
2008	7.623	16.9	17.4	69.8/77.0	1.48	5.6	10,900	BGN	1.95583
2009	7.585	16.9	17.5	70.1/77.4	1.57	6.8	10,400	BGN	1.95583
2010	7.534	16.8	17.7	n.a.	1.49	10.2	10,600	BGN	1.95583

Sources: ^[1] Eurostat Statistics Database (<http://epp.eurostat.ec.europa.eu>), November 2011.

^[2] National Statistical Institute (<http://www.nsi.bg>), November 2011.

The period 2007-2010 can be characterised by a persistence of the adverse demographic trend established during the market transition period, both in respect of the number and the structure of Bulgarian population. Similar tendencies are observed in some other European countries but in Bulgaria it is found to be quite unfavourable. The total number of population decreased annually by 41.8 thousand (or by 0.55%) on average during the studied period. In the same time the ageing of population became more intensive where the permanent increase in the share of population aged over 65 induced gradual overburdening of the state pension system.

After the stable growth during the EU accession period (2001-2006) and the first years of EU membership Bulgarian economy has been affected by the global crisis. Unemployment rate has increased in 2009-2010 and the GDP per capita has stagnated at the end of the decade. There are still controversial attitudes toward the economic and social effects of the Currency Board regime (by fixing the national currency exchange rate to the Euro) introduced in 1997 after the inflation crisis and bank system collapse during the mid-1990s.

1.2 The tax-benefit system

1.2.1 Basic figures about the tax-benefit system

Table 1.2.1 Tax-benefit system and government budget

	Total General Government revenue (% of GDP)	Total tax receipts (% of GDP)	Total General Government expenditure (% of GDP)	Social protection (% of GDP)
2007	38.0	32.1	36.7	15.2
2008	37.8	32.0	36.5	15.5
2009	34.7	29.5	37.6	17.2
2010	31.7	27.0	38.0	17.9

Source: Ministry of Finance (2011), Data on the Consolidated Fiscal Program 1998-2010, Expenditures by Function (Health Care, Social Security, Social Support and Caretaking) (<http://www.minfin.bg/en/statistics/13>, last accessed on 07.11.2011)



Table 1.2.2 Social protection expenditure by function (as % of total social protection expenditure)

	Sickness/ health care	Disability	Old age	Survivors	Family/ children	Unemployment	Housing	Social exclusion
2007	27.07	8.28	46.84	4.64	8.65	2.01	0.02	2.49
2008	29.49	7.71	45.03	4.46	8.69	2.31	0.03	2.30
2009	23.54	8.32	46.76	5.02	11.96	3.14	0.04	1.23
2010	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Eurostat (2011). Social benefits by function, % of total benefits (last accessed on 07.11.2011)
<http://epp.eurostat.ec.europa.eu/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tps00106&language=en>

Table 1.2.3 Taxation (as % of total tax receipts)

	Personal income tax (D51A)	Corporate income tax (D51B)	Social security contributions		Taxes on goods and services (D21)	Other taxes
			Employees* (D6112+D6113)	Employers (D6111)		
2007	9.31	12.42	7.83	16.81	49.24	4.39
2008	8.70	9.19	9.31	15.11	53.04	4.65
2009	9.78	8.15	10.70	16.19	50.75	4.43
2010	10.12	6.48	9.39	16.61	52.97	4.43

* Includes self-employed.

Source: NSI (2011), Taxes and Social Contributions by Type and Sub-sectors of General Government
<http://www.nsi.bg/otrasalen.php?otr=40>, last accessed on 07.11.2011).

Bulgarian tax system can be characterized as predominantly consumption-based with the VAT being the main source of revenues for the central budget. The tax revenues structure of the consolidated General Government budget (central and local budgets) for the period 2007-2010 shows that indirect taxes provide over the half of the total revenues, taxes on income about 18-19%, and social insurance contribution – about one fourth of total tax receipts. The PIT and corporate profit tax shares reveal slightly diverging trends with a notable decrease of the corporate tax revenues. Put together, the shares of direct income taxation revenues show a tendency to decrease as compared to the share of social insurance contributions.

1.2.2 Basic information about the tax-benefit system

- The Bulgarian tax-benefit system is largely a unified national system. The Consolidated National Budget has three major components: the budget of the central government (Republican Budget), the budget of the Social Insurance Funds, and the summary budget of the local governments (or Municipal Budgets). The parameters of the main taxes (VAT, corporate tax, personal income tax (PIT), and social insurance contributions (SIC)) are determined by legal acts of the National Parliament and the respective revenues are collected by the central government. Under some regulation, the local taxes are set by the local governments (Municipal Councils) but the revenues from these taxes have insignificant shares in the overall tax burden. Social transfers are set and administered by agencies of the central government and there are not any significant benefits that are provided by the local governments

- The fiscal year for taxes and benefits runs from 1st of January to 31st of December. The start of the calendar year is usually the moment when changes in tax-benefit regimes apply.

- According to the Code on Social Insurance (Кодекс за социално осигуряване) the standard retirement age in 2007 was 59 years of age for women and 63 years for men. However,



the right to an old-age pension occurs if two conditions are fulfilled at the same time: (1) the age of the person should not be lower than the standard retirement age, and (2) the sum of the age and the length of insurance period in years of that person should be at least equal to a certain threshold (see section 1.3).

- The general definition for a child used for tax and/or benefit purposes is introduced by the Child Protection Law (Закон за защита на детето) which stipulates that “child” is each person until reaching 18 years of age. However, for social protection purposes a broader definition for a “dependent child” is used, namely, an individual less than age 18 or not older than 20 if still enrolled in the educational system. “Lone parent” is defined as a person who, due to widowhood, divorce or non-marriage, takes care alone for dependent children. “Family” is defined as the spouses and all their dependent children (own or adopted).

- Bulgarian PIT system is based on the taxation of the individual, with the spouses being assessed independently. After subtracting the tax exemptions from the annual tax base and applying all legal deductions the personal income tax amount for 2007 was calculated using a progressive tax rates schedule. Since 1st of January 2008 a flat income tax rate of 10% was introduced in Bulgaria.

- The period of taxation with PIT covers one fiscal year. Each individual with taxable income is obliged to submit a Tax Declaration regulated by the Personal Income Tax Act (Закон за данъка върху дохода на физическите лица) usually till the end of April the following year. There is an important exclusion for this duty – it applies to any individual that has received income *only* from employment relations on Labour Contract.

- In Bulgarian tax-benefit system all social insurance and social assistance benefits *are not taxable*.

- There is no systematic statutory indexation of tax schedules and benefit levels to inflation in general in Bulgaria. However, the inflation is taken into account for pension levels revision. According to the Code on Social Insurance pensions granted before December 31st of the preceding year should be indexed as of 1st July each year with a percentage obtained as a sum of 50% of the CPI and 50% of the increase of the mean contributory income for the previous year.

- The absolute amounts of the family benefits are determined annually in the Law on the State Budget of the Republic of Bulgaria (Закон за държавния бюджет на Република България) so that they should not be lower than the levels in the previous year. Regarding the social assistance benefits, the benefit size is determined on the basis of the amount of the Guaranteed Minimum Income (GMI). The GMI amount is determined by the Council of Ministers.

- The practices of income assessment for means-testing vary. For example, monthly social assistance benefits are granted after the assessment of the applicants’ past income from the last month. The family allowances are granted considering the applicants’ income for the last 12 months. In some other cases, the right to a benefit depends on assessment of the current incomes.

1.3 Social Benefits

1.3.1 Relevant definitions

According to the Public Education Law (Закон за народната просвета) school attendance is compulsory for all children until reaching 16 years of age. However, this definition does not correspond to the definition of “dependent children” to be used for tax and/or benefit purposes. The definition of child, used for tax and/or benefit purposes, is introduced by the Child Protection Law (Закон за закрила на детето). This law stipulates that “child” is each person until reaching 18 years of age. However, the different legislative acts in social protection field use broader definitions for dependent children (see table 1.3.1).



Table 1.3.1 Definitions for a child

Legislative act	Definitions
Social Assistance Law (Закон за социално подпомагане)	<p><u>Dependent child:</u> A child or an adult if still enrolled in the educational system, but not older than age 20.</p> <p><u>Orphan child:</u> A child whose parent is deceased (one or both).</p> <p><u>Child with permanent disability:</u> A child with a reduced capacity of 50% or more.</p>
Law on Family Allowances for Children (Закон за семейни помощи за деца)	<p><u>Dependent child:</u> A child or an adult if still enrolled in the educational system, but not older than age 20.</p>
Law on Integration of Persons with Disabilities (Закон за интеграция на хората с увреждания)	<p><u>Child with permanent disability:</u> A child with a reduced capacity of 50% or more.</p>
Ordinance on Pensions and Length of Insurance (Наредба за пенсияте и осигурителния стаж)	<p><u>Children:</u> (1) all children less than 18 years of age, who are not married; (2) all children of age 18 years or more, who are not married, do not have any sources of income, and have a reduced working capacity.</p>

Other definitions for tax-benefit purposes are applied:

- **“Family”** shall mean: the spouses, all children less than 18 years of age, and all adults if enrolled in the educational system but not older than 20 years of age. This definition is used in all legislative acts dealing with different types of financial support with the exception of:

1) Law on Integration of Persons with Disabilities – according to this Law, “family” shall mean spouses and all children less than 18 years of age;

2) Ordinance on Pensions and Length of Insurance – according to this Ordinance, “family” shall mean spouses, all children less than 18 years of age if not married, and all children above that age if having a reduced working capacity (i.e. they can be both sick or disabled), do not have any incomes and are not married.

- **“Lone parent”** shall mean: a person who, due to widowhood, divorce or non-marriage, takes care alone for children less than 18 years of age and/or adults enrolled in the educational system but not older than 20 years of age.

- **“Mothers of many children”** shall mean: mothers who gave birth (or have adopted) and bring up three or more children above 1 year of age.

- **“Person with permanent disability”** shall mean: a person with a reduced working capacity of 50% or more.

1.3.2 Unemployment Benefits

Unemployment benefit (*Обезщетение за безработица*): it is a contributory benefit provided to the unemployed, only if the person became unemployed involuntarily and is actively searching for a job. The beneficiary should not be entitled to an old-age pension and should not undertake an economic activity requiring compulsory social insurance. Furthermore, since the benefit is contributory it is granted if the unemployed person has been insured for *at least 9 months during the last 15 months* before the termination of the employment. The duration of the benefit is between 4 and 12 months depending on the length of the contribution history of the individual.



The amount of the benefit is determined as 60% of the contributory income for the last 9 months and should not be lower than a fixed minimum and maximum amount, namely BGN 90 and BGN 180 per month in 2007. In 2008, the amounts were BGN 100 and BGN 180.

In 2009 a change in the mechanism for calculating the minimum and maximum amount of the benefit was introduced. As of 1 January 2009, those amounts are calculated per day and not per month. In 2009, the minimum amount was BGN 6 and the maximum amount was BGN 12. Moreover, as a temporary rule for the period from 01.01.2009 to 31.12.2009, the amount of the unemployment benefit was provided unevenly, as follows: 130% of the benefit level – for the first half of the period for which the benefit can be received, 70% of the benefit level – for the second half of the period. That transitional rule was adopted as a response to the economic crisis to stimulate the unemployed persons to find a job as quick as possible and not to rely too long on the social security system.

Since July 1st 2010 the practice of determining a maximum amount of the unemployment benefit has been abolished. The amount of the unemployment benefit is determined as 60% of the contributory income, but it should not be lower than a given minimum amount.

Benefit for long-term unemployment (*Обезщетение за дълготрайна безработица*): it is a non-contributory benefit for the long-term unemployed not older than 60 years of age (men) or 57.5 years of age (women) who do not receive any type of pension. The benefit is conditional on active job search.

In order to acquire a right to this benefit, the person should have been unemployed for at least 12 months. Moreover, the sum of the years of contributory history and the years of age of the claimant should be lower than the one necessary for acquiring a right to a pension for insurance and old age, but the difference should be up to 5 years. The other condition is that the person should not exercise any type of activity requiring compulsory social insurance.

The amount of the benefit in 2007 was BGN 90 per month (see “*Unemployment benefit*” for the years 2008-2010). It can be paid for maximum 30 months and it could be received only once in a life-time.

1.3.3 Sickness Benefits

Cash benefit for sickness due to general disease (*Парично обезщетение за временна неработоспособност поради общо заболяване*): it is a contributory benefit granted upon a medical referral and under the condition that the person has been insured for at least 6 months. The amount of the benefit is equal to 80% of the contributory income for the last 6 months.

The benefit for the first day of the temporary incapacity should be paid by the employer (but for a maximum of 15 calendar days per year). Since July 1st 2010 the employer is obliged to pay for the first four days of the temporary incapacity – in that case, the amount of the benefit shall not be higher than 70% of the contributory income for the first four days and 80% afterwards. In any case, the daily amount of the benefit cannot be higher than the daily net remuneration for the same period. The duration of the payment of the benefit is not limited.

Cash benefit for sickness due to an employment injury or occupational disease (*Парично обезщетение за временна неработоспособност поради трудова злополука или професионална болест*): it is a contributory benefit granted upon a medical referral. Notwithstanding that the benefit is contributory, no qualification period is required. The amount of the benefit is 90% of the contributory income for the last 6 months. The benefit for the 1st day of the temporary incapacity should be paid by the employer (but for maximum of 15 calendar days per year).

Since 01.07.2010 the employer has been obliged to pay for the first four days of the temporary incapacity. In that case, the amount of the benefit should not be higher than 70% of the contributory income for the first four days and 80% afterwards.



The daily amount of the benefit cannot be higher than the daily net remuneration for the same period. The duration of the payment of the benefit is not limited.

Cash benefit for the quarantine (*Обезщетение поради карантина или отстраняване от работа*): it is a contributory benefit granted upon a medical referral. Benefit is paid for the time during which the insured person is under quarantine or suspended from work, and only in case that the insured person cannot be reassigned to other suitable work during that time (but for no more than 90 calendar days during one calendar year).

The entitlement conditions and the amounts of the benefits are the same as for the cash benefit due to general disease, i.e. 6 months minimum period of insurance and 80% of the daily amount of the contributory income for the last 6 months.

Cash benefit for sanatorium treatment (*Обезщетение за санаторно-курортно лечение*): it is a contributory benefit granted upon a medical referral. Cash sickness benefit shall be paid for the whole stay in the sanatorium including up to three calendar days for travel. The daily amount of the benefit is 80% of the average daily contributory income for the last 6 months of insurance preceding the occurrence of the risk (90% if the reduced working capacity is due to employment injury or occupational disease). No qualifying period is required. The daily amount cannot exceed the average daily net remuneration of the individual for the assessment period.

Cash benefit for caring for a sick family member (*Обезщетение за гледане на болен член от семейството*): it is a contributory benefit granted upon a medical referral. The daily amount of the benefit is 80% of the average contributory income for the last 6 months of insurance preceding the occurrence the risk. The daily amount cannot exceed the average daily net remuneration for that period. The benefit is paid:

- for taking care of a sick family member of age 18 or more – up to 10 days per calendar year per insured person;
- for taking care of a sick family member less than age 18 – up to 60 days per calendar year as a total for all insured members of the family; this 60-days period does not include the time spent for children covered by the situations listed below;
- for taking care of a child under quarantine less than age 18 – until the expiry of the term of the quarantine;
- for taking care of a sick child up to 3 years of age who is hospitalized together with the insured person – for the time during which the insured has been in the hospital;
- for taking care of a healthy child returned from a child-care establishment due to quarantine – until the termination of the quarantine.

Cash benefit for reassignment (*Обезщетение за трудоустрояване*): it is a contributory benefit paid upon a medical referral. It is paid to insured persons having been reassigned to a lower paid job because of temporary work incapacity. The benefit is equal to the difference between the average daily earnings received in the 6 months prior to reassignment and the daily wage after reassignment. The benefit is paid for the duration of reassignment but for no more than 6 calendar months. There are no earnings ceilings or maximum amounts of benefit. In order to acquire a right to that benefit, the claimant should have at least 6 months of insurance.

1.3.4 Maternity Benefits and Family Allowances

Cash benefit in case of reassignment due to pregnancy and breast-feeding (*Обезщетение при трудоустрояване поради бременност или кърмене*): this is a contributory benefit granted to pregnant women and mothers upon a medical referral. The benefit is paid if the woman has been reassigned to another workplace due to pregnancy or breast-feeding. In order to become eligible to that benefit, the woman shall be insured against the sickness and maternity risks.



The amount of the benefit is equal to the difference between her new daily earnings and her previous average earnings for the 6 calendar months immediately before the month of the reassignment. If the new wage of the woman is below the statutory daily minimum wage for the country (because of working part-time) the amount of the benefit shall be equal to the difference between her past salary (before the reassignment) and the amount of the statutory minimum wage for the country. No earnings ceilings or maximum benefit amounts apply.

Cash benefit for pregnancy and childbirth (*Парично обезщетение при бременност и раждане*): it is a contributory benefit granted to mothers upon a medical referral and under the condition that the mother has been insured at least for 6 months. As of 01.01.2010 the required minimum length of insurance is 12 months.

The amount of the benefit is 90% of the contributory income for the last 6 months and cannot be lower than the statutory minimum wage for the country (BGN 180 per month in 2007, BGN 220 in 2008 and BGN 240 from 2009 onwards). The daily amount of the benefit cannot be higher than the daily net remuneration for the same period.

The benefit is paid for a period of 315 days commencing 45 days before the anticipated date of delivery. Since 01.01.2009 the period has been prolonged from 315 days to 410 days. Where the confinement occurs prior to the lapse of 45 days after commencement of the use of the benefit, the remainder of the 45-day period shall be used after the confinement.

Since 01.01.2009, fathers have been granted a right to receive the benefit. The conditions are: 1) they shall be insured for at least 6 months (as of 01.01.2010 – 12 months); 2) the benefit can be received from the 6th month until the 1st year of the child and upon the mother's approval. In that case, the benefit paid to the mother shall be terminated.

Moreover, since 01.01.2009 fathers have a right to a benefit for a period of 15 days immediately after the childbirth. That benefit does not replace the benefit received by the mother, i.e. both mother and father can receive a cash benefit for pregnancy and childbirth simultaneously. The condition is that the father shall meet all abovementioned criteria regarding the required minimum period of insurance. The amount of the benefit is the same.

Cash benefit for bringing up a child up to age 2 (*Парично обезщетение за отглеждане на малко дете*): it is a contributory benefit granted upon a medical referral and under the condition that the person has been insured at least for 6 months. As of 01.01.2010, the required minimum length of insurance is 12 months. The benefit is paid after the expiration of the period of payment of the cash benefit for pregnancy and childbirth, i.e. since the 1st to the 2nd year of the child.

The mother can receive 50% of the benefit if she does not use the right which she is entitled to (in case that she fulfills all eligibility conditions), or if she interrupts the receipt of the benefit due to returning to work. In some cases, the benefit can be paid to the father (if he uses the paid-leave for bringing up a child up to age 2 according to the regulations of Bulgarian Labour Code (*Кодекс на труда*)). The father has the same rights as the mother.

The benefit shall not be paid if the child is placed in crèches or other child-care institutions.

Monthly allowance for bringing up a child up to age 1 (*Месечна помощ за отглеждане на дете до навършване на 1 година*): it is a non-contributory allowance paid to mothers of children up to one year of age. The benefit is means-tested and shall be paid to claimants living in families where the average monthly income per family member for the last 12 months is lower or equal to BGN 200 (BGN 300 in 2008, BGN 350 from 2009 onwards). If the parents are divorced, only the income of the parent who has received the right to take care for the children shall be taken into account.

In order to receive the right to that benefit, mothers should not be insured and should not be in receipt of contributory benefit for pregnancy and childbirth or for bringing up a child up to age 2. If the mother is insured, but is not in receipt of the contributory benefit for bringing up a child up to age 2, she has a right to the monthly allowance for bringing up a child up to age 1 for a limited



period. This period should not be longer than the necessary period for acquiring a right to the abovementioned contributory benefit.

The benefit is paid since the date of childbirth until the 1st year of the child (or until the mother acquires a right to a contributory benefit for pregnancy and childbirth or to a benefit for bringing up a child up to age 2). The amount of the benefit is BGN 100 per month and it has not been changed since 2007.

Monthly child allowance for bringing up a child until completion of secondary education but not longer than 20 years of age (*Месечна помощ за дете до завършване на средно образование, но не повече от 20-годишна възраст*): it is a non-contributory allowance paid to a parent bringing up a child until the completion of secondary education, but no longer than the moment when the child reaches 20 of age.

The benefit is means-tested and is paid to persons living in families where the average monthly income per family member for the last 12 months is lower or equal to BGN 200 (BGN 300 in 2008, BGN 350 from 2009 onwards). If the parents are divorced, only the income of the parent who has received the right to take care for the child shall be taken into account.

The amount of the benefit is BGN 18 per month for the first child and BGN 20 per month for the second and each subsequent child (flat rate benefit amounting to BGN 25 per each child in 2008, BGN 35 from 2009 onwards). If a child is permanently disabled, the allowance is paid regardless of the family income and in amount which is double the standard one. In case of twins, the amount of the benefit for each child is 50% higher than the standard amount.

Year	2007	2008	2009	2010
First child	18	25	35	35
Second child	20	25	35	35
Third child	20	25	35	35
Twins (per each child)	20	37.5	52.5	52.5
Permanently disabled child	36	50	70	70

Note: Figures are in BGN, per month.

- If the child has 5 non-excused absences from school during one month, the payment of the benefit for that child shall be suspended for that month.
- The benefit shall not be paid if the child/children is/are placed in a child-care institution.
- The benefit is paid since the beginning of the month of application.

Monthly child allowance for bringing up a permanently disabled child up to 18 years of age and until completion of secondary education but no longer than 20 years of age (*Месечна добавка за деца с трайни увреждания до 18-годишна възраст и до завършване на средното образование, но не по-късно от 20-годишна възраст*): it is a non-contributory allowance paid to a parent of a child with permanent disability up to 18 years of age and until completion of secondary education but not later than 20 years of age.

The allowance is paid regardless of the family income and upon a medical referral. It amounts to 70% of the statutory minimum wage for the country (BGN 180 per month, BGN 220 in 2008, BGN 240 for 2009-2010). The benefit is paid starting from the month following the month of application. In particular, the allowance should be paid from the 1st day of the month when the medical referral has been issued but not later than 3 months after that period. If the application is sent after that period, the allowance is paid since the beginning of the month of application.

Lump sum pregnancy grant (*Еднократна парична помощ при бременност*): it is a non-contributory lump sum allowance paid to mothers who are not insured and do not receive a contributory maternity benefit. The allowance is means-tested and is paid to persons living in families where the average monthly income per family member for the last 12 months (preceding the period which starts from the 45th day prior to the anticipated date of delivery) is lower or equal



to BGN 200 (BGN 300 in 2008, BGN 350 for 2009-2010). If the parents are divorced, only the income of the parent who has received the right to take care for the child shall be taken into account.

The amount of the benefit is BGN 150 and has not been changed since 2007. The benefit is provided since the 45th day commencing the anticipated date of delivery. The benefit is paid since the month following the month of the application.

If the mother is insured but is not in receipt of the contributory benefit for pregnancy and childbirth, she has a right to the lump sum pregnancy grant *in reduced amount*. In that case it is assumed that the full amount of the benefit is paid if the mother needs at least 45 days of insurance in order to acquire a right to a cash benefit for pregnancy and childbirth. If the mother needs less than 45 days, the amount of the benefit is calculated as follows:

- (1) the daily amount of the benefit = BGN 150 per month / 45 days = BGN 3.33;
- (2) the monthly amount of the benefit to be paid = BGN 3.33 per day * (45 days – X days), where “X” is the number of days needed by the mother to acquire a right to a cash benefit for pregnancy and childbirth.

Lump sum allowance upon childbirth (*Еднократна парична помощ при раждане на дете*): it is a non-contributory allowance paid to mothers upon childbirth regardless of the family income. The right to a benefit occurs since the date of the childbirth. The amount of the benefit is BGN 200 for the first, second and third child and BGN 100 for the fourth and each consequent child (BGN 250 for the first, BGN 600 for the second and BGN for the third and each consequent child from 2008 onwards):

Birth grant amount	2007	2008	2009	2010
First child	200	250	250	250
Second child	200	600	600	600
Third child	200	200	200	200
Fourth and each subsequent child	100	200	200	200
Twins (per child)	200	600	600	600

Note: The figures are in BGN.

In case of twins, the benefit for each child shall be paid in the amount for the second child. If the parents are divorced, only the income of the parent who has received the right to take care for the children shall be taken into account. The benefit shall not be paid if the child/children is/are placed in a child-care institution.

Targeted allowance for pupils (*Целева помощ за ученици*): it is a non-contributory lump sum allowance paid to a family whose child is enrolled in 1st grade at state or municipal schools. The benefit is means-tested and is paid to persons living in families where the average monthly income per family member for the last 12 months is lower or equal to BGN 200 (BGN 300 in 2008 and BGN 350 from 2009 onwards). If the parents are divorced, only the income of the parent who has received the right to take care for the child shall be taken into account.

The application shall be submitted after the child has been enrolled in 1st grade, but not later than the end of September of the current year. The amount of the allowance is BGN 120 (BGN 150 from 2008 onwards).

Lump sum allowance for raising a child until 1 year of age for mothers who are regular tertiary students (*Еднократна помощ за отглеждане на дете до навършване на 1 година за майки студентки в редовна форма на обучение*): it is a non-contributory allowance introduced in 2009. Its amount was BGN 2,880 in 2009 and it has not been changed since then. It is a non-means tested allowance, but the child should not be placed in a child-care institution. The right to the benefit emerges since the date of the childbirth.

Lump sum allowance for raising twins until 1 year of age (*Еднократна помощ за отглеждане на близнаци до навършване на 1 година*): it is a non-contributory allowance



introduced in 2009. Its amount was BGN 2,400 (i.e. BGN 1,200 per child) and it has not been changed since then. It is a non-means tested allowance, but the child should not be placed in a child-care institution. The right to the benefit emerges since the date of the childbirth.

1.3.5 Pensions

Different types of pensions are provided in Bulgarian social security system. In general, they can be classified as contributory, i.e. pensions the right to which depends on the earnings and the contribution history, and non-contributory pensions, i.e. pensions the right to which does not depend on the earnings and the contribution history. Moreover, one should distinguish between personal and survivor's pensions.

There are some common rules regarding pensions which shall be taken into account.

- (1) Full accumulation of earnings and pensions is possible. This means that one person can receive wages/salaries *and* pension.
- (2) Deferral of retirement is not time-limited. In other words, a person having reached the standard retirement age can continue working as long as he/she wants to.
- (3) All pensions are non-taxable. Pensioners do not pay taxes and social insurance contributions on the amount of pensions received by them.
- (4) There are minimum and maximum pension amount. Minimum amounts of the contributory pensions are determined as a percentage of the minimum amount of the so-called “pension for insurance and old-age” or IOA-pension (*пенсия за осигурителен стаж и възраст*). The minimum amount of that pension is set in the Law on the Budget of the Public Social Insurance (*Закон за бюджета на държавното обществено осигуряване*). The maximum amount of the pension is determined on July 1st as 35% of the maximum amount of the contributory income for the preceding year. The maximum amount of the contributory income is determined also in the aforementioned Law. The minimum amount of the pension for insurance and old-age and the maximum pension amount are presented in the following table:

	2007	2008	2009	2010
Minimum amount of the IOA-pension	91.59	108.17	130.46	130.46
Maximum amount of the IOA-pension	472.50	490.00	647.50	647.50

Note: Figures are in BGN, per month, annual averages.

- (5) Non-contributory pensions are determined as a percentage of the amount of the so-called “social old-age pension”. The social old-age pension amount is presented in the following table:

	2007	2008	2009	2010
Social old-age pension	67.88	80.18	96.70	100.86

Note: Figures are in BGN, per month, annual averages.

- (6) In principle, pension amounts should be indexed as of 1st July each year according to the so-called “Swiss Rule”, i.e. with a rate equal to the sum of 50% of the inflation and 50% of the growth rate of the average contributory income for the country during the preceding year. Only pensions granted before 31 December of the previous year shall be indexed in the respective year. Pensions granted after 1 January of the current year shall not be indexed at 1st July of the same year, they shall be indexed next year. For example, if the inflation was 3% and the average contributory income for the country rose by 5% in year X, pensions granted until 31 December of the year X shall be indexed by 4% ($1/2 * 3\% + 1/2 * 5\%$) as of July 1st of the year X+1. But in practice, during the period 2007-2009 pensions were increased more than once, i.e. the Government actually applied some ad-hoc increases.



- (7) Parents cannot receive a personal and survivor's pension simultaneously (for details, see "Survivor's pension");
- (8) The different types of pensions can be accumulated, i.e. one person can receive two different pensions. If a person receives more than one pension, one of them shall be received in its full amount and the amount of the others shall be reduced by 50%. If one of the other pensions is "social invalidity pension" its amount shall be reduced by 75%. Of course, there are some exceptions:
- personal pension for insurance and old age cannot be received with a survivor's pension for insurance and old age;
 - personal or survivor's pension for insurance and old age cannot be received with a personal or survivor's pension for invalidity due to general sickness;
 - personal pension for invalidity due to general sickness cannot be received with survivor's pension for invalidity due to general sickness;
 - social old-age pension cannot be received with another type of pension.

Pension for insurance and old age (*Пенсия за осигурителен стаж и възраст*): it is a contributory benefit granted to persons having reached 63 years of age (men) or 59 years of age (women) under the condition that the sum of their years of age and their period of insurance is equal to 100 points (men) and 93 points (women), where each year provides 1 point. However, persons having insufficient period of insurance can retire at age 65 if they have at least 15 years of insurance. The amount of the pension depends on three variables:

- the amount of the average contributory income for the country for the last 12 months preceding the date of retirement;
- the monthly ratios between the past earnings of the claimant and the average contributory income for the country for the assessment period;
- the duration of the pension insurance (number of years).

The reference (or assessment) period for calculating the pension includes: (1) only three consecutive years from the period before 1997, and (2) all periods of insurance afterwards.

Pension for invalidity due to general sickness (*Пенсия за инвалидност поради общо заболяване*): it is a contributory benefit granted to persons with permanent disabilities upon a medical referral. The minimum required period of insurance varies according to the age of the claimant – it is between 0 for persons up to age 20 and 5 years for persons of age 30 or above. The calculation formula is the same as for the pension for insurance and old age. However, the number of years of insurance is corrected with a coefficient based on the percentage of reduced working capacity. The pension amount cannot be lower than a certain minimum (which varies according to the degree of reduced working capacity):

	2007	2008	2009	2010
1. Minimum amount of the IOA-pension	91.59	108.17	130.46	130.46
2. Minimum amount of the pension for invalidity due to general sickness, including:				
- reduced working capacity more than 90% (115% of [1])	105.33	124.40	150.03	150.03
- reduced working capacity between 71 and 90% (105% of [1])	96.17	113.58	136.98	136.98
- reduced working capacity between 50 and 70.99% (85% of [1])	77.85	91.94	110.89	110.89

Note: Figures are in BGN, per month, annual averages.

Pension for invalidity due to employment injury or occupational disease (*Пенсия за инвалидност поради трудова злополука или професионална болест*): it is a contributory benefit granted to persons with permanent disabilities upon a medical referral. A minimum qualifying period is not required.



The calculation formula is the same as for the pension for insurance and old age. However, the number of years of insurance is corrected with a coefficient based on the percentage of reduced working capacity. The pension amount cannot be lower than a certain minimum (varying according to the degree of reduced working capacity) or exceed a certain maximum:

	2007	2008	2009	2010
1. Minimum amount of the pension for insurance and old-age	91.59	108.17	130.46	130.46
2. Minimum amount of the pension for invalidity due to employment injury or occupational disease, including:				
- reduced working capacity more than 90% (125% of [1])	114.49	135.21	163.08	163.08
- reduced working capacity between 71 and 90% (115% of [1])	105.33	124.40	150.03	150.03
- reduced working capacity between 50 and 70.99% (100 % of [1])	91.59	108.17	130.46	130.46

Note: Figures are in BGN, per month, annual averages.

Social Old-Age Pension (*Социална пенсия за старост*): it is a non-contributory benefit granted to persons who are over 70 years of age. In order to receive that benefit, the person should live in a family where the annual income per family member by the date after reaching the age is less than the sum of the Guaranteed Minimum Income for the last 12 months (BGN 55 per month in 2007 and 2008, BGN 65 per month from 2009 onwards). Furthermore, the claimant shall not be granted any other type of pension.

Social Invalidity Pension (*Социална пенсия за инвалидност*): it is a non-contributory and non-means tested benefit granted to persons who have reached 16 years of age with reduced working capacity of over 71%. The amount of the social invalidity pension varies according to the degree of reduced working capacity and should be determined as a percentage of the social old-age pension (120% of the social old-age pension or BGN 75.60 – for people with reduced working capacity above 90%; 115% of the social old-age pension or BGN 72.45 – for people with reduced working capacity between 71 and 90%). This pension is provided in only 25% of its amount if cumulated to other pension.

	2007	2008	2009	2010
1. Social old-age pension	67.88	80.18	96.70	100.86
2. Social invalidity pension, including:				
- reduced working capacity more than 90% (120% of [1])	84.85	100.23	120.88	126.08
- reduced working capacity between 71 and 90% (110% of [1])	74.67	88.20	106.37	110.95

Note: Figures are in BGN, per month, annual averages.

Survivor's pension (*Наследствена пенсия*): it is a contributory benefit and can be received by the surviving spouse, children (not older than 18 years of age; 26 years of age for students) and parents. Divorced and non-married partners are not entitled to that benefit. The survivor's pension is calculated as a percentage of the pension of the deceased person (one survivor – 50%; two survivors – 75%; three or more survivors – 100%). It is granted to all entitled persons and is divided equally between them. The surviving spouse has the right to a survivor's pension 5 years before she reaches pensionable age, or even before this age if she has lost some capacity for work. The amount of the survivor's pension (provided to all the survivors) cannot be lower than the 75% of the minimum amount of the IOA-pension and cannot be higher than a certain maximum:

Year	2007	2008	2009	2010
Minimum amount of the IOA-pension	91.59	108.17	130.46	130.46
Minimum amount of the Survivor's pension	68.69	81.13	97.85	97.85

Note: Figures are in BGN, per month, annual averages.

Pension supplement in case of deceased spouse (*Добавка от пенсията на починал съпруг*): it is a non-contributory benefit granted to a pensioner whose spouse has deceased. The amount of the allowance is 20% of the pension (or the sum of pensions) of the deceased spouse. It is granted for life but should be terminated in case of re-marriage. Moreover, the benefit cannot be combined with a survivor's pension, but full accumulation with other pensions is possible.



Pension from voluntary pension insurance (*Пенсия от фонд за допълнително доброволно пенсионно осигуряване*): it is a contributory benefit paid to persons having been insured in a private fund for supplementary voluntary pension insurance. Social insurance contributions are accumulated in the so-called “individual retirement accounts”. There are two types of pensions – old-age pension (paid if the person has gained a right to a pension from public pension fund) and invalidity pension (paid upon a medical referral). The pension can be paid as a periodic or lump-sum benefit depending on the choice of the insured person.

Note: This benefit is non-taxable if paid as a periodic payment. If the pensioner decides to withdraw and transfer the accumulated amount to his/her individual bank account, this amount is treated as a taxable income.

1.3.6 Social Assistance, Housing and Heating Allowances

Bulgarian system of social assistance allowances is based upon the concept of the so-called “Guaranteed Minimum Income” (GMI). The amount of the GMI is determined by the Council of Ministers: BGN 55 for 2007-2008 and BGN 65 for 2009-2010.

Monthly social assistance allowance (*Месечна социална помощ*): it is a non-contributory means-tested allowance granted to persons living alone or to families whose income for the previous month is below the so-called “Differentiated Minimum Income” (DMI). Except the income-test, the beneficiaries should fulfill other eligibility criteria.

DMI is determined for each person that falls in a particular beneficiary category as a percentage of GMI. It shall be calculated at individual (when a person lives alone) or at family level. The DMI at family level is calculated as a sum of the DMIs of all family members.

The claimants will receive monthly social assistance allowance if their income is lower than the respective DMI – the amount of the allowance should equal the difference between the income of the individual (if calculated at individual level) or the family (if calculated at family level) and the respective DMI.

DMI varies between 30% of GMI for a child between 7 and 16 years of age (20 years of age when studying) and 165% of GMI for a person aged 75 or more who lives alone (see table 1.3.2). If a person qualifies for 2 or more categories then she receives the highest percentage amid the set of ratios for the identified categories.

Despite the fact that according to the Bulgarian legislation individuals and families are the units of assistance, table 1.3.2 reveals that *the “actual” unit of assistance is the household*. In fact, the means-test shall include the incomes of *all persons living in the same lodging*. Thus, for the simulation purposes it will be justifiable to use the household as the unit of assessment.



Table 1.3.2 Levels of DMI for various beneficiary categories

Category of person	2007	2008	2009	2010
person over the age of 75 living alone	165.0%	165.0%	165.0%	165.0%
person over the age of 65 living alone	140.0%	140.0%	140.0%	140.0%
person over the age of 65 cohabiting with other persons	100.0%	100.0%	100.0%	100.0%
two spouses living together, per each spouse	66.0%	66.0%	66.0%	66.0%
person under 65 living alone	73.0%	73.0%	73.0%	73.0%
person with reduced working capacity of 50% or more	100.0%	100.0%	100.0%	100.0%
person with reduced working capacity of 70% or more	125.0%	125.0%	125.0%	125.0%
child aged between 0-16 (up to 20 when studying)	75.0%	81.0%	81.0%	81.0%
child aged between 7-16 (up to 20 when studying) – if having 5 or more unexcused absences from school	30.0%	30.0%	30.0%	30.0%
child aged between 7-16 and not attending school	37.0%	20.0%	20.0%	20.0%
orphan or child accommodated in a host family	100.0%	100.0%	100.0%	100.0%
child with permanent disability	100.0%	100.0%	100.0%	100.0%
lone parent taking care of a child under age 3	120.0%	120.0%	120.0%	120.0%
lone parent with a child or children aged under age 16 (under 20 for children attending school)	100.0%	100.0%	100.0%	100.0%
pregnant woman 45 days before the term	100.0%	100.0%	100.0%	100.0%
parent taking care of a child under age 3	100.0%	100.0%	100.0%	100.0%

Targeted Heating Allowance (*Целева помощ за отопление*): it is a non-contributory means-tested allowance granted to persons living alone or families whose income is below the so-called “Differentiated Minimum Income for Heating” (DMIH) and who also fulfill other eligibility criteria. DMIH is calculated following the same procedure as the DMI for the monthly social assistance allowance, but the percentages for the different categories of beneficiaries are higher. It varies from 144% of GMI for an adult living in the same lodging with her/his spouse to 288% of GMI for a person aged 75 years or more who lives alone (see table 1.3.3).

Despite the fact that the Bulgarian legislation defines the units of assistance as “individuals and families”, according to the practices the actual unit of assessment is the household (see “*Monthly social assistance allowance*”).



Table 1.3.3 Levels of DMIH for various beneficiary categories

Category of person	2007	2008	2009	2010
person living alone	175.0%	210.0%	210.0%	210.0%
person with reduced working capacity of 50% or more living alone	175.0%	249.6%	249.6%	249.6%
orphan child	164.0%	196.8%	196.8%	196.8%
lone parent with a child or children up to age 18 (up to 20 if studying)	208.0%	249.6%	249.6%	249.6%
two spouses living together, per each spouse	120.0%	144.0%	144.0%	144.0%
child aged between 0-18 (up to 20 if studying)	131.0%	157.2%	157.2%	157.2%
child with permanent disability	164.0%	196.8%	196.8%	196.8%
person cohabiting with other persons	168.0%	201.6%	201.6%	201.6%
pregnant woman 45 days before the term	153.0%	183.6%	183.6%	183.6%
parent taking care of a child under 3	153.0%	183.6%	183.6%	183.6%
person over the age of 70	153.0%	183.6%	183.6%	183.6%
person over the age of 75 living alone	240.0%	288.0%	288.0%	288.0%
person over the age of 65 living alone	229.0%	274.8%	274.8%	274.8%
person with reduced working capacity 50% or more	153.0%	183.6%	183.6%	183.6%
person with reduced working capacity of 70% or more	186.0%	223.2%	223.2%	223.2%
person with reduced working capacity of 90% or more	229.0%	274.8%	274.8%	274.8%

The amount of the allowance is determined by the Minister of Labour and Social Policy /MLSP/. It is granted for a period of 5 months – from November to March – because this period is considered as the heating season in the country. However, depending on the type of the heating, the actual level of the support is different. The possible cases are presented below:

Type of heating	Income base for means-testing	Method of payment	Amount of the benefit
Electricity	Income for the last month	Monthly In kind	Actual expenses but not more than the amount determined by the MLSP
Central heating	Income for the last month	Monthly In kind	Actual expenses but not more than the amount determined by the MLSP
Natural gas	Income for the last month	Monthly In kind	Actual expenses but not more than the amount determined by the MLSP
Solid fuel	Income for the preceding 6 months	Lump sum In kind	Amount determined by MLSP

It should be noted that the benefit for 2007 is not paid directly to the beneficiary but to the respective energy supplier or retail trader. In 2008 the provisions concerning the heating allowances were changed. In order to optimize administrative costs and to avoid social frauds, it was decided that the allowance shall be paid as a lump sum in cash and directly to the beneficiary. Those regulations remained unchanged until June 2010, when a new set of regulations were introduced. The amounts of the heating allowances for the heating seasons during the period 2007-2010 are presented in the following table:



Type of heating	2007/ 2008 heating season (per month)	2008/ 2009 heating season (per month)	2009/ 2010 heating season (per month)
Electricity	BGN 60.45	The same amount for all	The same amount for all
Central heating	BGN 60.45	types of allowances:	types of allowances:
Natural gas	BGN 36.00	BGN 56.50	BGN 55.23
Solid fuel	BGN 31.90		

Lump-sum social assistance allowance (*Еднократна социална помощ*): it is a non-contributory means-tested allowance. Its amount is up to 5 times the GMI amount. It can be granted only once per year to cover unexpected health, educational, living and other emergencies. The allowance can be received by all citizens regardless of their income or material status but upon the result of the so-called “social assessment” by the social workers.

Targeted allowance for issuing a personal ID card (*Целева помощ за издаване на лична карта*): it is a non-contributory means-tested allowance. It is granted upon an assessment of needs made by social workers and its amount is determined by the social workers.

Targeted allowance for medical treatment abroad (*Целева помощ за лечение в чужбина*): it is a non-contributory means-tested allowance. It is granted upon an assessment of needs made by the social workers only to persons having received permission for medical treatment abroad from the Ministry of Health, at the expense of its budget. The financial support shall be granted as a lump-sum allowance to cover the personal expenses of the beneficiary and her/his relatives.

Targeted allowance for free traveling (*Целева помощ за безплатно пътуване*): it is a non-contributory non-means tested allowance. It is granted to mothers of many children, persons with reduced working capacity over 71%, and children up to age 16 with permanent disabilities. Mothers of many children are entitled to free travel once per year – 1 return ticket by the railway or bus transport anywhere within the country. To facilitate the social adaptation individuals with reduced working capacity over 71%, children up to age 16 with permanently reduced capability, and war-disabled individuals have the right to free travel twice a year – 2 return tickets by rail or bus transport anywhere within the country.

Targeted allowance for paying rent for a municipal lodging (*Целева помощ за наем на общински жилища*): it is a non-contributory means-tested allowance paid to persons accommodated in municipal lodgings whose income for the previous month are below 150% of the DMI (see “*Monthly social assistance allowances*”). Only the following groups are entitled to such allowance: (i) orphans up to 25 years of age who have graduated at a specialized institution providing vocational training for disabled children and children at risk; (ii) persons over 70 years of age living alone, and (iii) lone parents. The amount of the benefit depends on the actual expenditures made by the beneficiaries.

1.3.7 Non-contributory benefits for the integration of disabled people

Monthly allowance for social integration (*Месечна добавка за социална интеграция*): it is a non-contributory non-means tested allowance granted to people with permanent disabilities. There are 7 types of social integration allowances (for transport services; for ICT services; for education; for medical bath treatment and rehabilitation; for dietary purposes and medicines; for accessible information; for paying the rent of a municipal dwelling). Their amounts are calculated as a percentage of GMI and vary from 15% to 300% of GMI:

- monthly allowance for transport services – 15% of GMI;
- monthly allowance for ITC services – 20% of GMI;
- monthly allowance for education – 20% of GMI;



- allowance for medical bath treatment and rehabilitation – up to 3 times GMI;
- monthly allowance for dietary purposes and medicines – 15% of GMI;
- monthly allowance for accessible information – 15% of GMI;
- monthly allowance for paying the rent of a municipal dwelling – not more than the actual amount of the rent.

Targeted financial support for buying and repairing supportive means, devices, equipment and medical products (*Целева помощ за покупка и ремонт на помощни средства, приспособления, съоръжения и медицински изделия*): it is a non-contributory in-kind benefit provided to persons with permanent disabilities. The support is granted upon a medical referral and without means-test. The support is provided in form of reimbursement of the expenses actually made by the beneficiary, but not more than a fixed maximum level. The maximum level of the possible financial support is determined per each item (mean, device, equipment, or other product) by an Ordinance of the Minister of Labour and Social Policy.

Supplement for care by assistant (*Добавка за чужда помощ*): it is non-contributory benefit paid to pensioners with disability over 90% who need permanent assistance of an attendant. The amount of the supplement is determined as a percentage of the social-old age pension amount:

	2007	2008	2009	2010
Social old-age pension	67.88	80.18	96.70	100.86
Supplement for care by assistant	50.91	60.14	72.53	75.65

Note: Figures are in BGN, per month, annual averages.

1.3.8 Education Related Allowances

Scholarship for pupils (*Стипендия за ученици*): it is a non-contributory means-tested benefit provided to pupils enrolled in state and municipal schools depending on their marks achieved during the last school year. The scholarship is paid for the period from October 1st to June 30th (or paid 12 months for pupils with special educational needs and orphans) and in differentiated amounts:

- BGN 21 per month to pupils with special educational needs and orphans and without means-testing;
- BGN 18 per month to pupils: (i) living in a family where the average income per family member is lower than the amount of the statutory minimum wage for the country for the last 6 months, and (ii) having “very good” annual average mark;
- BGN 21 to pupils with “excellent” annual average mark and without means-testing.

Scholarship for students, PhD students and post-graduate students (*Стипендия за студенти, докторанти и специализанти*): it is a non-contributory and means-tested benefit.

Scholarships for students are paid for a period of 5 months (per each semester). The eligibility rules and scholarship amounts are determined by each university. While determining the eligibility rules the state universities shall take into account two criteria: average grade per semester and average monthly income per family member for the last 6 months. The amount of the scholarship for students could not be lower than BGN 50 and not higher than BGN 120 per month.

PhD students studying in Bulgaria at state-supported organizations (universities, institutes at the Bulgarian Academy of Sciences, or other scientific organizations) can receive a scholarship amounting to BGN 450 per month. The scholarship is paid for a period of 3 years. There are also



specific rules for foreign students in Bulgaria and for Bulgarian students abroad within the framework of the programmes supported by the state.

The rector of a state university can grant students and PhD students lump-sum awards and allowances up to BGN 200. The awards are granted for excellent achievements. Allowances can be granted also in case of severe financial difficulties experienced by the students.

- *Scope and scale*

Table 1.4.1 Social benefits: recipients

	2007	2008	2009	2010
Population (annual average, million)	7.660	7.623	7.585	7.534
as % of population				
Unemployment benefit	0.85%	0.89%	1.60%	1.82%
Cash benefit for sickness due to general disease	n/a	n/a	n/a	n/a
Cash benefit for sickness due to employment injury or occupational disease	n/a	n/a	n/a	n/a
Cash benefit for pregnancy and childbirth	n/a	7.31%	11.31%	10.90%
Cash benefit for bringing up child up to the age of 2	n/a	4.86%	7.35%	7.96%
Monthly allowance for bringing up child up to age of 1	0.31%	0.29%	0.29%	0.31%
Monthly child allowance for bringing up a child until completion of secondary education but not longer than 20 years of age	10.90%	10.87%	11.10%	11.15%
Monthly child allowance for bringing up a permanently disabled child up to 18 years of age and until completion of secondary education but not longer than age 20	0.26%	0.26%	0.26%	0.27%
Lump sum pregnancy grant	0.25%	0.23%	0.26%	0.23%
Lump sum allowance upon childbirth	0.91%	0.96%	1.03%	0.96%
Targeted allowance for pupils	0.38%	0.39%	0.53%	0.56%
Lump sum allowance for raising a child until age 1 for mothers who are regular tertiary students	–*	–*	0.02%	0.03%
Lump sum allowance for raising twins until age 1	–*	–*	0.06%	0.03%
Pension for insurance and old age	21.26%	21.04%	20.94%	21.12%
Pension for invalidity due to general sickness	5.43%	5.44%	5.57%	5.68%
Pension for invalidity due to employment injury or occupational disease	0.42%	0.40%	0.38%	0.37%
Social old-age pension	0.05%	0.05%	0.05%	0.05%
Social invalidity pension	2.32%	2.13%	2.04%	2.07%
Survivor's pension	1.88%	1.87%	1.88%	1.63%
Pension supplement in case of deceased spouse	8.72%	8.86%	9.00%	9.20%
Pension from voluntary pension insurance	0.03%	0.02%	0.02%	0.02%
Monthly social assistance allowance	1.00%	0.56%	0.48%	0.59%
Targeted allowance for heating	3.92%	3.37%	3.42%	2.74%
Monthly allowance for social integration	6.00%	6.16%	6.32%	5.50%
Targeted financial support for buying and repairing of supportive means, devices, equipment, medical products	n/a	n/a	n/a	n/a
Supplement for care by assistant	1.59%	1.52%	1.48%	1.41%
Scholarships for pupils in the secondary education system	n/a	n/a	0.16%	0.17%
Scholarships for students in the tertiary education system	n/a	n/a	0.33%	0.32%

Sources: 2007-2010 Annual reports of: National Social Security Institute; Agency for Social Assistance; NSI, ESSPROS reporting system.

Note: * The benefit is introduced in 2009.



Tables 1.4.1 and 1.4.2 contain the number of recipients and aggregate expenditure for a particular benefit (some minor items have been dropped). For some benefits data about the number of recipients is not available in a relevant form, e.g. sickness benefits (for temporary work incapacity) are evaluated by NSSI as “average number of days” claimed and provided. It should be noted that the shares in table 1.4.1 should not be summed due to double counting – the social system allows that some recipients of one benefit can also receive another one, two or more benefits. So, the content of the table presents the number of provided benefits of a particular kind.

Table 1.4.2 Social benefits: expenditure

	2007	2008	2009	2010
Annual expenditure on social protection (BGN, mln.)	9,148	10,741	11,751	12,615
as % of total expenditure				
Unemployment benefit	0.94%	0.93%	2.03%	2.48%
Cash benefit for sickness due to general disease	1.74%	2.13%	2.45%	2.00%
Cash benefit for sickness due to employment injury or occupational disease	0.04%	0.06%	0.06%	0.05%
Cash benefit for pregnancy and childbirth	1.04%	1.84%	2.56%	2.50%
Cash benefit for bringing up child up to the age 2	1.25%	1.20%	1.09%	1.00%
Monthly allowance for bringing up child up to age 1	0.32%	0.26%	0.23%	0.23%
Monthly child allowance for bringing up a child until completion of secondary education but not longer than 20 years of age	2.11%	2.34%	3.05%	3.05%
Monthly child allowance for bringing up a permanently disabled child up to age 18 and until completion of secondary education (but not longer than age 20)	0.37%	0.38%	0.40%	0.37%
Lump sum pregnancy grant	0.03%	0.02%	0.03%	0.02%
Lump sum allowance upon childbirth	0.15%	0.23%	0.25%	0.22%
Targeted allowance for pupils	0.05%	0.04%	0.05%	0.05%
Lump sum allowance for raising a child until age 1 for mothers who are regular tertiary students	–*	–*	0.03%	0.04%
Lump sum allowance for raising twins until age 1	–*	–*	0.03%	0.02%
Pension for insurance and old age	34.17%	34.48%	39.01%	39.09%
Pension for invalidity due to general sickness	3.41%	3.14%	3.66%	3.61%
Pension for invalidity due to employment injury or occupational disease	0.36%	0.35%	0.37%	0.34%
Social old-age pension	0.05%	0.04%	0.05%	0.05%
Social invalidity pension	0.77%	0.73%	0.83%	0.80%
Survivor’s pension	1.79%	1.84%	2.07%	2.07%
Pension supplement in case of deceased spouse	2.33%	2.39%	2.71%	2.71%
Pension from voluntary pension insurance	0.23%	0.53%	0.30%	0.30%
Monthly social assistance allowance	0.72%	0.36%	0.29%	0.38%
Targeted allowance for heating	0.90%	1.27%	0.32%	0.52%
Monthly allowance for social integration	1.06%	0.91%	0.93%	0.98%
Targeted financial support for buying and repairing of supportive means, devices, equipment, medical products	0.38%	0.45%	0.40%	0.30%
Supplement for care by assistant	0.86%	0.82%	0.87%	0.81%
Scholarships for pupils in the secondary education system	0.02%	0.02%	0.02%	0.02%
Scholarships for students in the tertiary (higher) education system	0.18%	0.14%	0.16%	0.16%

Sources: 2007-2010 Annual reports of: National Social Security Institute; Agency for Social Assistance; NSI, ESSPROS reporting system.



Some of the benefits presented above have minor shares in the total number of recipients and/or total expenditure so data about them is rarely available. Health care expenditures are distributed indirectly through the system of NHIF's clinical paths for medical treatment as well as subsidization of life-supporting medications. Also, data about some of the items is not available as a separate budget line and is aggregated to the expenditures for a major benefit (e.g. the benefit for long-term unemployment is merged to the main unemployment benefit).

1.4 Social contributions

1.4.1 Social insurance system in Bulgaria, 2007-2010: An overview

The basic source of social security legislation is the Code on Social Insurance /CSI/ (Кодекс за социално осигуряване) which regulates the social insurance system. The main responsibility for designing and regulating the social insurance policy in the country is held by the National Social Security Institute /NSSI/ and the main responsibility for collecting the duties on SIC revenues is held by the National Revenue Agency /NRA/¹.

Individuals having earnings from at least one source of taxable income are obliged to pay statutory social insurance contributions. According to the CSI a **contributor** to the social insurance system can be the individual (employed or self-employed), the employer, or other organization which has the legal duty to provide particular individuals with social insurance. For state insurance purposes an individual with any kind of self-employment activity must registers at NSSI as a “self-insured” person. The Bulgarian state also participates in the system through its annual central budget subsidy to the state social insurance funds /SIF/.

One of the main concepts in the system is the **contributory income** /CI/, also called “contributory base”. This is the amount of personal income which serves as a basis for the determination of the due SIC. CI comprises of all earnings, including those accrued and yet unpaid, from employment or self-employment activity. Collected SIC are allocated to the following Social Insurance Funds /SIF/:

- (1) “Pensions” Fund – providing benefits in cases of old age, disability due to common disease, and death;
- (2) “General Sickness and Maternity” Fund – providing benefits in cases of common disease, temporary disability, temporarily reduced working capacity, and maternity;
- (3) “Employment Injury and Occupational Diseases” Fund – providing benefits in cases of disability, death, temporary disability and temporarily reduced working capacity due to a labor accident or professional disease;
- (4) “Unemployment” Fund – providing benefits in case of unemployment.

The annual Law on the Budget of the State Public Insurance (Закон за бюджета на държавното обществено осигуряване) determines the following parameters for each fiscal year:

- the maximum monthly amount (or “ceiling”) of the CI during the calendar year;
- the basic economic activities and qualification groups of professions for which minimum monthly thresholds (or “floors”) of CI for the calendar year are enacted (for those activities and groups of professions) as well as the amounts of these thresholds;
- the minimum monthly amount of the CI during the calendar year for the self-insured persons.

The maximum threshold for the CI is BGN 1,400 for year 2007 and BGN 2,000 for the period 2008-2010. For the fraction of the monthly income which is above the ceiling no mandatory SIC are due;

¹ More information about the operation of these institutions on: www.nssi.bg, www.nap.bg.



The system of minimum thresholds is applied for the monthly CI where each threshold is set in relation to both the type of economic activity (branch) of the employer and the qualification category of the respective profession. For year 2007 the thresholds vary between BGN 180 and BGN 851.

Except for the numerous employee positions minimum thresholds for the monthly CI are set regarding the self-insured persons and for the registered agricultural or tobacco producers. The floors for CI of the self-insured persons are set at the following levels: 2007- BGN 220, 2008- BGN 240, 2009- BGN 260, 2010- BGN 420. The floors for registered agricultural and tobacco producers are set at 50% of the monthly threshold for the self-employed (or 25% if this is their only activity, i.e. the only source of income).

However, the self-insured persons *can choose explicitly* at what level of CI they would like to insure themselves – in-between the floor and the ceiling. For example, in 2007 a sole entrepreneur can choose for her/his contributory base an amount between 220 BGN and 1400 BGN (BGN 420 and BGN 2000 in year 2010). The rationale for this rule is to provide the self-insured persons with an option to gain higher individual contribution ratio which will provide her with higher state pension in the framework of the “pay-as-you-go” /PAYG/ system.

SIC due to each SIF are to be split between the employer and employee. At the start of social security reform (year 2000) a long-term plan for the ratio of the duties of these two contributors was established starting with a large employer’s share with a tendency to equalize the SIC burden at the end of the decade. The shares of this planned splitting of the SIC were as follows:

Year	Employer	Employee
2000-2001	80%	20%
2002-2004	75%	25%
2005	70%	30%
2006-2007	65%	35%
2008-2009	60%	40%
2010	50%	50%

However, various legislative changes have been introduced *ad hoc* in respect of the different types of SIC and the splitting was not applied as a unified ratio – the shares of the employee-employer duties have been defined explicitly for a particular fund. For example: in 2009 the splitting of the pension insurance rate (i.e. “Pension Fund” contribution) of 18% was defined as 8% due to employee and 10% due to employer, i.e. the actual ratio was 44.4% for the employee and 55.6% for the employer (see 1.4.2).

The vast majority of hired employment in Bulgaria is utilized under the so called “III Category” Labour Contract. The categories of hired labour are regulated by the CSI. Special treatment for public insurance purposes is provided to the so called “labour category I and II” – a set of selected high-risk professions (e.g. sailors, industrial divers, miners, pilots, chemical technicians, and other hazardous occupations) for which additional SIC rates must be contributed by their employers. These categories of employees, however, have much lower shares in the total employment (see table 1.5.1).

In the same time, particular types of public employees are hired under different labour regulations. The main of these options are the “civil servant” (regulated by the Civil Servant Act), the defense and law enforcement employees (e.g. military, police, or judicial system officers). For these public employees the total amount of compulsory SIC is covered by the state and no employee’s share is deducted from their gross remuneration.



1.4.2 Social contributions: A brief description

Pension insurance (Фонд „Пенсионно осигуряване“)

Bulgarian pension insurance is built on the so called “three pillar” system. The first pillar – called “State Pension Insurance” – is the public PAYG pension insurance. The second pillar is the so called “Supplementary Mandatory Pension Insurance” /SMPI/. It is a fund-based compulsory pension insurance managed by private pension funds. In the second pillar there are two types of pension funds – “Universal” (for all born after 31.12.1959) and “Professional” (only for a narrow set of professions). SIC on this pillar are allocated to an individual retirement account /IRA/ at a private fund selected by each individual. It entitles the employee to a second pension from the IRA at her retirement. The third pillar is the “Voluntary Pension Insurance” which is managed also by private funds and the respective SIC are also allocated to IRAs at these private funds.

The following table presents the pension insurance SIC rates due to different contributors:

Pension insurance (IIIrd labour category)				
Year	Insurance rate for employee			Insurance rate for self-insured
	Total rate	% due to employer	% due to employee	
2007	23	14.95	8.05	23
2008	22	13.2	8.8	22
2009	18	10.0	8.0	18
2010	16	8.9	7.1	16

For example, in 2007 the total rate for state pension insurance is 23% for employees working at III-rd labour category (the mass case). If the person is born up to 31.12.1959 the whole rate is applied for the first pillar (i.e. the PAYG pension insurance) and no duty emerges for SMPI. However, for the younger individuals (born on 01.01.1960 or later on) this 23% rate is divided into 18% for the first and 5% for the second pillar – with the respective split between the employer and the employee. The social insurance system redirects the SMPI fraction to the private pension fund which was explicitly chosen by the employee.

If the employee works at I-st or II-nd labour category job the total pension insurance rate is higher – the rationale for this is the necessity for providing early retirement of professions with risky or severe work conditions. However, the SIC burden is allocated only to the employer – for example, in year 2007 the Pension Fund rate is 26% (by 3 percentage points higher than the III-rd category rate) and is divided to 17.95% due to employer and 8.05% due to employee. Also, the employer has to contribute to the second pillar (SMPI) by an additional rate which is accumulated to a Professional Pension Fund. This rate is constant for the period 2007-2010 and is 7% for the II-nd and 12% for the I-st labour category jobs.

Common diseases and maternity insurance (Фонд „Общо заболяване и майчинство“)

This SIC is used to provide eligibility of the employee to benefits in cases of general illness or maternity. An exclusion of this duty is applied if the person has been hired for a period shorter than 5 workdays (or 40 hours) during a particular month.



General sickness and maternity insurance				
Year	Insurance rate for employee (IIIrd category)			Insurance rate for self-insured
	Total rate	% due to employer	% due to employee	
2007	3.5	2.275	1.225	3.5*
2008	3.5	2.1	1.4	3.5*
2009	3.5	2.1	1.4	3.5*
2010	3.5	2.1	1.4	3.5*

* This fund is not compulsory for the self-insured persons. Each of them decides whether she will contribute to that fund in order to become eligible for contributory benefits related to the covered health risks (except work injuries or occupational diseases).

Unemployment insurance (Фонд „Безработица”)

This contribution is used to provide eligibility of the employee to benefits in cases of unemployment spells. Exclusions of this duty are applied if the person has been actually hired for a period shorter than 5 workdays. Also, the self-employed do not contribute to this fund. The insurance rate was 3% in 2007 and was lowered to 1% in 2008.

Unemployment insurance				
Year	Insurance rate for employee (IIIrd category)			Insurance rate for self-insured
	Total rate	% due to employer	% due to employee	
2007	3	1.95	1.05	–
2008	1	0.6	0.4	–
2009	1	0.6	0.4	–
2010	1	0.6	0.4	–

“Work Injury and Occupational Disease” insurance (Фонд „Трудова злополука и професионално заболяване”)

Contributions to this fund are used to provide eligibility of the employees to specific benefits in cases of labour accidents or development of an occupational disease. The rate is due only to the employer and varies from 0.4% to 1.1% (0.7% on average) according to the risk associated to the given economic activity.

Health insurance (Здравно осигуряване)

The compulsory health insurance is the main source of funding for the public health system and is regulated by a special legislative act (Health Insurance Act). Similarly to the other types of SIC, NRA has the responsibility for the collection of health insurance contributions. The administration of the collected funds for providing medical services is performed by the National Health Insurance Fund /NHIF/.

Only the recognized contributors are eligible to use the services of the state health system (e.g. to enroll as a patient to a general practitioner doctor, to be hospitalized and/or served under a “clinical path”, etc.) which is limited to the basic package of medical services as guaranteed by NHIF Budget. If the contribution history of an insured person cancels for 3 months during the preceding 15 months period she loses her health insurance rights and has to pay the full charge for using any medical services. The insurance rights are restored from the date of payment of the due installments. If a pensioner continues to work after retirement under a labour contract (or other



contractual hired work) or as self-employed, *only the health insurance element* and no other SIC is still due.

The state budget contributes to the health fund for the following categories:

- pensioners, including receivers of disability pensions;
- registered unemployed;
- individuals under 18 years of age;
- students in the state tertiary education system;
- public employees (“civil servants”; military, law enforcement, judicial system, etc.).

The following table presents the rates due to various contributors:

Health insurance				
Year	Insurance rate for employee			Insurance rate for self-insured
	Total rate	% due to employer	% due to employee	
2007	6	3.9	2.1	6
2008	6	3.6	2.4	6
2009	8	4.8	3.2	8
2010	8	4.8	3.2	8

- *Scope and scale*

Table 1.5.1 Social contributions: Contributors

	2007	2008	2009	2010
Population (annual average, million)	7.660	7.623	7.585	7.534
as % of population				
Total number of individuals insured by compulsory SIC	38.12%	38.17%	38.18%	39.93%
I. Insured by an employer	35.00%	34.84%	34.71%	36.98%
1. Insured employees under Labor Contracts:	31.65%	31.48%	31.30%	33.51%
I-st labour category	0.13%	0.09%	0.10%	0.11%
II-nd labour category	1.39%	1.16%	1.40%	1.36%
III-rd labour category	30.13%	30.23%	29.80%	32.04%
2. Insured public servants	1.63%	1.78%	1.81%	1.79%
3. Insured employees under Civil Contracts	0.73%	0.77%	0.87%	1.14%
4. Other insured by employer	0.99%	0.80%	0.73%	0.55%
II. Self-insured individuals	3.12%	3.34%	3.47%	2.95%
Self-insured for all social risks	1.32%	1.45%	1.59%	1.45%
Self-insured only for a pension	1.32%	1.31%	1.22%	1.02%
Self-insured agricultural/tobacco producers (all social risks)	0.19%	0.23%	0.29%	0.19%
Self-insured agricultural/tobacco producers (only pension)	0.30%	0.34%	0.38%	0.29%

Sources: Yearbooks of the National Social Security Institute, 2007-2010 (www.nssi.bg); NSI (www.nsi.bg).



Table 1.5.2 Social contributions: Revenues

	2007	2008	2009	2010
Contributions from compulsory SIC (billion BGN)	3.638	4.198	3.712	3.304
as % of total revenue				
I. Revenues from employers	65.41%	60.91%	58.84%	66.35%
1. Employed under Labor Contracts:	51.67%	47.91%	45.20%	52.56%
III-rd labour category	47.13%	44.48%	41.53%	48.68%
I-st and II-nd labour category	4.54%	3.43%	3.67%	3.88%
2. Public Servants	9.32%	8.73%	9.18%	9.33%
3. Employed under Civil Contracts	0.49%	0.52%	0.47%	0.62%
4. Other	3.92%	3.74%	4.00%	3.85%
II. Revenues from employees	28.58%	33.71%	35.30%	26.93%
III. Self-insured individuals	4.37%	4.16%	4.45%	5.78%
Self-insured for all social risks (without WIOD & Unempl.)	1.82%	1.76%	2.00%	2.82%
Self-insured only for a pension	2.28%	1.93%	2.04%	2.18%
Self-insured agricultural/tobacco producers (all social risks)	0.07%	0.09%	0.12%	0.21%
Self-insured agricultural/tobacco producers (only for pension)	0.09%	0.09%	0.10%	0.24%
Other	0.11%	0.28%	0.19%	0.33%

Source: Yearbooks of the National Social Security Institute, 2007-2010 (www.nssi.bg).

The total number of insured individuals under the compulsory social insurance has increased from 38% in 2007 to 40% in 2010. The vast majority of them (over 90%) are insured by an employer. The share of employees working at I-st and II-nd labour category (in the total number of employed under a labour contract) has decreased from 4.8% in 2007 to 4.4% in 2010. The share of the self-insured (in the total number of insured individuals) has also decreased from 8.2% to 7.4% for the period. In the same time, the share of those self-insured that have chosen to provide social insurance for all social risks (excluding unemployment and work injury) and not only for pension has increased from 48.2% in 2007 to 55.6% in 2010.

The revenues from social insurance in the period 2007-2010 originate predominantly from hired employment earnings – the share of SIC revenues from self-insured individuals amounts to 4-5% for the period. The main reason for this is the fact that the vast majority of self-employed chooses to pay SIC at the minimum threshold. A slight shift is observed in 2010 when NSSI planned to collect SIC from self-employed individuals on the basis of CI at the minimum threshold (BGN 420), however, the actual average CI for this category has reached the level of BGN 440.57 for those insured for all social risks and BGN 429.89 for those insured only for a state pension.² Unfortunately, with the advancement of the economic crisis in 2010 this positive development was outweighed by a drastic reduction in the number of contributors by over 21,000 (or 10%) from the projected level.

1.5 Taxes

1.5.1 Personal Income Tax

Personal income tax /PIT/ (*данък върху доходите на физическите лица*) is levied on the earnings of the individual defined in the system as “physical” (or “natural”) person. The period of taxation with PIT is one fiscal year and the legal regulation of personal income taxation is provided by the Personal Income Tax Act /PITA/. Every individual with taxable income is obliged to submit a Tax Declaration (defined by PITA in detail) about her income. There is an important **exclusion** for this duty – in case that the individual has received income **only from**

² NSSI (2011), *Yearbook on Social Insurance in Bulgaria*, Section “Consolidated State Insurance Budget for 2010”, p.188.



employment relations under a Labour Contract or as a kind of public servant – in this case it is assumed that the employer has calculated, withheld, and transferred the due PIT liability on behalf of the employee and submission of a Declaration is not necessary.

The Tax Declaration consists of several consecutive sections each of which is to be filled out if earnings from the respective source have been received by the individual. Specific preliminary treatment of the income from some sources is applied in the respective sections (for example, in respect of the standard rates for exempting parts of the gross taxable income). After deriving the amounts of tax bases in each section, the total annual tax base is obtained as a sum of the tax bases from the sections. Along with this, the total sum of all PIT amounts that have been withheld by the employers or personally transferred by the individual during the year is also obtained.

PITA identifies the sources of income that are exempted from income taxation, the main of which are:

- (a) all contributory and non-contributory (social assistance) benefits;
- (b) interest on deposits in commercial banks.

Although in a simplified version, table 1.6 presents the arrangement of the aggregate categories of income sources, exemptions and deductions which is typical for the derivation of the tax base for each year of the period 2007-2010.

Table 1.6 Derivation of PIT base

Consolidation of taxable income sources:	
1	Labor relations (regular hired employment: under Labour Contract, Civil Servant, etc.)
2	Business activity (as registered sole entrepreneur)
3	Other economic activity (contractual work /hired labour under Civil Contract/; freelance professions; managerial contracts; innovations /patents, licenses, etc./)
4	Provision of rights or property to be used against compensation (rent)
5	Transfer or exchange of property or rights (e.g. deals with real estate objects, motor vehicles, financial assets, etc.);
6	Miscellaneous sources (gambling or other irregular sources)
7	Specific business activity registered for “patent” taxation
8	Sales of non-processed agricultural products (by registered agricultural/tobacco producers)
9	Ownership of financial assets (shares and other investment instruments or investment schemes, both in the country or abroad)
Deductions and exemptions:	
	Standard exemption for “normatively recognized expenses” (rates vary dependent on the kind of activity)
	<ul style="list-style-type: none"> • <i>income from authorship rights, at creation of scientific or art products</i> • <i>income from agricultural, forestry, and fishery activities</i>
1	<ul style="list-style-type: none"> • <i>income from crafts production or artistic/performance activity</i> • <i>income from contractual work or from practicing a freelance profession</i> • <i>income from managerial contracts</i> • <i>income from rents on real estate or other non-financial assets</i> • <i>income from sales of properties</i>
2	Deduction of compulsory SIC <ul style="list-style-type: none"> • <i>state pension insurance – for both employees and self-employed</i>



- *supplementary mandatory pension insurance – compulsory pension insurance contributions by the employees (allocated to IRAs)*
- *state health insurance – for both employees and self-employed*

3	Deduction for “reduced working ability” – up to BGN 4,800 from the tax base, if: (i) a disabled person declares taxable income, and (ii) this person has at least 50% reduction of working capacity (by medical statement)
4	Deduction of private voluntary pension and/or unemployment insurance contributions (up to 10% of the annual tax base can be deducted)
5	Deduction of private voluntary health and/or life insurance contributions (up to 10% of the annual tax base can be deducted)
6	Standard child deduction (applicable only in year 2007 – BGN 420 for one child under 18 years of age; 840 BGN for two children under 18; 1260 BGN for three or more children under 18)
7	Deduction of donated amounts (up to 5% of the annual tax base reduced by the base from Income Source #2)

Calculation of PIT duty is the last step following all legal exemptions and deductions from the annual sum of taxable incomes. The PIT duty for 2007 is calculated by the following progressive schedule:

Annual tax base	PIT liability
Up to BGN 2,400	–
Over BGN 2,400 to BGN 3,000	20% of the amount over BGN 2,400
Over BGN 3,000 to BGN 7,200	BGN 120 + 22% of the amount over BGN 3,000
Over BGN 7,200	BGN 1044 + 24% of the amount over BGN 7,200

Since 01.01.2008 the progressive income taxation has been abolished and a flat tax rate of 10% was introduced.

PIT on income from sole entrepreneurship

As a typical practice, the entrepreneurial income derives from a *business unit* registered as sole entrepreneur (called “Sole Trader”) according to the regulations of the Commercial Law. This taxable income has to be declared in Section 2 of the Tax Declaration. The tax base from this source is obtained as an annual financial result of the business activity after completing a detailed Statement of Revenues and Expenditures accompanied by a set of accounting documents. The procedure for deriving the tax base from sole entrepreneurship is quite detailed and is practically impossible for simulation by data from household sample surveys. It can be assumed that the net income from this source has been utilized by the family budget and is plausibly recorded in the survey data.

PIT on “patent” activities

This kind of PIT is a version of a small business tax that was introduced in Bulgarian tax system as one of the special measures against the shadow economy, i.e. a measure for reducing the substantial spread of tax evasion during the transition period. After registering for taxation of this kind, the business unit receives a “tax patent” for conducting the respective activity. A “patent tax” registration can be obtained by natural persons or sole entrepreneurs that: (i) have declared for the previous year a maximum threshold of BGN 50,000 as an annual turnover amount, (ii) are not VAT-registered, and (iii) conduct one or more of the following activities:



- 1) Hotel-like places for accommodation with up to 20 rooms;
- 2) Restaurants, fast food and/or drinking establishments, cafeterias, bars, etc.;
- 3) Retail trade establishments with a net trade area up to 100 square meters;
- 4) Paid parking units;
- 5) Barber, cosmetic, massage, hairdresser shops, etc.
- 6) Typewriting and/or copying services establishments;
- 7) Entertainment and/or sports games or similar services;
- 8) Fitness centers, sports facilities and infrastructures;
- 9) Establishments for cleaning, washing, ironing, etc.;
- 10) Mills for flour and other mill products;
- 11) Training service for driver licenses;
- 12) Road services; auto-garages and maintenance services; services with own transport vehicles, agricultural or other machinery, etc.

The patent tax is determined as an annual amount but is to be paid on a quarterly basis in advance of the period of the activity. Its amount is differentiated according to the type of activity, the location (rural/urban, urban zone, etc.), and the declared physical capacities of the registered units. Since 01.01.2008 the patent tax is regulated by the Local Taxes and Fees Act /LTFA/, however, there are no significant changes in its regime. The patent activities are specified in an Annex to LTFA and taxpayers are not levied under the procedure of PITA for the income obtained from these activities. Their only duty as self-insured individuals is to choose a CI base for the purposes of compulsory social and health insurance.

1.5.2 Other direct taxes

Property (real estate) tax (*данък сгради*)

Property tax is a local tax levied on the so called “tax estimate” of the value of any real estate object (building, land spot, etc.). Its revenues are allocated directly to the respective local (or municipal) budget. The tax on buildings is determined along with the sewage fee using differentiated rates on the basis of the tax estimate. The standard rate for real estate objects in buildings is 1.5‰ for 2007, but if a dwelling is categorized as “first-order” (where the owner is living in it) its tax rate is twice lower. Since 2008 the local governments (Municipal Councils) are allowed to set the local tax rates by their own legal act. The National Parliament however has the right to establish limits (minimum and maximum thresholds) for these rates that are compulsory for the local governments.

Inheritance tax (*данък наследство*)

Inheritance tax is also a local tax and is a version of a tax on capital transfer. It is a liability of both the heritor and heritage-giver and emerges as payable at the time of enacting the inheritance. Any kind of assets (both non-financial and financial) can be objects of the tax and its rate is determined differentially for each inheritor depending on her relation to the heritage-giver and the legal evaluation of the amount inherited. If the recipients are the partner and/or/ the children there is no liability for inheritance tax. In other cases the rates vary between 0.7% and 5% for amounts higher than BGN 250,000.

This regime is analogous to the one applied for the Gift Tax (*данък при придобиване на имущество по дарение и по възмезден начин*). Similar capital transfers taxes are levied on any transactions with assets – predominantly real estate, motor vehicles, but also financial (e.g. shares) – as well as on exchange and bestowing transactions. The duties are determined by a legal procedure similar to that of the inheritance tax in order to minimize the potential tax avoidance in deals with real estate or financial assets.

**Motor vehicle tax (*данък превозни средства*)**

Motor vehicle tax is also a local tax regulated by LTFA and is determined by the Municipal Councils. The local government can set the unit tax as much as three times its minimum threshold. Motor vehicle tax is different from the user charge (a vignette sticker) that is necessary to be paid for each vehicle when using the republican (national) roads net. The tax is due to the owners of motor vehicles and is determined according to the power of the engine corrected by a coefficient depending on the year of its first registration. For example, the motor vehicle tax for 2007 varies from BGN 0.34 to BGN 3.69 per 1 kW of engine power.

Corporate profit tax (*корпоративен данък*)

Corporate tax is due by all resident companies – Bulgarian or foreign controlled – that are registered as legal entities under the Commercial Law. Also, non-profit organizations or public bodies that have own divisions operating as business units are also subject to the corporate tax. For the period 2007-2010 the tax rate is 10% and is levied on the corporate profit value specifically assessed by a financial accounting procedure under the regulations of the Accounting Law and the Law on Corporate Taxation.

1.5.3 Indirect taxes.**Value added tax (*данък върху добавената стойност*)**

VAT has been introduced in Bulgaria in 1994 and came to replace the outdated “turnover tax”. It is regulated by the Law on Value Added Tax and its rate for 2007-2010 is 20%. VAT is levied on the sales of domestically produced goods and services as well as on the sale of products imported to Bulgarian market, except on a list of VAT-exempted products. During the EU accession period the legal basis of the tax has been harmonized with the EU *acquis* and a renewed Law on VAT has been enacted since 01.01.2007.

Excise duties (*акцизи*)

Excises regime is regulated by the Excise and Tax Warehouses Act. Excise duties are levied on various products (so called “excise goods”), e.g. alcohol and alcohol beverages, coffee, tobacco products, fuels and energy products (mineral oils, gas, etc.), electricity, and gambling. The amount of each excise duty is determined per unit of the naturally measured quantity of the respective excise good (e.g. per kilogram, liter, cubic meter, etc).



- *Scope and scale*

Table 1.7.1 Taxes: taxpayers (as % of population)

	2007	2008	2009	2010
Population (annual average, million)	7.660	7.623	7.585	7.534
Direct taxes				
Personal income tax	n/a	n/a	n/a	n/a
<i>Self-employed (with employees)*</i>	1.72%	1.61%	1.50%	1.53%
<i>Self-employed (without employees)*</i>	3.05%	3.41%	3.42%	3.22%
<i>Employees*</i>	37.19%	38.62%	37.54%	35.34%
Real estate tax	n/a	n/a	n/a	n/a
Motor vehicle tax	n/a	n/a	n/a	n/a
Corporate profit tax	n/a	n/a	n/a	n/a
Indirect taxes				
VAT	–	–	–	–
Excise	–	–	–	–

Source: * Labour Force Survey /LFS/ estimates; “n/a” not available; “–” not applicable.

Note: LFS provides sample estimates of the number of self-employed in two categories: (1) self-employed with employees: individuals who – alone or in a partnership – run own enterprises /business, farm, professional practice, etc./ and hire at least one employee; (2) self-employed without employees.

Official data about the number of taxpayers is not provided by the tax authorities (NRA). Table 1.7.1 presents sample estimates for the three types of individuals with potential duties on PIT: employees, self-employed with and without employees. Since LFS operates the largest sample used by the official Bulgarian statistics³ (about 44,000 individuals aged 15+) these values could provide a provisional assessment of potential PIT payers. However, it is possible that some of them might not have reported officially any amount of taxable income in their Tax Declaration (i.e. reported zero or negative annual income from their business operations).

Another possible orientation derives from the number of self-insured individuals – although the option of officially reporting zero taxable income by some of them is still valid. Thus, any deviation from these figures can have various explanations related to the discrepancy between the nature of SILC/LFS data (sample surveys, voluntary participation, declarative reporting, self-assessment) and the official procedure for assessment of taxable income (legal regime, compulsory reporting on the basis of formal accounting records).

Table 1.7.2 Taxes: revenue

	2007	2008	2009	2010
Total tax and SIC receipts (million BGN)	19,845	22,084	19,605	19,113
Direct taxes				
D51A. Taxes on individual or household income (excluding holding gains)	9.31%	8.70%	9.78%	10.12%
D51B. Taxes on the income or profits of corporations (excluding holding gains)	12.42%	9.19%	8.15%	6.48%
D29A. Taxes on land, buildings or other structures	0.54%	0.62%	0.88%	1.00%
D91A. Taxes on capital transfers	1.59%	1.64%	0.97%	0.89%
Indirect taxes				
D211. Value added tax	30.98%	33.74%	31.05%	33.52%
D214A. Excise duties and consumption taxes	17.25%	18.52%	18.87%	18.56%

Source: NSI (2011) <http://www.nsi.bg/otrasalen.php?otr=40> (last accessed on 07.11.2011).

³ For a methodological overview of LFS see: <http://www.nsi.bg/otrasal-metodologiaen.php?otr=51>.



Table 1.7.2 presents the data about the main tax revenues which is available from Government Finance Statistics – the most detailed official statistics provided by NSI in ESA'95 classification (taxes and social contributions by type and sub-sectors of General Government). Almost half of the total taxes and SIC receipts originate from indirect taxation. The real estate taxes has a comparatively low share, however, the policy of frequent reassessment of the tax values of real estate objects induced its twofold increase for the four years period. With the advancement of economic crisis the share of corporate profit tax tends to decrease (from 12.4% in 2007 to 6.5% in 2010) but the PIT receipts keep a relatively stable share for the period (9-10%). The introduction of the flat tax in 2008 decreased substantially the tax burden on the highest incomes which was compensated by the increase in taxation at the lower part of income distribution.

2. SIMULATION OF TAXES AND BENEFITS IN EUROMOD

2.1 Scope of simulation

The scope of taxes and benefits in Bulgarian tax-benefit system 2007-2010 simulated by EUROMOD covers only those instruments that have been identified as feasible for simulation in the framework of EU-SILC survey data coverage. Tables 2.1 and 2.2 present the status of simulation feasibility about social benefits and taxes covered by this country report along with brief comments on the main reasons for each instrument not simulated.

- Some items such as VAT and excise taxes are beyond the scope of the model. The reason is the lack of information in the underlying dataset on these items and/or on the components necessary to simulate them in EUROMOD.
- Other items available in SILC were, however, found to be infeasible to simulate due to lack of data which would allow for simulating eligibility conditions and/or conditions for the assessment of tax or benefit amount (e.g. information on contributory history necessary to simulate IOA pension, or on rights necessary for “patent” income tax, etc.).
- In fact, most of the contributory benefits are not simulated by EUROMOD due to lack of data essential for the simulation of entitlement rights (e.g. contribution and/or former employment history /including earnings received/, occurrence of disability or work accident, deceased spouse contribution history, etc.). There are several exclusions from this rule (marked as “partially simulated”). For these cases, some necessary conditions have been plausibly assumed in order to identify eligible individuals and simulate their entitlements.
- As a rule, the major direct income taxes and SIC are simulated (as far as they are assessed on the basis of the gross employment and self-employment available in the EU-SILC database). However, application of some income tax or SIC legal rules in detail is not practically possible due to lack of information about some economic activity type, specific income sources or other elements that are not recorded by the EU-SILC survey. A particular case is the social insurance of the self-employed where the minimum wage is used as a simulation basis for SIC. In reality, the minimum contributory base differs depending on the occupation.
- For some of the contributory and for most of the non-contributory means-tested benefits the assessment unit is the family. Family shall mean parents (married or cohabiting) and their dependent children till the age of 18 or till the age of 20 but only if they are enrolled in school.

Several structural changes can be outlined for the period 2007-2010.

- A major change for the period is the abolishment of the progressive schedule for individual income taxation and the introduction of the flat PIT rate of 10% since 01.01.2008. However, the general scheme for deriving the tax base for PIT was not substantially changed.



- The mechanism for calculating the unemployment benefit has been altered since 01.01.2009: the minimum and maximum amount of the benefit is calculated per day and not per month (the daily amounts were set to BGN 6 in 2009 and 12 in 2010). This regime was abolished since 01.07.2010 but was still active at 30.06.2010.
- Another notable change is the introduction of two lump sum benefits since year 2009: (1) lump sum allowance for raising a child until 1 year of age for mothers who are regular tertiary students, and (2) lump sum allowance for raising twins until 1 year of age.

Table 2.1 Simulation of benefits in EUROMOD

Benefit	Variable name(s)	Treatment in EUROMOD				Why not fully simulated?
		2007	2008	2009	2010	
Unemployment benefit		PS	PS	PS	PS	No data on contribution history; eligibility partially simulated based on observed receipt of the benefit
Benefit for long-term unemployment		E	E	E	E	
Cash benefit for sickness due to general disease		IA	IA	IA	IA	No data on contribution history and sickness duration
Cash benefit for sickness due to employment injury or occupational disease		IA	IA	IA	IA	No data on contribution history and events occurrence
Cash benefit for the quarantine		E	E	E	E	
Cash benefit for sanatorium treatment		E	E	E	E	
Cash benefit for caring for a sick family member		E	E	E	E	
Cash benefit for reassignment		E	E	E	E	
Cash benefit for pregnancy and childbirth		PS	PS	PS	PS	No data on contribution history; eligibility partially simulated based on observed receipt of the benefit
Cash benefit for bringing up child up to age of 2		PS	PS	PS	PS	No data on contribution history; eligibility partially simulated based on observed receipt of the benefit
Monthly allowance for bringing up child up to age of 1		S	S	S	S	
Monthly child allowance for bringing up a child until completion of secondary education but not longer than 20 years of age		S	S	S	S	
Monthly child allowance for bringing up a permanently disabled child up to 18 years of age and until completion of secondary education but not longer than 20 years of age		S	S	S	S	
Lump sum pregnancy grant		IA	IA	IA	IA	
Lump sum allowance upon childbirth		S	S	S	S	
Targeted allowance for pupils		S	S	S	S	
Lump sum allowance for raising a child until 1 year of age for mothers who are regular tertiary students		–	–	S	S	
Lump sum allowance for raising twins until 1 year of age		–	–	S	S	
Pension for insurance and old age /IOA/		IA	IA	IA	IA	No data on contribution history
Pension for invalidity due to general sickness		IA	IA	IA	IA	No data on contribution history and incapacity occurrence
Pension for invalidity due to employment injury or occupational disease		IA	IA	IA	IA	No data on contribution history and incapacity occurrence
Social old-age pension		S	S	S	S	
Social invalidity pension		S	S	S	S	



Survivor's pension	IA	IA	IA	IA	No data on the loss of family members, their contribution history, and benefit split among the relatives
Pension supplement in case of deceased spouse	IA	IA	IA	IA	No data on the loss of family members and their contribution history
Pension from voluntary pension insurance	I	I	I	I	No data on contribution history
Monthly social assistance allowance	S	S	S	S	
Targeted allowance for heating	S	S	S	S	
Monthly allowance for social integration	IA	IA	IA	IA	No information on special purchases or other relevant conditions
Targeted financial support for buying and repairing of supportive means, devices, equipment and medical products	IA	IA	IA	IA	No information on special purchases or other relevant conditions
Supplement for care by assistant	PS	PS	PS	PS	No data on explicit medical certification of a person in need of such care; eligibility taken from data
Scholarships	IA	IA	IA	IA	No information on school achievements and grades

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

Table 2.2 Simulation of taxes and social contributions in EUROMOD

Benefit	Variable name(s)	Treatment in EUROMOD				Why not fully simulated?
		2007	2008	2009	2010	
Employers SIC		S	S	S	S	Only IIIrd category employees; no data necessary to identify the three different categories
Employees SIC		S	S	S	S	Only IIIrd category employees; no data necessary to identify the three different categories
Self-employed SIC		S	S	S	S	
Personal income tax		S	S	S	S	Note: “patent” tax on small businesses excluded
Motor vehicle tax		E	E	E	E	No relevant characteristics of the vehicles owned
Real estate tax		E	E	E	E	No relevant characteristics of the real estate assets owned
Value added tax		E	E	E	E	Out of scope of the model; no data on consumption
Excise taxes		E	E	E	E	Out of scope of the model; no data on consumption

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.



Table 2.3 Means-testing and legal provisions of the social benefits covered by the Country Report for Bulgaria, 2007-2010

Social benefit	Means test	Provided under the regulation of:
1. Unemployment benefit	No	CSI
2. Benefit for long-term unemployment	No	CSI
3. Cash benefit for sickness due to general disease	No	CSI
4. Cash benefit for sickness due to employment injury or occupational disease	No	CSI
5. Cash benefit for the quarantine	No	CSI
6. Cash benefit for sanatorium treatment	No	CSI
7. Cash benefit for caring for a sick family member	No	CSI
8. Cash benefit for reassignment	No	CSI
9. Cash benefit for pregnancy and childbirth	No	CSI
10. Cash benefit for bringing up child up to age of 2	No	CSI
11. Monthly allowance for bringing up child up to age of 1	Yes	LFAC
12. Monthly child allowance for bringing up a child until completion of secondary education but not longer than 20 years of age	Yes	LFAC
13. Monthly child allowance for bringing up a permanently disabled child up to 18 years of age and until completion of secondary education but not longer than 20 years of age	No	LFAC
14. Lump sum pregnancy grant	Yes	LFAC
15. Lump sum allowance upon childbirth	No	LFAC
16. Targeted allowance for pupils	Yes	LFAC
17. Lump sum allowance for raising a child until 1 year of age for mothers who are regular tertiary students	No	LFAC
18. Lump sum allowance for raising twins until 1 year of age	No	LFAC
19. Pension for insurance and old age	No	CSI
20. Pension for invalidity due to general sickness	No	CSI
21. Pension for invalidity due to employment injury or occupational disease	No	CSI
22. Social old-age pension	Yes	CSI
23. Social invalidity pension	No	CSI
24. Survivor's pension	No	CSI
25. Pension supplement in case of deceased spouse	No	CSI
26. Pension from voluntary pension insurance	No	CSI
27. Monthly social assistance allowance	Yes	LSA
28. Targeted allowance for heating	Yes	LSA
29. Monthly allowance for social integration	No	LIPD
30. Targeted financial support for buying and repairing of supportive means, devices, equipment and medical products	No	LIPD
31. Supplement for care by assistant	No	CSI
32. Scholarships	No	Reg.№ 90 & 207*

Abbreviations:

- CSI – Code on Social Insurance (Кодекс за социално осигуряване)
- LFAC – Law on Family Allowances for Children (Закон за семейни помощи за деца)
- LSA – Law on Social Assistance (Закон за социално подпомагане)
- LIPD – Law on Integration of Persons with Disabilities (Закон за интеграция на хората с увреждания)
- * Regulation № 207 of the Council of Ministers: On the conditions for receiving scholarships by pupils after completion of basic education
- * Regulation № 90 of the Council of Ministers: On the conditions and procedure for granting scholarships to students, PhD and other post-graduate students at the state tertiary schools and scientific organizations.



Table 2.3 summarizes the sources of legal regulations of the tax-benefit instruments covered by this Country Report. Regarding the means tested benefits, four of them are child-related allowances which are simulated according to the Law on Family Allowances for Children /LFAC/. As a general rule, for each such benefit the scope of income test excludes any benefit received under the same law. The other three benefits (social old age pension, targeted heating allowance and monthly social assistance allowance) are simulated according to different regulations: the first one under the Code on Social Insurance /CSI/ and the next two under the Law on Social Assistance /LSA/. The benefits provided under LSA are subjected to the same rule as those under LFAC, i.e. the scope of the income tests excludes any benefit received under LSA.

Benefits which entitlement is granted after a submission of a medical evidence for a type/level of disability or pregnancy/childbirth are assumed to have fulfilled this condition. Such benefits are the social invalidity pension, supplement for care by assistant, cash benefit for pregnancy and childbirth, cash benefits for bringing up child up to 2 years of age, monthly child allowance for bringing up a permanently disabled child up to 18 years of age and until completion of secondary education.

Following the logic of the social protection system, the last benefit in the order of simulation should be the social assistance for low income – if the family unit does not have any other sources of income (which otherwise can be received due to various circumstances, e.g. retirement and/or old age, large multi-child families, health problems and/or disability, etc.) or the income is at a very low level, the system evaluates the necessity of income support at a level related to GMI.

2.2 Order of simulation and interdependencies

Table 2.4 EUROMOD Spine: order of simulation, 2007-2010

Policy	Description	Main output
Uprate_bg	Uprating factors	
ConstDef_bg	Definition of constants used in the simulation	
Ildf_bg	Definition of income lists	
Tudef_bg	Definition of tax and benefit units	
corr_taxevasion1_bg	Correction for tax evasion comparing gross and net income from employment (UDB SILC)	
corr_taxevasion2_bg	Correction for tax evasion using information on base for calculating SIC (UDB and national SILC)	
yse_bg	Recoding negative values of self-employment income to 0	
yem_bg	Minimum wage (<i>switched off in the baseline</i>)	yem_s
tscer_bg	Employers social insurance contributions	ils_sicer
tscee_bg	Employees social insurance contributions	ils_sicee
tsese_bg	Self-employed social insurance contributions	ils_sicse
tin_bg	Personal income tax	tin_s
bunct_bg	Unemployment benefit	bunct_s
bmact_bg	Contributory maternity benefit: cash benefit for bringing up child up to age 2	bmact_s
bchba_bg	Contributory maternity benefit: cash benefit for pregnancy and childbirth	bchba_s
bsa00_bg	Social assistance - guaranteed minimum income (<i>1st run</i>)	bsa00_s
bsaht_bg	Means tested benefit for heating (<i>1st run</i>)	bsaht_s
bchmt_bg	Child benefit means-tested (Monthly child allowance for bringing up a child until completion of secondary education but not longer than 20 years of age)	bchmt_s
bched_bg	Targeted allowance for pupils	bched_s
bchbals_bg	Birth grant (also for adoption)	bchbals_s
bmanc_bg	Benefit for raising a child under the age of 1, non-contributory	bmanc_s



bchdied_bg	Monthly child allowance for bringing up a permanently disabled child up to 18 years of age and until completion of secondary education but not longer than 20 years of age	bchdied_s
bchnm01_bg	Lump sum allowance for raising a child until 1 year of age for mothers who are regular tertiary students <i>(switched off in 2007 & 2008)</i>	bchnm01_s
bchnm02_bg	Lump sum allowance for raising twins until 1 year of age <i>(switched off in 2007 & 2008)</i>	bchnm02_s
pdinc_bg	Social invalidity pension	pdinc_s
bdica_bg	Supplement for care by assistant	bdica_s
poamt_bg	Social old-age pension	poamt_s
bsa00_bg	Social assistance - guaranteed minimum income (2 nd run)	bsa00_s
bsaht_bg	Means tested benefit for heating (2 nd run)	bsaht_s

Bulgarian tax-benefit system has not undergone any substantial structural changes for the 4-years period covered, so the spine sequence is identical for all four years. For this reason we present only one table with the suggested order of simulation (table 2.4). The two policies which have been introduced in 2009 (lump-sum allowances for children) are marked as “switched off” in years 2007-2008.

The order of simulation is dependent on some interactions between particular tax and benefit policies. For example, the entitlement for the “lump sum pregnancy grant” (a non-contributory benefit) is granted only for those mothers who have not received “cash benefit for pregnancy and childbirth” (a contributory benefit). Hence, the contributory cash benefit is simulated before the non-contributory one.

The order of simulation is established as a sequence of the social transfers that can facilitate an accurate – as much as possible – application of the income tests. These tests are conducted on the basis of the gross income of the assessment units. In fact, no social transfer is subjected to SIC and PIT so income taxation could be positioned at the start of the policy spine. Employee’s SIC are simulated before PIT since they are deductible from the taxable income assessed for PIT.

2.3 Social benefits

2.3.1 Social invalidity pension (*pdinc_s*)

- **Definition**

The unit of analysis is the individual (*tu_individual_bg*).

- **Eligibility conditions**

This is a non-contributory benefit granted upon a medical referral. The benefit is granted to a resident person with minimum 16 years of age who has officially recognized reduction of the working capacity at a level of 71% or higher.

Social invalidity pension can be received together with the contributory disability pension. In this case the social pension is provided at only 25% of its full level.

- **Income test**

Not applicable

- **Benefit amount**

The amount of the benefit varies according to the degree of reduced working capacity. The amount of the benefit for the people with reduced working capacity between 71% and 90% is



110% of the amount of the social old-age pension. The amount of the benefit for the people with reduced working capacity over 90% is 120% of the social old-age pension.

	2007	2008	2009	2010
Social old-age pension	67.88	80.18	96.70	100.86
Reduction of working capacity:				
71%-90%	74.67	88.20	106.37	110.95
Over 90%	81.46	96.22	116.04	121.03

Note: Figures are in BGN, annual averages, per month.

2.3.2 Supplement for care by assistant (*bdica_s*)

- **Definition**

The unit of analysis is the individual (*tu_individual_bg*).

- **Eligibility conditions**

This is a non-contributory benefit granted upon a medical referral. The benefit is granted to a resident person with reduced working capacity of 90% or higher, and who has been officially recognized as a person in a need of permanent assistance.

- **Income test**

Not applicable

- **Benefit amount**

The amount of the benefit is determined as 75% of the amount of the social old-age pension.

	2007	2008	2009	2010
Social old-age pension	67.88	80.18	96.70	100.86
Supplement for care by assistant	50.91	60.14	72.53	75.65

Note: Figures are in BGN, annual averages, per month.

EUROMOD Note: Based on SILC survey the individuals in need of permanent assistance cannot be verified. Hence, the benefit is simulated for all people with a disability of 90% or higher.

2.3.3 Unemployment benefit (*bunct_s*)

- **Definition**

The unit of analysis is the individual (*tu_individual_bg*).

- **Eligibility conditions**

This is a contributory benefit. It is granted to a resident person who:

- is currently not entitled to an old-age pension;
- is not undertaking an economic activity requiring compulsory social insurance (i.e. employed or self-employed; registered agricultural producer) became unemployed involuntarily;
- has been insured for *at least 9 months* amid the last 15 months before the termination of the employment;
- is registered at the Territorial Public Employment Office as an unemployed person and is ready to accept a proposed job.



- **Income test**

Not applicable

- **Benefit amount**

The amount of the benefit is equal to 60% of the average gross contributory income calculated for the assessment period (the last 9 contributory months within the last 15 months). There are lower and upper limits for the amount:

Monthly thresholds for the unemployment benefit:	2007	2008	2009	2010
Minimum (BGN)	90	90	126	126
Maximum (BGN)	180	190	252	252 – until 30.06.2010 (removed since 01.07.2010)

The benefit is provided for a duration that depends on the length of the contribution history at the moment of benefit assessment. The following table contains the duration of the payment:

Contribution period (years)	0 to 3	3 to 5	5 to 10	10 to 15	15 to 20	20 to 25	Over 25
Payment period (months)	4	6	8	9	10	11	12

EUROMOD Note: The estimation of contributory history is based on the variable for time spent in work (*liwwh*). Previous earnings for those who are observed to receive the unemployment benefit in SILC survey are imputed based on the amount of the benefit (using the inverse function). For those not observed to receive the unemployment benefit in SILC, previous earnings are assumed to be equal to either current earnings or to estimated income from employment.

2.3.4 Contributory maternity benefit: Cash benefit for pregnancy and childbirth (*bchba_s*)

- **Definition**

The unit of analysis is the family (*tu_family_bg*).

- **Eligibility conditions**

This is a contributory benefit provided to mothers who have been insured for a certain period before the childbirth. There is a minimum contributory period at the time the benefit is claimed:

Years	2007	2008	2009	2010
Contributory period	6 months (within the last 12 months)		12 months (within the last 12 months)	

- **Income test**

Not applicable

- **Benefit amount**

The amount of the benefit is 90% of the average gross contributory income calculated for the assessment period (the last 6 contributory months within the last 12 months). There are lower and upper limits for the amount:

Thresholds	2007	2008	2009	2010
------------	------	------	------	------



Minimum (BGN)	Minimum monthly wage		
Maximum (BGN)	Person's net wage		

The benefit is paid for a particular period linked to the birth date. It is split into two parts: (1) 45 days – before the anticipated date of birth delivery; (2) the rest of the days – after the birth.

Years	2007	2008	2009	2010
Payment period	315 days (45 / 270)		410 days (45 / 365)	

In order to determine the period of receipt of the benefit we assume that: (1) the date of birth of any child of age 0 in the sample is in the middle of the month, and (2) the distribution of births along the calendar year is uniform. Then the mean length of the period of receipt is 7 months for years 2007-2008 and 7.4 months for years 2009-2010.

EUROMOD Note: The estimation of contributory history is based on the variable for time spent in work (*liwwh*). Previous earnings for those who are observed to receive the cash benefit for pregnancy and childbirth in SILC are imputed based on the amount of the benefit (using the inverse function). For those not observed to receive the benefit in SILC, previous earnings are assumed to be equal to either current earnings or to an estimated income from employment.

2.3.5 Lump sum allowance upon childbirth (*bchbals_s*)

- **Definition**

The unit of analysis is the family (*tu_family_bg*).

- **Eligibility conditions**

The benefit is a non-contributory benefit performing as a universal birth grant paid to every mother upon childbirth. The benefit is not paid if the child is placed in a specialized child-care institution after the birth.

- **Income test**

Not applicable

- **Benefit amount**

The amount of the benefit depends on the child rank:

Birth grant amount (BGN)	2007	2008	2009	2010
First child	200	250	250	250
Second child	200	600	600	600
Third child	200	200	200	200
Fourth and each subsequent child	100	200	200	200

2.3.6 Cash benefit for bringing up child up to age 2 (*bmact_s*)

- **Definition**

The unit of analysis is the family (*tu_family_bg*).

- **Eligibility conditions**

This is a contributory benefit provided to an insured mother with a dependent child of age 1 until completion of age 2. It is paid after the expiration of the pregnancy-and-childbirth leave during



which the mother receives the cash benefit for pregnancy and childbirth (2.3.4). There is a minimum contributory period at the time of benefit claim:

Years	2007	2008	2009	2010
Contributory period	6 months (within the last 12 months)		12 months (within the last 12 months)	

However, according to the Bulgarian social insurance legislation all periods of leave (paid or not paid) due to pregnancy and childbirth are recognized as a period of insurance.

- **Income test**

Not applicable

- **Benefit amount**

The amount of the benefit is equal to the minimum monthly wage:

Year	2007	2008	2009	2010
Benefit amount (BGN)	180	220	240	240

The benefit is paid for up to 12 months (after 1 year of age and up to 2 years of age of the child).

EUROMOD Note: Assumptions for contributory history and previous earnings are the same as for the cash benefit for pregnancy and childbirth (see 2.3.4).

2.3.7 Monthly child allowance for bringing up a permanently disabled child up to 18 years of age and until completion of secondary education (*bchdied_s*)

- **Definition**

The unit of analysis is the family (*tu_bchdied_bg*). “Permanently disabled” status is recognized if the disability level is 50% or higher.

- **Eligibility conditions**

This is a non-contributory benefit given to the parent of a dependent child with a permanent disability. The benefit is received for each such child in the family regardless of its age and of the receipt of any other social benefits in the family.

- **Income test**

Not applicable

- **Benefit amount**

The benefit amount is established as 70% of the monthly minimum wage.

Year	2007	2008	2009	2010
Benefit amount (BGN)	126	154	168	168



2.3.8 Lump sum allowance for raising a child until 1 year of age for mothers who are regular tertiary students (*bchnm01_s*)

- **Definition**

The unit of analysis is the family (*tu_bmanc_bg*).

- **Eligibility conditions**

This is a non-contributory lump sum benefit for a mother of a child up to age 1 under the condition that she is a regular tertiary student. The benefit can be received if the child is not placed in a specialized child-care institution.

- **Income test**

Not applicable

- **Benefit amount**

The benefit is introduced in 2009 and is determined as a fixed amount.

Year	2007	2008	2009	2010
Benefit amount (BGN)	–	–	2,880	2,880

2.3.9 Lump sum allowance for raising twins until 1 year of age (*bchnm02_s*)

- **Definition**

The unit of analysis is the family (*tu_bmanc_bg*).

- **Eligibility conditions**

This is a non-contributory lump sum benefit for a mother of twins up to age 1. The benefit cannot be received if even one of the children is placed in a specialized child-care institution.

- **Income test**

Not applicable

- **Benefit amount**

The benefit is introduced in 2009 and is determined as 1,200 BGN per child.

Year	2007	2008	2009	2010
Benefit amount (BGN)	–	–	2,400	2,400

2.3.10 Targeted allowance for pupils (*bched_s*)

- **Definition**

The unit of analysis is the family (*tu_bched_bg*).

- **Eligibility conditions**

It is a non-contributory lump-sum allowance paid to a family which has one or more children enrolled in 1st grade at state or municipal schools in the respective calendar year.



- *Income test*

The benefit is paid to a family with average monthly income per family member for the last 12 months up to the following threshold:

Year	2007	2008	2009	2010
Upper threshold (BGN)	200	300	350	350

The benefit is paid to individuals living in families with average monthly income per family member for the last 12 months (preceding the childbirth) up to the following threshold:

Year	2007	2008	2009	2010
Upper monthly threshold (BGN)	200	300	350	350

Calculation of the average income does not apply any equalization method. The income definition for the test includes the **gross income from all sources** of all family members, namely:

- (1) All components of the original (market) income which are defined as taxable by PITA.
- (2) All pensions:
 - pension for insurance and old age /IOA/;
 - pensions for invalidity due to general sickness;
 - pension for invalidity due to employment injury or occupational disease;
 - social old-age pension;
 - social invalidity pension;
 - survivor's pension;
 - pension supplement in case of deceased spouse;
 - pension from voluntary pension insurance.
- (3) All contributory benefits:
 - unemployment benefit (incl. the benefit for long-term unemployment);
 - cash benefit for sickness due to general disease;
 - cash benefit for sickness due to employment injury of occupational disease;
 - cash benefit for pregnancy and childbirth;
 - cash benefit for bringing up a child up to the age of 2.
- (4) All social assistance benefits and allowances:
 - monthly social assistance allowance;
 - targeted allowance for heating;
 - monthly allowances for social integration.
- (5) All tertiary education scholarships (for students, PhD and other post-graduate students).

Exceptions:

- (1) All benefits granted under LFAC:
 - monthly allowance for bringing up child up to age of 1;
 - monthly child allowance for bringing up a child until completion of secondary education (but not longer than 20 years of age);
 - monthly child allowance for bringing up a permanently disabled child up to 18 years of age and until completion of secondary education but not longer than 20 years of age;
 - lump sum allowance upon childbirth;
 - lump sum pregnancy grant;
 - lump sum allowance for raising a child until 1 year of age for mothers who are regular tertiary students;
 - lump sum allowance for raising twins until 1 year of age.
- (2) All secondary education scholarships (for pupils still in secondary school)
- (3) Supplement for care by assistant
- (4) Monthly child allowance for bringing up a permanently disabled child



- **Benefit amount**

Year	2007	2008	2009	2010
Lump-sum amount (BGN)	120	150	150	150

2.3.11 Monthly allowance for bringing up child up to age of 1 (*bmanc_s*)

- **Definition**

The unit of analysis is the family (*tu_family_bg*).

- **Eligibility conditions**

This is a non-contributory allowance paid to mothers of children up to one year of age. The benefit is granted under the condition that the mother is not in receipt of the cash benefit for pregnancy and childbirth (2.3.4) or the cash benefit for bringing up a child up to age of 2 (2.3.6), i.e. it is granted only to the so-called „non-insured mothers”.

EUROMOD Note: Some specific eligibility rules are not simulated here (see section 1.3.3) but a substantial bias is not expected as a result of this.

- **Income test**

The benefit is paid to individuals living in families with average monthly income per family member for the last 12 months (preceding the childbirth) up to the following threshold:

Year	2007	2008	2009	2010
Upper threshold (BGN)	200	300	350	350

The components included in the income test are the same as for benefit 2.3.10.

NB! One change is necessary in the “Exceptions” list: the current benefit (2.3.11: monthly allowance for bringing up child up to age of 1) must be replaced with “targeted allowance for pupils” (2.3.10).

- **Benefit amount**

The monthly amount of the benefit is BGN 100 and is a constant for the period 2007-2010. It is paid each month until the completion of age 1 of the child.

2.3.12 Monthly child allowance for bringing up a child until completion of secondary education (*bchmt_s*)

- **Definition**

The unit of analysis is the family (*tu_bchmt_bg*).

- **Eligibility conditions**

This is a non-contributory allowance paid to families with children up to 18 years of age (or 20 years of age if the child is enrolled in education).



- **Income test**

The benefit is paid to families with average monthly income per family member for the last 12 months up to the following threshold:

Year	2007	2008	2009	2010
Upper threshold (BGN)	200	300	350	350

The components included in the income test are the same as for benefit 2.3.10.

NB! One change is necessary in the “Exceptions” list: the current benefit (2.3.12: monthly child allowance for bringing up a child until completion of secondary education) must be replaced with “targeted allowance for pupils” (2.3.10).

- **Benefit amount**

Year	2007	2008	2009	2010
First child	18	25	35	35
Second child	20	25	35	35
Third child	20	25	35	35
Twins (per child)	20	37.5	52.5	52.5
Permanently disabled child	36	50	70	70

Note: Figures are in BGN, per month.

The amount of the allowance for permanently disabled child is twice the standard amount of the benefit. The amount of the allowance for twins is 50% higher than the standard amount of the benefit (per each child).

EUROMOD Note: Special case: the allowance for a child with permanent disability (i.e. with reduced capacity level of 50% or more) is granted without means-testing.

2.3.13 Social old-age pension (*poamt_s*)

- **Definition**

The unit of analysis is the household (*tu_household_bg*).

The legislation does not use the term “household” but the actual scope of the assessment unit practically includes all individuals which cohabit with the claimant in the same dwelling.

- **Eligibility conditions**

This is a non-contributory benefit granted to a person who has turned 70 years of age. The person should not be in receipt of any other pension.

- **Income test**

The benefit is paid to individuals living alone or in households with annual income per household member which is below a threshold obtained as “annual Guaranteed Minimum Income”:

Year	2007	2008	2009	2010
Monthly GMI (BGN)	55	55	65	65
Annual GMI (BGN)	660	660	780	780

The amount of the “annual GMI” for the test of particular claimant is obtained as a sum of the monthly amounts of GMI for the last 12 months preceding the date of turning the age of 70.

The income definition for the test includes the **gross income from all sources** of all household members, namely:

(1) All components of the original (market) income which are defined as taxable by PITA.



- (2) All pensions:
 - pension for insurance and old age /IOA/;
 - pensions for invalidity due to general sickness;
 - pension for invalidity due to employment injury or occupational disease;
 - social old-age pension;
 - social invalidity pension;
 - survivor’s pension;
 - pension supplement in case of deceased spouse;
 - pension from voluntary pension insurance.
- (3) All contributory benefits:
 - unemployment benefit (incl. the benefit for long-term unemployment);
 - cash benefit for sickness due to general disease;
 - cash benefit for sickness due to employment injury of occupational disease;
 - cash benefit for pregnancy and childbirth;
 - cash benefit for bringing up a child up to the age of 2.
- (4) All family benefits:
 - monthly allowance for bringing up child up to age of 1;
 - monthly child allowance for bringing up a child until completion of secondary education but not longer than 20 years of age;
 - monthly child allowance for bringing up a permanently disabled child up to 18 years of age and until completion of secondary education but not longer than 20 years of age;
 - targeted allowance for pupils;
 - lump sum allowance for raising a child until 1 year of age for mothers who are regular tertiary students;
 - lump sum allowance for raising twins until 1 year of age.
- (5) Irregular income sources (e.g. lottery winnings, bequests, etc.).

Exceptions:

- (1) All benefits granted under LSA:
 - monthly social assistance allowance;
 - targeted allowance for heating.
- (2) Supplement for care by assistant
- (3) All allowances for social integration of disabled people
- (4) Lump sum pregnancy grant
- (5) Lump sum grant upon childbirth.

- ***Benefit amount***

Year	2007	2008	2009	2010
Social old-age pension	67.88	80.18	96.70	100.86

Note: Figures are in BGN, annual averages, per month.

2.3.14 Targeted allowance for heating (*bsaht_s*)

- ***Definition***

The unit of analysis is the household (*tu_household_bg*). See also the definition in 2.3.14.

- ***Eligibility conditions***

This is a non-contributory allowance granted to lone persons or households with low incomes.



- **Income test**

The allowance is granted to households whose average income per household member is below the threshold of the so-called “Differentiated Minimum Income for Heating” (DMIH). DMIH is calculated as a percentage of the Guaranteed Minimum Income (see 2.3.14) and varies from 144% of the GMI for an adult living in the same lodging with his/her spouse to 288% of the GMI for a person aged 75 years or more who lives alone. The following table contains the levels of DMIH for various categories of persons.

Category of person	2007	2008	2009	2010
person living alone	175.0%	210.0%	210.0%	210.0%
person with reduced working capacity of 50% or more living alone	175.0%	249.6%	249.6%	249.6%
orphan child	164.0%	196.8%	196.8%	196.8%
lone parent with one or more children aged under 18 (under 20 for children attending school)	208.0%	249.6%	249.6%	249.6%
two spouses living together (per each spouse)	120.0%	144.0%	144.0%	144.0%
child aged between 0-18 (up to 20 when studying)	131.0%	157.2%	157.2%	157.2%
child with permanent disabilities	164.0%	196.8%	196.8%	196.8%
person cohabiting with other persons	168.0%	201.6%	201.6%	201.6%
pregnant woman 45 days before the term	153.0%	183.6%	183.6%	183.6%
parent taking care of a child under age of 3	153.0%	183.6%	183.6%	183.6%
person over the age of 70	153.0%	183.6%	183.6%	183.6%
person over the age of 75 living alone	240.0%	288.0%	288.0%	288.0%
person over the age of 65 living alone	229.0%	274.8%	274.8%	274.8%
person with reduced working capacity of 50% or more	153.0%	183.6%	183.6%	183.6%
person with reduced working capacity of 70% or more	186.0%	223.2%	223.2%	223.2%
person with reduced working capacity of 90% or more	229.0%	274.8%	274.8%	274.8%

Calculation of the average income does not apply any equalization method. The income definition for the test is the same as defined for 2.3.14.

Exceptions:

- (1) All benefits granted under LSA: monthly social assistance allowance.
- (2) Supplement for care by assistant
- (3) All allowances for social integration of disabled people
- (4) Lump sum pregnancy grant
- (5) Lump sum grant upon childbirth.

- **Benefit amount**

The amount of the benefit is determined by the Minister of Labour and Social Policy for each “heating season” (a period of 5 months: from November to March). It is paid for each month of the heating season. For the season 2007/2008 it is differentiated according to the heating type. Since heating season 2008/2009 the amount of the allowance is the same for all heating types.



Type	2007/2008 heating season	2008/2009 heating season	2009/2010 heating season
Electricity	60.45	56.50	55.23
Central heating	60.45	56.50	55.23
Natural gas	36.00	56.50	55.23
Solid fuel	31.90	56.50	55.23

Note: Figures are in BGN, per month of the heating season.

EUROMOD Note: Given data on the number of recipients depending on the heating type, an average value of the heating benefit has been assumed for the simulation. Furthermore, this benefit (as the monthly social assistance allowance) is included in the income test for the means-tested child benefits. At the same time, means-tested child benefits are included in the income test of social assistance benefits. That is why, the simulation of the targeted allowance for heating is run twice – before the simulation of the means-tested child benefits and right after that.

2.3.15 Monthly social assistance allowance (*bsa00_s*)

- **Definition**

The unit of analysis is the household (*tu_household_bg*). See also the definition in 2.3.14.

- **Eligibility conditions**

This is a non-contributory allowance granted to households with low incomes. However, there are particular categories of persons who are non-eligible for this benefit. If such persons are part of the household, then they should be removed from the assessment unit. These categories are:

- adults up to 30 years of age, living with their parents, whose income exceeds 3 times the amount of GMI, unless these adults and/or their parents are not disabled persons;
- persons who have relatives that are legally obliged to maintain them;
- persons accommodated for more than 30 days in medical, social, military or other institutions;
- persons studying in high schools or in evening form of education, including pupils who are enrolled in private schools (exceptions: disabled persons, pregnant women, and parents caring for a child up to age 3);
- persons who have refused cultivating state or municipal land suggested to them;
- persons who have travelled abroad during the last 12 months, except for medical reasons or because of the death of a family member (i.e. suggesting that if such persons can afford travelling abroad, they are not in need of social assistance); however, since June 1st 2010 this rule has been abolished.

In addition, the right to monthly social assistance benefits depends on the following conditions:

- the claimant should live in a lodging composed of maximum 1 room per household member;
- the claimant should not possess mobile and immobile assets that can be a source of income, except for the belongings that serve the usual needs of the family (this is evaluated by the social worker);
- the claimant should not have contracts for a transfer of property in return for the obligation for support and care (e.g. caring for lone elderly owners);
- the claimant should not have acquired residential or summerhouse property or ideal parts of such property through purchase or donation during the last 5 years.

EUROMOD note: It is assumed that all additional requirements for granting a monthly social assistance allowances are met.



- *Income test*

The allowance is granted to households whose average income per household member is below the threshold of the so-called “Differentiated Minimum Income” (DMI). DMI is determined for each category of a beneficiary as a percentage of GMI (see 2.3.14). It is calculated for each individual depending on her/his age, health, family and educational status. The sum of all DMIs represents the DMI for the whole assessment unit (the household). The individual DMIs vary between 30% of GMI for a child between 7 and 16 years of age (20 years of age when studying) and 165% of GMI for a person aged 75 or more who lives alone. The following table contains the levels of DMI for various categories of persons.

Category of person	2007	2008	2009	2010
person over the age of 75 living alone	165.0%	165.0%	165.0%	165.0%
person over the age of 65 living alone	140.0%	140.0%	140.0%	140.0%
person over the age of 65, cohabiting with other persons	100.0%	100.0%	100.0%	100.0%
person under the age of 65 living alone	73.0%	73.0%	73.0%	73.0%
person under the age of 65, cohabiting with other persons	66.0%	66.0%	66.0%	66.0%
two spouses living together (per each spouse)	66.0%	66.0%	66.0%	66.0%
person with reduced working capacity of 50% or more	100.0%	100.0%	100.0%	100.0%
person with reduced working capacity of 70% or more	125.0%	125.0%	125.0%	125.0%
child aged between 0 and 16 (up to 20 if attending school)	75.0%	91.0%	91.0%	91.0%
child aged between 7 and 16 (up to 20 if attending school), if having 5 or more unexcused absences from school	30.0%	30.0%	30.0%	30.0%
child aged between 7 and 16 and not attending school	37.0%	20.0%	20.0%	20.0%
orphan or child accommodated in a host family	100.0%	100.0%	100.0%	100.0%
child with permanent disability	100.0%	100.0%	100.0%	100.0%
lone parent taking care of a child under age of 3	120.0%	120.0%	120.0%	120.0%
lone parent with one or more children aged under 16 (under 20 if attending school)	100.0%	100.0%	100.0%	100.0%
pregnant woman 45 days before the term	100.0%	100.0%	100.0%	100.0%
parent taking care of a child aged under 3	100.0%	100.0%	100.0%	100.0%

Calculation of the average income does not apply any equalization method. The income definition for the test is the same as defined for 2.3.14.

Exceptions:

- (1) All benefits granted under LSA: targeted allowance for heating.
- (2) Supplement for care by assistant
- (3) All allowances for social integration of disabled people
- (4) Lump sum pregnancy grant
- (5) Lump sum grant upon childbirth.



- **Benefit amount**

The amount of the benefit is determined as a difference between the DMI of the household and the gross family income from all sources, excluding the aforementioned exceptions.

Example: The household consists of: two adults (spouses), one child aged 16 and studying, and one more adult aged up to 65. Those persons do not have any sources of income but social assistance benefits.

Step 1: Calculating DMI

DMI = DMI 1st spouse (66% GMI) + DMI 2nd spouse (66% GMI) + DMI 1st adult (66% GMI) + DMI child (91% GMI) = BGN 42.9 + BGN 42.9 + BGN 42.9 + BGN 59.2 = BGN 187.85

Step 2: Calculating incomes

All cohabiting persons don't have any incomes in the defined range, i.e. their income is 0.

Step 3: Calculating benefit amount

Benefit = DMI – incomes = 187.85 – 0 = 187.85

EUROMOD Note: This benefit (as the targeted allowance for pupils) is included in the income test for the means-tested child benefits. At the same time, means-tested child benefits are included in the income test of social assistance benefits. That is why, the simulation of the monthly social assistance is run twice – before the simulation of the means-tested child benefits and right after that.

2.4 Social contributions

For the purposes of EUROMOD simulation Bulgarian social insurance system is represented with its major components levied on both employed and self-employed individuals. Several minor exclusions are made which is not expected to distort substantially the simulation results.

Depending on the occupation and the risk undertaken at work individuals may refer to I-st, II-nd or III-rd labour category. Based on the category employer's SIC vary. However, labour category of employees is not directly recorded in SILC survey data. Hence, it is assumed that all employees in the sample belong to the III-rd labour category. This assumption is based on the fact that the vast majority of employees (over 95% /table 1.7/) are hired under III-rd category labour regime. An underestimation bias could be expected regarding the simulation of SIC that are due to the employers. However, this bias is of minor significance because cases of employment on II-nd and especially on I-st category are rarely met in the population of employed.

The social insurance and personal income taxation systems have not undergone substantial structural changes for the period after 2008-2010 which allows a unified representation of simulation policies for the period 2007-2010. For all cases of simulation of SIC and PIT the tax unit is *tu_individual_bg*.



2.4.1 Employee social contributions

Table 2.4.1.a Social insurance contribution rates for employees at Labour Contract

	2007	2008	2009	2010
1. Pension Fund				
1.a. PF rate for persons born before 1960	8.05	8.8	8.0	7.1
1.b. PF rate for persons born after 1959	6.3	6.8	5.8	4.9
2. Supplementary Mandatory Pension Insurance Fund				
2.a. SMPIF rate for persons born before 1960	–	–	–	–
2.b. SMPIF rate for persons born after 1959	1.75	2.0	2.2	2.2
3. General Sickness and Maternity Fund	1.225	1.4	1.4	1.4
4. Unemployment Fund	1.05	0.4	0.4	0.4
5. Work Injury and Occupational Disease Fund	–	–	–	–
6. Health insurance	2.1	2.4	3.2	3.2
Total	12.425	13.0	13.0	12.1
Upper threshold for the contributory income (BGN)	1400	2000	2000	2000
Minimum wage (BGN)	180	220	220	240
Average contributory income (BGN)	398	501	555	570

Table 2.4.1.a contains the SIC rates that are applied on the amount of contributory income /CI/ of the individual earned on Labour Contract. The rates are levied on a monthly basis.

- CI includes all gross incomes from hired employment on Labour Contract received during the month.
- The table includes the rates applicable to III-rd category labour (the rate applied for the Supplementary Mandatory Pension Insurance /or “second pillar”/ is allocated to a Universal Pension Fund). Classification of the job as I-st or II-nd labour category does not change the social insurance due by the employee.
- There is an upper threshold for the monthly CI when the compulsory SIC are assessed – they are not due on the fraction of income beyond the threshold.
- If the employee is in receipt of IOA pension then she has a duty only for health insurance.

EUROMOD Note: The following assumptions are made:

- The first one concerns the minimum thresholds for the monthly contributory base. The survey does not provide data for reliable identification of each category for which a different minimum threshold is normatively set. So, we assume that the minimum level of the contributory income is the national minimum wage. However, employers and employees with earnings below the minimum wage do not pay any SIC.
- Labour remuneration for each month of the year is not available in EU SILC survey. Hence, the average monthly amount of the earnings is assessed on the basis of the annual gross employment income (PY010G) and the number of months in hired employment as declared by the individual during the survey.
- Table 2.4.1.b contains the SIC rates that are due on the earnings for hired employment under a Civil Contract. Such employment relation is the typical form of irregular hired employment which can provide income that is supplementary to the regular income source (e.g. employment, self-employment, pension, etc.).

This social insurance component is not simulated in 2007-2010 policy systems due to lack of reliable data about remunerations received on Civil Contracts in the national SILC survey. Any gross earnings from Civil Contracts are merged with the major source, i.e. the earnings from Labour Contracts. For this reason, an overestimation bias could be expected regarding the compulsory SIC. However, this bias is of minor significance due to the following reasons:



- a. *Partial exemption.* The gross remuneration on a Civil Contract is reduced for social insurance and income tax purposes by the standard exemption applied to obtain CI.
- b. *Low levels of SIC rates on the skipped items.* The total rates applied on CI from Labour and Civil Contracts differ by less than 2 percentage points. This reduction is due to the following skipped items: (3) General Sickness and Maternity Fund; (4) Unemployment Fund. So, the amount of the overestimated SIC (due to the application of Labour Contract SIC rates also on the contributory bases from Civil Contracts) is expected to be of minor magnitude.
- c. *Low share in the total employment income.* According to sample estimates from Bulgarian Household Budget Survey the share of employment income obtained from irregular sources has dropped from 9.6% in 2007 to 4.3% in 2010. However, this survey partially records irregular labour earnings obtained from the shadow economy which are actually out of income taxation scope. For this reason, the share of earnings from Civil Contracts that are officially reported for taxation purposes is much lower. As a result, the share of employers' SIC revenue from this source is less than 1% of total revenues from Labour and Civil Contracts (see table 1.8; sources: NSSI Yearbooks 2007-2009).

Table 2.4.1.b Social insurance contribution rates for employees at Civil Contract

	2007	2008	2009	2010
Rate for standard exemption from gross income	35%	35%	25%	25%
1. Pension Fund				
1.a. PF rate for persons born before 1960	8.05	8.8	8.0	7.1
1.b. PF rate for persons born after 1959	6.3	6.8	5.8	4.9
2. Supplementary Mandatory Pension Insurance Fund				
2.a. SMPPIF rate for persons born before 1960	–	–	–	–
2.b. SMPPIF rate for persons born after 1959	1.75	2.0	2.2	2.2
3. General Sickness and Maternity Fund	–	–	–	–
4. Unemployment Fund	–	–	–	–
5. Work Injury and Occupational Disease Fund	–	–	–	–
6. Health insurance	2.1	2.4	3.2	3.2
Total	10.15	11.2	11.2	10.3
Upper threshold for the contributory income	1400	2000	2000	2000

2.4.2 Employer social contributions

The clauses stated in the preceding section 2.4.1 (regarding the employee share of SIC) are valid also for the SIC due by the employers. Hereafter only the specific issues are presented regarding the duties of the employer of an employee hired on a Labour Contract, on a Civil Contract, or as a Public Servant.

2.4.2.1 Contributions for hired employment on Labour Contract

Since this is the typical case of a regular labour relation, SIC due to the employer are set in more detail (see table 2.4.2.1a).

- The duty on “Work Injury and Occupational Disease” /WIOD/ Fund varies from 0.4% to 1.1% depending on the type of economic activity of the employer.
- For employees working under I-st or II-nd category Labour Contract an additional component emerges regarding the second pillar – contribution to Professional Pension Fund. The rates on this fund increase from 0 (for category III) to 7% (category II) and 12% (category I). The rate applied for the III-rd category (allocated to a Universal Pension Fund) is held constant for all three categories.



Table 2.4.2.1.a Social insurance contribution rates for employers-insurers on Labour Contract – III-rd labour category

Labour Category III	2007	2008	2009	2010
1. Pension Fund				
1.a. PF rate for persons born before 1960	14.95	13.2	10.0	8.9
1.b. PF rate for persons born after 1959	11.7	10.2	7.2	6.1
2. Supplementary Mandatory Pension Insurance Fund				
2.a. SMPIF rate for persons born before 1960	–	–	–	–
2.b. SMPIF rate for persons born after 1959	3.25	3.0	2.8	2.8
3. General Sickness and Maternity Fund	2.275	2.1	2.1	2.1
4. Unemployment Fund	1.95	0.6	0.6	0.6
5. Work Injury and Occupational Disease Fund	0.7*	0.7*	0.7*	0.7*
6. Health insurance	3.9	3.6	4.8	4.8
Total	23.775	20.2	18.2	17.1

EUROMOD Notes:

- The exact WIOD rate is not simulated since it is infeasible to identify the necessary categorization of the employer in the EU SILC survey data. For simulation purposes a uniform value is assigned at the mean level (0.7%).
- It is assumed that all employees belong to the III-rd labour category. That is why for the simulation of the policy “SIC paid by employers” only the III-rd category contributory rates are considered. Table 2.4.2.1b shows the SIC for I-st and II-nd labour categories.

Table 2.4.2.1.b SIC rates for employers-insurers on Labour Contract – Ist and II-nd category

Labour Category II				
1. Pension Fund				
1.a. PF rate for persons born before 1960	17.95	16.2	13.0	11.9
1.b. PF rate for persons born after 1959	14.7	13.2	10.2	9.1
2. Supplementary Mandatory Pension Fund				
2.a. SMPIF rate for persons born before 1960				
PPF (Professional Pension Fund)	7.0	7.0	7.0	7.0
UPF (Universal Pension Fund)	–	–	–	–
2.b. SMPIF rate for persons born after 1959				
PPF (Professional Pension Fund)	7.0	7.0	7.0	7.0
UPF (Universal Pension Fund)	3.25	3.0	2.8	2.8
3. General Sickness and Maternity Fund	2.275	2.1	2.1	2.1
4. Unemployment Fund	1.95	0.6	0.6	0.6
5. Work Injury and Occupational Disease Fund	0.7*	0.7*	0.7*	0.7*
6. Health insurance	3.9	3.6	4.8	4.8
Total	33.775	30.2	28.2	27.1
Labour Category I	2007	2008	2009	2010
1. Pension Fund				
1.a. PF rate for persons born before 1960	17.95	16.2	13.0	11.9
1.b. PF rate for persons born after 1959	14.7	13.2	10.2	9.1
2. Supplementary Mandatory Pension Fund				
2.a. SMPIF rate for persons born before 1960				
PPF (Professional Pension Fund)	12.0	12.0	12.0	12.0
UPF (Universal Pension Fund)	–	–	–	–
2.b. SMPIF rate for persons born after 1959				
PPF (Professional Pension Fund)	12.0	12.0	12.0	12.0
UPF (Universal Pension Fund)	3.25	3.0	2.8	2.8
3. General Sickness and Maternity Fund	2.275	2.1	2.1	2.1
4. Unemployment Fund	1.95	0.6	0.6	0.6
5. Work Injury and Occupational Disease Fund	0.7*	0.7*	0.7*	0.7*
6. Health insurance	3.9	3.6	4.8	4.8
Total	38.775	35.2	33.2	32.1



- Contributions for hired employment on Civil Contract are not simulated in 2007-2010 policy systems (see EUROMOD Note in 2.4.1).

2.4.2.2 Contributions for hired employment as a Public Servant – credited SIC

This is the typical case of hired employment in the public administration system. Other special cases of central government jobs (e.g. military, judicial, and law enforcement employees) have almost the same treatment by the compulsory social insurance, thus no separate simulation is conducted about them. Table 2.4.2.2 contains the total SIC rates which are entirely due by the employer of public employees (no contributions are paid by the employees), up to the maximum thresholds.

Table 2.4.2.2 Social insurance contribution rates for employers-insurers of Public Servants

	2007	2008	2009	2010
1. Pension Fund				
1.a. PF rate for persons born before 1960	23	22	18	16
1.b. PF rate for persons born after 1959	18	17	13	11
2. Supplementary Mandatory Pension Insurance Fund				
2.a. SMPPIF rate for persons born before 1960	–	–	–	–
2.b. SMPPIF rate for persons born after 1959	5	5	5	5
3. General Sickness and Maternity Fund	3.5	3.5	3.5	3.5
4. Unemployment Fund	3	1	1	1
5. Work Injury and Occupational Disease Fund	0.7	0.7	0.7	0.7
6. Health insurance	6	6	8	8
Total	36.2	33.2	31.2	29.2
Upper threshold for the contributory income	1400	2000	2000	2000

EUROMOD Note: Identification of such employees is informed by the national SILC survey concerning the type of hired employment contracts on the main job as declared by the individuals for the respective income year.

2.4.3 Self-employed social contributions

Self-employed individuals have a legal duty to contribute to social insurance funds at a minimum level which covers only pension and health insurance. The rates for this compulsory state social and health insurance are presented in table 2.4.3.

- A self-employed individual can choose a particular monthly value for her contributory base which could be higher than the minimum threshold and up to the ceiling. However, it is assumed that the contributory income for each self-employed is equal to her income from self-employment.
- Compulsory SIC are due by entrepreneurs and other self-employed only for those months during which they have conducted business activity (i.e. have maintain records for business expenditures and revenues).

Table 2.4.3 Social insurance contribution rates for self-employed

	2007	2008	2009	2010
1. Pension Fund	23%	22%	18%	16%
2. Health insurance	6%	6%	8%	8%
Total	29%	28%	26%	24%
Thresholds for the contributory base for self-employed:				
Lower threshold	220	240	260	420



Upper threshold	1400	2000	2000	2000
Lower threshold for the contributory base for registered agricultural or tobacco producers:				
If this is their only source of income (25%)	55	60	65	105
If there are also other sources (50%)	110	120	130	210

EUROMOD Note: Simulation of SIC on income from self-employment is performed using a contributory base recorded by the national SILC survey. Self-employed individuals can expand the range of the insurance risks by deliberately contributing to “General Sickness and Maternity” Fund but this decision cannot be taken into account in the simulation.

2.5 Personal income tax (PIT)

2.5.1 Tax unit

Personal Income Tax (Данък върху доходите на физическите лица): PIT system in Bulgaria is based on the taxation of the individual so the tax unit used for the assessment of PIT duties is *tu_individual_bg*. When assessing the standard child deduction for 2007 the family tax unit is used (*tu_tintach_bg*). The definition of a dependent child is standard and, additionally, the child must not be married or be a parent.

PIT is due by any resident person who has earned income from one or more taxable sources in Bulgaria or from abroad during the fiscal year. It is assumed that an individual having one or more sources of taxable income *different from the earnings from employment on Labour Contract or on Public Servant Contract* has submitted a Tax Declaration about her income.

2.5.2 Exemptions

A wide range of sources are exempted from personal income taxation (27 items explicitly defined in PITA). The main sources of income that are not included in the range of taxable income are:

- (a) all social insurance benefits and social assistance allowances;
- (b) income from private pension insurance (after regularly obtaining the right for pension);
- (c) income from interest on deposits in local commercial banks as well as on treasury bills and bonds issued by the central or local governments;
- (d) insurance indemnities and compensations received;
- (e) income obtained by registered agricultural or tobacco producers from selling unprocessed agricultural goods;
- (f) income from deals with shares of public companies traded on the regulated Bulgarian stock exchange market, etc.

2.5.3 Tax allowances and tax credits

2.5.3.1 Tax deductions at itemized taxable income sources

Tax deductions are applied in numerous sections of the Tax Declaration where each itemized tax base is obtained for every taxable income source. Table 2.5.3.1 presents the deductions from the major income sources that constitute the consolidated tax base on PIT.



Table 2.5.3.1 Derivation of itemized tax bases from the main income sources

	2007	2008	2009	2010
1. Earnings from Labour Contract				
Gross earnings				
SIC	10.325%	10.6%	9.8%	8.9%
HIC	2.1%	2.4%	3.2%	3.2%
Tax base = Gross earnings – SIC – HIC				
2. Earnings from Civil Contract				
Gross earnings				
Normatively recognised expenditures (NRE)	35%	25%	25%	25%
Taxable income = Gross earnings – NRE				
SIC	8.05%	8.8%	8.0%	7.1%
HIC	2.1%	2.4%	3.2%	3.2%
Tax base = Taxable income – SIC – HIC				
3. Income from self-employment as sole entrepreneur				
Gross self-employment earnings				
SIC	23%	22%	18%	16%
HIC	6%	6%	8%	8%
Tax base = Gross earnings – SIC – HIC				
4. Other sources of self-employment income				
Gross self-employment earnings from each source				
NRE (separate by income source)				
• Freelance professions	35%	25%	25%	25%
• Agricultural activity (processed products)	70%	*	*	60%
• Forestry and fishery activity	60%	40%	40%	40%
• Income from crafts, trade with decorative plants	50%	40%	40%	40%
• Artistic/performance activities	50%	40%	40%	40%
• Income from authorship rights (scientific/art products)	70%	40%	40%	40%
Taxable income = Gross Earnings – NRE				
SIC	23%	22%	18%	16%
HIC	6%	6%	8%	8%
Tax base = Taxable income – SIC – HIC				
5. Incomes from renting (real estate, non-financial assets)				
Gross income				
NRE	20%	10%	10%	10%
Taxable income = Gross income – NRE				
SIC	–	–	–	–
HIC	6%	6%	8%	8%
Tax base = Taxable income – SIC – HIC				

* This source of income is exempted from the tax base in 2008 and 2009.

EUROMOD Notes:

- Simulation of deductions for item 2 is performed under the regime of item 1 (due to merging of the minor to the major source of income from hired employment).
- Deductions for the items 4 are not simulated due to lack of split of the income sources (i.e. merged to item 3 in the self-employment income variable PY050G /yse/). This way these minor sources are treated in their full recorded amount under the regime of item 3. This may lead to some overestimation of SIC and PIT which, however, is insignificant as the importance of these sources to the self-employment income formation is negligible.
- Simulation of deductions for item 5 is conducted using gross income provided by the variable “HY040G: Income from rental of a property or land” (ypr) attached to the main income earner.



2.5.3.2 Tax allowances and credits from the consolidated tax base

The tax allowances and credits are subtracted from the consolidated tax base before the final calculation of PIT duty. The final tax base is obtained by reduction of the consolidated tax base by the amount of allowances. These allowances are stipulated in annual values. The standard child deduction applied only in 2007 can be utilized fully only by one of the parents receiving taxable income and living with children.

Table 2.5.3.2 Tax allowances from the consolidated tax base

Allowances (annual amounts)	2007	2008	2009	2010
1. Standard deduction for permanently disabled persons, BGN (i.e. with 50% or higher level of disability)	up to 4800	up to 7920	up to 7920	up to 7920
2. Deduction for voluntary social, unemployment, health and life insurance (max.% from the consolidated tax base)	10%	10%	10%	10%
3. Standard child deduction				
For 1 child (BGN)	420	–	–	–
For 2 children (BGN)	840	–	–	–
For 3 and more children (BGN)	1260	–	–	–
4. Deduction of bequests (max.% from the consolidated tax base)				
• For social and health institutions, Red Cross, NGOs	5%	5%	5%	5%
• For sponsoring cultural events or products	15%	15%	15%	15%
• For the National Fund “Children’s Health”	50%	50%	50%	50%

EUROMOD Notes:

- The tax credit on item 2 (voluntary insurance) is simulated on the basis of the standard variable PY035 (private pension expenditures, ypp). These deductions are likely to underestimate the actual level due to the narrow scope of recording (only pension insurance) and possible underreporting by respondents. This may result in a negligible overestimation bias in simulated PIT duties.
- The tax credit on item 4 (donations) are not simulated due to data limitations.

2.5.4 Tax base

On the first stage, the consolidated tax base is obtained by summing-up all itemized tax bases from the specified taxable income sources. On the second stage, the final consolidated tax base is further reduced by the allowances in Table 2.5.3.2 (if applicable to a particular individual).

2.5.5 Tax schedule

The tax schedule applied to the annual amount of final consolidated tax base in 2007 is progressive and is presented in the following table:

Bracket number	Lower limit	Upper limit	Rate
1	0	2400 BGN	0%
2	2400 BGN	3000 BGN	20% of the amount over 2400 BGN
3	3000 BGN	7200 BGN	120+22% of the amount over 3000 BGN
4	7200 BGN		1044+24% of the amount over 7200 BGN

The tax rate for 2008, 2009 and 2010 is flat: 10% of the final consolidated tax base.



3. DATA

3.1 General description

The Bulgarian data set for EUROMOD 2007-2010 simulation, used also as a baseline data set for the model (BG_2008_b1), is derived from the EU-SILC standard UDB 2008 (income year 2007) where the aggregated social transfers (family benefits and social exclusion benefits) in UDB have been disaggregated by its main components based on benefit imputations. Hence, this data set is based on UDB plus the imputed split benefits (no use of national SILC variables has been made). A detailed description of the benefit splitting can be found in 3.4.3. An alternative data set (BG_2008_a1) has been derived from the EU-SILC standard UDB 2008 (income year 2007) and augmented with selected variables from the national SILC survey.

The UDB and national SILC data sets contain information from wave 2008 of the Bulgarian SILC survey which is implemented as a 4-year rotating household panel survey since wave 2006. The field work for the observation usually takes place in the period April-July each year.

The 2008 EU-SILC sample is designed as a stratified two-stage cluster sample representative for all private households in the country and is stratified by administrative districts and urban-rural type of residence. The primary sampling units are the so called “census enumeration clusters” and the final sampling units are the households. At the first stage, PSUs are selected with probability proportional to size (i.e. the number of households) and at the second stage the households are selected by systematic sampling within the respective cluster.

According to the EU-SILC general guidelines the data about living conditions, housing, and social exclusion is collected at the household level while personal, labour, and health information is recorded at the individual level – for each person aged 16 or over. Income components data is partially recorded at the individual level, however, some components are included in the household section of SILC.

Table 3.1 EUROMOD database description

EUROMOD database	BG_2008_b1 and BG_2008_a1
Original name	Статистика на доходите и условията на живот, 2008
Provider	National Statistical Institute of Bulgaria
Year of collection	2008
Period of collection	April-July 2008
Income reference period	Year 2007
Sampling	Two stage cluster sampling
Unit of assessment	Household ¹
Coverage	Private households ²
Sample size	6523 HH (3588 longitudinal 2006 and 2007, 2935 drawn 2008) 12191 IND ³
Response rate	66.6% ⁴

Notes:

¹ “Household” is defined as a person living alone or a group of people who live together in the same dwelling and share expenditures, including the joint provision of the essentials of living. Family members living together but not sharing their income and expenditure with other family members make up separate households.

² Population Census 2001 provides the statistical frame for the SILC sample. It includes all private households and their current members residing in the territory. Persons living in collective households and in institutions are excluded from the target population.

³ Number of persons of 16+ years who are members of the households and who completed a personal interview which is accepted for the database.

⁴ The number of households that completed the interview which is accepted for the database is 4344.



A database compiled during the 2001 Population and Dwellings Census in Bulgaria was used as a sampling frame. The database includes all private households and their current members residing in the respective territory. Persons living in collective households and in institutions are excluded from the target population. Students' and workers' hostels are excluded at the first stage of selection of PSUs because these individuals rarely stay on the same addresses and are difficult for tracing.

The sampling frame was updated according to the administrative changes occurred regarding the statute of some settlements (e.g. some villages were re-categorized as towns; transitions of municipalities or settlements from one administrative district to another were ratified, etc.). Different response rates within the strata are obtained in 2006 and 2007, therefore, a decision was taken to oversample those strata in which lower response rates are expected. Data from 2007 national SILC survey was used for oversampling.

The sample is stratified by the administrative-territorial districts of the country (28 districts, NUTS3 level) and the type of residence of the household. As a result 56 strata are formed (28 of urban and 28 of rural population). In order to apply PPS sampling of clusters the settlements are sorted within each stratum according to the number of their population. The clusters on the first stage are chosen with probability proportional to size (i.e. the number of households in the PSUs). Systematic random sampling of secondary units (households) in each selected PSU is applied and 5 households are selected from the PSU. Addresses and household data within the selected PSUs are updated according to the Information System "Demography" /ISD/ data⁴.

3.2 Sample quality and weights

3.2.1 Non-response

The following issues should be taken into account when considering the non-response in Bulgarian EU-SILC survey.

- Participation in the survey is voluntary so NSI has no means to compel any household to get involved and/or imperatively extract any piece of information. NSI staff makes efforts to persuade the respondents in that it guarantees the protection of individual data and the prevention of any misuse, including the access of other governmental agencies (like NRA) to individual records. Even though the households are informed about the goals, content, and conditions of the survey the likelihood of unit non-response still remains significant.

- One particular reason of unit non-response is related to the accuracy of the statistical frame. Addresses and household data within the PSUs are updated according to ISD data which includes information from 2001 Population and Housing Census updated by current demographic statistics (based on the National Civil Registration System). However, both internal and external migration of the population – which is not always precisely recorded at the local registers – causes distortions in these registers. Moreover, the data in ISD is updated with some delay, sometimes it can take from 6 to 12 months. Finally, as there is a period of 2 months between the selection of households and the start of survey, over-coverage, under-coverage and misclassification may occur.

⁴ Elaboration of the ISD started in 2005 and it is used officially since 2007. This system includes data from 1992 and 2001 Population Censuses and from the current demographic statistics since 1995 up to now. The data source for the natural movement and the internal migrations is the National Civil Registration System.



- The number of households for which an interview is finally accepted for the database amounts to 66.6% of the total sample of households in EU-SILC 2008. The dropouts of units are due to the following main reasons:

- ✓ addresses non-contacted (7.3%), e.g. address cannot be accessed, address currently does not exist, etc.
 - ✓ addresses contacted, but households do not complete the interview (26%) due to refusal to cooperate, absence of almost entire household, objective inability to respond, etc.;
 - ✓ finally, from 4349 completed questionnaires 5 are rejected (0.1%) and 4344 are accepted in the database.
- No substitution of units was applied in 2008 EU-SILC survey. Unit non-response has been addressed by re-weighting the responding cases.

3.2.2 Weights

Bulgarian part of EU-SILC 2008 UDB contains weights that are derived by NSI according to the EU-SILC weighting procedure recommended by Eurostat. The weighting factors are calculated in order to take into account the units' probability of selection, non-response, and to adjust the sample to external data. External statistics about the distributions of households and persons in the target population by gender, age groups, and urban-rural type of residence (NUTS 2 level) are utilized for this purpose. The general procedure of the derivation of weights can be described as follows.

- For the 2008 fraction of the panel the *design weights* are equal to the inverses of the corresponding household inclusion probabilities. These weights are household design weights DB080. For the rotational groups from years 2006-2007 corrections for attrition are performed to obtain base weights for 2008. Prior to any corrections, persons that became out-of-scope in 2008 – dead, institutionalized, or left the country for a longer period – are not considered as non-response.

- Correction for *non-response* was done to the design weights computed at the previous step. The procedure consists in modifying the design weights by a factor inversely proportional to the response rate within each "homogeneous group". Coefficients of these corrections were computed separately for each settlement as ratios: sum of design weights of selected units to the sum of design weights of responding units.

- The weights calculated at the previous step are *adjusted to external sources* (calibration). Calibration is done at the individual level imposing equality of the weight adjustment factors (g-weights) for the individuals in the same household.

After the calibration the final household cross-sectional weights are obtained (DB090). These are then used in the EUROMOD input data set (dwt). Personal cross-sectional weight (RB050) is equal to the cross-sectional weight DB090 of its household. Personal cross-sectional weights for all household members aged 16+ (PB040) are obtained by correction of RB050 for within household non-response.

Table 3.2 Descriptive Statistics of the Grossing-up weight DB090 (=RB050).

Number	12191
Mean	626.7
Median	540.2



Maximum	3124.7
Minimum	48.3
Max/Min	64.7
Decile 1	254.6
Decile 9	1105.8
Dec 9 / Dec1	4.34

For EUROMOD dataset construction purposes no re-weighting was performed about the Bulgarian part of EU-SILC database.

Bulgarian EU-SILC sample is designed to represent a reference population of 7,640,238 individuals in 2,599,605 households. Table 3.2 contains the main descriptive statistics for the grossing-up weight DB090.

3.2.3 Item non-response and under-reporting

All personal and household income variables were collected by a face-to-face interview (by the so called PAPI /Paper-Assisted Personal Interview/ method). Data on income obtained by the interviews is expected to underestimate particular sources of income. One major reason for this is the lag (6 months on average) between the interview and the income reference period. Apart from the typical inclination of economically active individuals to report lower than the actual earnings, in many cases, respondents just have difficulties in recalling the amounts of some income sources.

The approach adopted by NSI for the treatment of item non-response and underreporting was to compare for some cases the recorded labour income with individual level data provided by the NSSI and other administrative data sources. Hence, particular cases from the previous EU-SILC waves have been checked with the data from 2006-2007 surveys. This matching procedure allowed NSI to identify extreme values – either very low or very high – among employment and self-employment earnings as well as various mismatches.

Although some respondents reported relatively high income values it is doubtful that their SIC are assessed at the actual income level. This was found by the matching exercise under which the survey data was compared to NSSI register data. On the other hand, some persons who (according to the NSSI register) were employed at minimum wages, defined themselves as unemployed or non-active for year 2007 – most likely because they assessed their employment as temporary and did not indicate any income. As a total, 8.7% of the employed persons aged 16+ have missing values for the “employee cash or near cash income” (PY010N or yem).

There is a general awareness about Bulgarian EU-SILC that self-employment income has been underreported. However, the item non-response rate is relatively low – for example, using control questions in the national SILC survey about 7.6% of the persons aged 16+ are identified as potential earners of self-employment income, of which: 6.7% actually report such income, 0.6% provide some partial information, and only 0.3% do not report any income (i.e. have missing values on PY050). Also, incomes from interests or dividends in unincorporated businesses – related to HY090G variable – are in general not provided by the respondents (only 0.4% of the households).

Generally, a comparison of the aggregated income from sample surveys with the national accounts data about the household sector is not reliable since the data sources are completely different (e.g. national accounts aggregates are compiled using data from employers’ reports on the payroll bills). However, comparisons with two other sample surveys – namely Household Budget Survey /HBS/ and Labour Force Survey /LFS/ can provide useful insights. When comparing HBS and EU-SILC surveys as data sources some discrepancies should be taken into



account. The differences are to great extent brought about by the methodological divergence, the main elements of which are the following.

- Different reference periods for the income variables – in HBS the reference period is one month and, following Eurostat’s recommendation, the annual income is obtained as 12 times the monthly income (which in the case of irregular income, like that from farming, can bring about considerable distortions). In EU-SILC the reference period is the previous calendar year and the survey records an annual lump-sum or an average monthly amount.
- Treatment of in-kind income – HBS collects information about both the income in cash and in-kind, while in EU-SILC – only about the income in cash, with a few exceptions (which may be important for the income from farming and social benefits other than retirement pay and pensions).
- Different means of data collection – in HBS the respondents make records in the so called “Household Diary”. They have to determine the data sources themselves and do not have them listed in the diary. In EU-SILC each respondent is asked detailed questions.
- Data imputations – in EU-SILC the missing income data are imputed while there is no imputation in HBS.
- Weighting – unlike EU-SILC data, HBS data are not weighted.
- Sample size – HBS operates a nationally representative sample of about 3000 households – twice smaller than EU-SILC sample and hence having less chance to include a larger variety of family and/or income units.
- Substitution – initially sampled units that refused to cooperate or could not be observed for other reasons have been substituted in HBS by additionally drawn units, whereas no substitution has been applied in EU-SILC survey.

Table 3.3 Comparison of selected results from EU-SILC 2008, HBS 2008, and LFS 2008

	HBS 2008	LFS 2008	EU-SILC 2008
<i>Self-defined current economic status (grossed-up estimates)</i>			
Employed (PL030 = 1,2)		3 316 965	3 365 621
Unemployed (PL030 = 3)		434 842	605 764
Economically inactive (PL030=4,5,6,7,8,9)		2 773 877	2 477 712
Missing		1 717	1 578
<i>Status in employment (grossed-up estimates)</i>			
Employees		2 943 331	2 906 677
Self-employed without employees		259 907	264 702
Self-employed with employees		122 944	157 070
Family worker		33 934	36 048
Missing		–	1 123
<i>Age groups (%)</i>			
0-15	12.7		14.5
16-24	9.8		12.0
25-49	30.2		35.7
50-64	23.3		20.5
65+	24.1		17.3
<i>Status in employment (%)</i>			
Employer	1.6		3.4
Self-employed	6.9		7.2
Employee	91.4		88.4
Family worker	0.1		1.0
<i>Nonmonetary household deprivation (%)</i>			
Telephone	6.1		9.6
Color TV	1.7		5.3
Computer	72.1		72.4
Washing machine	24.0		31.0
Car	57.7		57.0



Source: NSI (2009), Intermediate Quality Report, EU-SILC 2008 Operation, Bulgaria.

Anyway, EU-SILC survey can be evaluated as a more reliable source in respect of the economically active population which can be seen in the comparison table 3.3. All the three sample surveys (HBS, LFS and SILC) are part of the National Programme for Statistical Studies and are organized and executed by NSI. As far as HBS operates a much smaller sample, allows substitutions, and does not weight the observations we can assume that SILC survey data are of higher quality than HBS. On the other hand, LFS sample is drawn by a design similar to SILC, however, its size is considerably larger (about 20,000 households with about 44,000 individuals of age 15 or more).

Having in mind the comparisons of the main income aggregates the observed disparities are not substantial in respect of labour earnings and old age benefits (e.g. PY100G (poa) overestimates the official ESSPROS figure by about 6%). However, the aggregated amounts and number of recipients of social transfers such as unemployment, means-tested family and social assistance benefits are underestimated by SILC. Possible explanations for the underreporting are very low levels of some benefits, recall errors, stigma, merging and/or misclassification of benefits at the recording phase, etc.

3.3 Data adjustment

Data adjustments were performed occasionally as a result of edit checks and other controls. These validations were implemented for ensuring data correctness and consistency. For example, two external databases – at household and personal level – were used for verifying correctness of identifiers and for checking against previously collected information (e.g. household composition, birth dates, gender, etc.) for those individuals who are not observed for the first time.

All gross income values were checked whether they are equal or greater than the net values and whether the net values are greater or equal than half the gross values (so called “soft error” check). Also, lower and upper boundaries were used to check for most of recorded social transfer components (e.g. social benefits, pensions) based upon the national legislation. Extreme income values (outliers) were compared with data provided by NSSI, other administrative sources, and data from previous waves.

The person-level National SILC survey records the main items of the maternity benefits that are by nature related to the social insurance rights of the insured individuals. Though, if an individual receives family-related social insurance benefits she is generally not eligible for non-contributory social assistance benefits. NSI checks for consistency of data collection in this particular case and adjusts the data records accordingly.

Relevant corrections and adjustments are conducted if necessary, e.g. if some values are found to exceed the maximum possible amounts of unemployment, old-age, survivor, sickness and disability benefits. Adjustments have been performed also in order to correct for possible double registration of income components. As typical examples, in particular cases child allowances or personal income from agriculture, property or land were found to be recorded in both household and individual questionnaires.



3.4 Imputations and assumptions

3.4.1 Time period

The reference period for the various attributes is:

- demographic variables (age, marital status, education): at the date of the interview;
- economic activity status: recorded both at the date of interview (RB210) and for each month during the income reference year (PL210A-L);
- current employment variables: at the date of the interview;
- income data: calendar year 2007 (based on 12-months period of receipt);
- housing, durables possessions, financial, social, and health situation of household: at the date of the interview;

All monetary incomes in the Bulgarian part of EUROMOD database are converted into monthly levels. For this purpose, information from economic activity status (PL210) and the number of months spent at work (PL070, PL072) (yemmy) is utilised. Calculations in EUROMOD assume that the income is received at a constant monthly rate throughout the year.

3.4.2 Gross incomes

Bulgarian SILC 2008 survey provided the respondents with the option of reporting their income net or gross at component level, nevertheless, they were encouraged to record the gross values. In the vast majority of cases, however, the form in which the amounts were recorded in the database was net of both income tax and SIC. In the same time, each respondent was asked to record explicitly the average contributory base on which she has been insured by the employer (or has paid SIC as self-insured individual) during the income year. This amount was used for the calculation of SIC and PIT duties by “forward calculation” according to the respective legislation (about PIT and compulsory SIC).

However, when both the gross income and the information on the contributory base was missing these amounts were imputed by “backward calculation” applying the PIT-SIC rules on the net income. This net-to-gross conversion was performed internally by NSI without making special adjustments for tax evasion, i.e. assuming full tax compliance. The procedure was informed by all the relevant information available in the national SILC database. Moreover, administrative records from NSSI were used to assist this procedure. The gross income was obtained by summing up the assessed PIT duty and compulsory SIC to the recorded net income.

NSSI maintains a register of all persons for whom employers transfer social insurance contributions (i.e. the insured persons) and of all self-insured persons. NSSI register contains data for the personal income, however, it is limited to the amount of the monthly contributory income on which SIC have been assessed and transferred to NSSI accounts. In respect of the self-employed individuals the national SILC survey requires information on PIT and SIC actually paid, but when it was missing these amounts were imputed according to the tax and social insurance rules. The procedure takes into account the minimum and maximum thresholds for SIC on self-employment income (see section 1.4).

When partial unit non-response is identified (with missing values for total personal income of some individuals in the household) imputation is performed according to Eurostat recommendation. The missing total personal income is imputed by a regression model of personal income on a set of explanatory variables like gender, age class, household composition, etc. The



imputed values are used for the derivation of the within-household non-response inflation factor (HY025).

3.4.3 Other imputed variables

A range of EU-SILC target variables have been obtained after aggregation of several country-specific items that are recorded by the national SILC survey. A typical case is the target variable HY050 “Family / Children related allowances” (bfa) which is an aggregate variable that includes the items of the following two main categories of benefits: Maternity benefits and Family allowances (see 1.3.3). Table 3.4.3.1. contains the main variables that are derived for the Bulgarian part of EUROMOD dataset by imputations. Table 3.4.3.2. contains data on the SILC variables and their imputed correspondent. Columns (1) and (2) show the aggregated amounts and number of recipients for each component of the aggregated variables while columns (3) and (4) show spending and number of recipients for the imputed variables. Finally, the last two columns show the ratios between SILC and imputed variable.

The splitting of the family benefits has been done by replicating the eligibility criteria in Stata. As the ratios on aggregated amounts and recipients show, family benefits have been more problematic to impute than social assistance and unemployment benefits. The main reason is the large number of benefits included in the aggregate variable bfa, the overlap of the eligibility criteria of many of the benefits and the simultaneous receipt of more than 1 benefit of the majority of the recipients. This made the disentangling of the separate benefits very difficult. Where benefits such as the “Parental paid leave for bringing up child up to age 2” (bmact) and “Lump sum benefit for childbirth” (bchbals) were rather straightforward to impute the imputation of the rest of the family benefits was cumbersome which is reflected in the results in the last two columns. The imputed “Lump sum benefit for first year pupils” (bched) shows both higher amount of spending and recipients than the data in the national SILC although slightly lower aggregated amount and somewhat higher number of recipients compared to external data. The other three benefits – “Cash benefit for pregnancy and childbirth” (bchba), “Monthly benefit for bringing up child up to age 1” (bmanc) and “Monthly child allowance” (bchmt) – are underestimated although the median of the imputed benefits in the three cases is larger than the median of the SILC benefits. However, the imputed bmanc shows closer ratios when compared to external statistics. By reporting the benefit there is a high possibility that some mothers might have confused the non-contributory benefit (bmanc) with the contributory one (bchba) since bmanc is reported before bchba⁵. Hence, they might have reported bchba under bmanc which explains why the aggregated amount of bmanc is overreported in SILC compared to external statistics. But the imputation of bmanc has been done by simply replicating the eligibility criteria for bmanc and assuming that this has been done accurately then this is why the imputed variable shows better results (than the national SILC variable) when compared to external statistics.

On the other hand, the two largest social assistance benefits “Monthly monetary SA benefit” (bsa00) and “Targeted benefit for heating” demonstrate excellent results in terms of imputations. Unfortunately, an accurate splitting of the benefits was not possible by replicating the eligibility criteria because the entitlement for bsa00 and bsaht is defined by more or less the same criteria. This led to an overestimation by around 40ppt of both the spending and number of recipients of the imputed bsa00. The imputed average benefit was the same as the average benefit in SILC, though. The conclusion was that the imputation can be calibrated if bsa00 is taken away from the beneficiaries placed in the lowest part of the benefit distribution. A loop was set up till the optimal amount of spending, number of recipients and average benefit was achieved. The bsaht has been derived as the difference between the aggregate variable bsa and bsa00. However, since bsa

⁵ The question about bmanc is asked in the household questionnaire and comes before the question about bchba which is part of the personal questionnaire.



consists of four and not just two components, the subtraction lead to an overestimation of bsaht. Hence, a similar loop was applied for the benefit bsaht till achieving the optimal results.

Unemployment benefit bunct has been imputed by replicating the eligibility criteria in the statistical software Stata. Based on information about working history (liwwh) the number of months of paid social insurance contributions prior to the receipt of the benefit has been derived. This information together with the minimum and maximum amount of the benefit has been used in order to impute bunct. The aggregate amount is overestimated by 17ppt where the number of recipients is underestimated by 10ppt. As a result, the average benefit is also slightly overestimated.



Table 3.4.3.1. Other imputed variables from EU-SILC 2008

Variable	Component of
Lump sum benefit for pregnancy	HY050
Lump sum benefit for childbirth	HY050
Monthly allowance for bringing up a child, up to age 1	HY050
Monthly allowance for raising a child, until completion of secondary school	HY050
Cash benefit for pregnancy and childbirth	HY050
Cash benefit for bringing up a child up to age 2	HY050
Targeted benefits for heating	HY060
Monthly allowance for low income	HY060
Unemployment benefit	PY090

Table 3.4.3.2. Imputed variables

		National SILC: Aggregated amount (thousand) (1)	National SILC: Number of recipients (2)	Imputed aggregated amount (thousand) (3)	Imputed number of recipients (4)	Ratio (3)/(1)	Ratio (4)/(2)	External statistics: Aggregated amount (thousand) (7)	External statistics: Number of recipients (8)	Ratio (3)/(7)	Ratio (4)/(8)
bfa	Family benefits (total)	384,592	799,864								
bchba	Cash benefit for pregnancy and childbirth (обезщетение за бременност и раждане на дете)	80,217	62,681	71,246	37,810	0.89	0.60	95,324	n/a	0.75	n/a
bmact	Parental paid leave for bringing up child up to age 2 (обезщетение за от-глеждане на дете до 2 г.)	101,000	74,418	87,163	73,241	0.86	0.98	114,797	n/a	0.76	n/a
bchbals	Lump sum benefit for childbirth (еднократна помощ при раждане)	11,949	58,419	12,317	63,446	1.03	1.09	13,662	69,754	0.90	0.91



bched	Lump sum benefit for first year pupil (целева помощ за ученици)	3,253	23,635	4,214	35,113	1.30	1.49	4,695	29,105	0.90	1.21
bmanc	Monthly benefit for bringing up child up to age 1 (месечна помощ за отглеждане на дете до 1 г. възраст)	36,810	51,784	30,420	29,001	0.82	0.56	29,494	23,638	1.03	1.23
bchmt	Monthly child allowance (месечна помощ за отглеждане на дете)	140,000	496,107	87,485	272,075	0.63	0.55	192,648	835,012	0.45	0.33
bchprls	Lump sum benefit for pregnancy (еднократна помощ при бременност)	4,148	24,523	n/a	n/a	n/a	n/a	2,860	19,193	n/a	n/a
	Monthly child benefit for raising a child with permanent disability (месечна добавка за отглеждане на дете с трайни увреждания до завършване на средно образование)	7,215	8,297	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Monthly benefit for bringing up small child with permanent disability (месечна помощ за отглеждане на дете с трайни увреждания до 2 г.)	n/a	n/a	n/a	n/a	n/a	n/a	33,844	19,754	n/a	n/a
	Social benefits for children accommodated at relatives, foster family, etc. (помощи за отглеждане на дете, настанено в приемно семейство или близки)	n/a	n/a	n/a	n/a	n/a	n/a	4,587	4,763	n/a	n/a
bun	Unemployment benefits (total)	50,258	58,045					86,353			
bunct	Unemployment benefit (обезщетение за безработица)	32,496	48,070	38,035	43,335	1.17	0.90	98,998	65,072	0.38	0.67
	Assistance for dismissal (обезщетение при съкращение)	17721	n/a	n/a	n/a	n/a	n/a	54,691	n/a	n/a	n/a
bsa	Social assistance (total)	81,842	268,987								



bsa00	Monthly monetary SA benefit (месечна парична помощ поради ниски доходи)	34,982	46,329	35,674	46,128	1.02	1.00	65,758	76,532	0.54	0.60
bsaht	Targeted benefit for heating (целева помощ за отопление)	39,361	196,154	39,097	197,890	0.99	1.01	76,477	355,284	0.51	0.56
	Occasional lump-sum social aid (еднократна помощ за инцидентно възникнали потребности)	n/a	n/a	n/a	n/a	n/a	n/a	1,098	169,522	n/a	n/a
	Targeted benefits for free travelling (целева помощ за безплатно пътуване)	n/a	n/a	n/a	n/a	n/a	n/a	7,038	n/a	n/a	n/a



3.4.4 Correction for tax evasion

In the simulation of social insurance contributions, income tax and means-tested child and social assistance benefits, a correction for tax evasion has been taken into account. The approach can be summarized as follows:

The baseline is based on the UDB dataset in which the benefit disaggregation has been informed by imputations (BG_2008_b1). The user can apply tax evasion correction through the policy `corr_taxevasion1_bg` which is based on a comparison between net and gross employment incomes. Under this approach, it is assumed that an individual is involved in the shadow economy if her (positive) net and gross employment incomes are equal. Such an individual is assumed to be a full tax evader and hence, no income tax and social insurance contributions are simulated for her. Furthermore, for the simulation of the income test for child and social assistance benefits, the earnings of a tax evader are not taken into account because it is assumed that they will not be reported and thus, will not be part of the income test. No correction for individuals with self-employment income has been done.

The data set based on UDB and national SILC variables (BG_2008_a1) allows for more precise correction for tax evasion. National SILC survey asks for specific information about the level of earnings on the basis of which individuals have paid SIC and PIT or so called formal earnings. The available variable provides an opportunity for opposing this contributory amount to the total earnings reported in the SILC survey. If the social insurance contributory base is observed lower than the reported earnings but larger than zero we assume that the individual has been involved (partially) in a shadow economic activity. In this case, we used this declared insurance base instead of reported earnings to simulate social insurance contributions and taxes. This led to the achievement of more accurate simulation results for the social insurance of employees where the total aggregated amount of the simulated components matches better to the official revenue statistics. The same approach was applied to the earners of self-employment income; however, although a substantial improvement of the simulation results has been achieved, the simulated revenues from social insurance contributions paid by self-employed are still 1.9 times higher than the official statistics. This could be attributed mainly to the identification of quite larger number of such earners – about twice more than the official number of self-employed individuals. The correction for tax evasion affects the simulation of means-tested child and social assistance benefits by taking lower, formal earnings for calculating the income test. The policy that enables the correction for tax evasion is included in the spine (“`corr_taxevasion2_bg`”).



3.5 Updating

Updating of 2007 monetary levels recorded by Bulgarian EU-SILC 2008 is conducted on the basis of official statistical data from sources chosen to be as close as possible to the definition and scope of EUROMOD variable. In some cases data was not available for the particular definition so a more general aggregate was utilized for the purpose. The distribution of individual and household characteristics remains intact as recorded in 2008.

Table 3.5 Updating factors

Index	Income Source/index type	2007/2008	2007/2009	2007/2010
<i>default</i>	Annual CPI (inflation)	1.120	1.148	1.183
<i>yds</i>	INCOME : Disposable	1.172	1.235	1.238
<i>yem</i>	INCOME : Employment	1.207	1.276	1.230
<i>yot</i>	INCOME : Other	1.206	1.064	0.552
<i>ypp</i>	INCOME : Private Pension	2.756	0.911	1.035
<i>ypr</i>	INCOME : Property	1.013	0.776	0.908
<i>ypt</i>	INCOME : Private Transfers	1.108	0.867	1.118
<i>yse</i>	INCOME : Self Employment	1.030	1.014	1.002
<i>bfa</i>	BENEFIT/PENSION : Family	1.265	1.912	1.929
<i>bchprls</i>	Lump sum benefit for pregnancy	0.928	1.037	0.942
<i>bchbals</i>	Lump sum benefit for childbirth	1.837	2.155	2.030
<i>bmanc</i>	Monthly allowance for bringing up child up to age 1	0.962	0.920	0.983
<i>bchmt</i>	Monthly allowance for raising a child, until completion of secondary school	1.305	1.860	1.999
<i>bchba</i>	Cash benefits for pregnancy and childbirth	2.075	3.157	3.303
<i>bmact</i>	Benefits for bringing up of a child younger than 2	1.124	1.111	1.096
<i>bhl</i>	BENEFIT/PENSION : Health	1.470	1.831	1.614
<i>bho</i>	BENEFIT/PENSION : Housing	2.141	3.374	
<i>bsa</i>	BENEFIT/PENSION : Social Assistance	1.177	1.137	1.209
<i>bsa00</i>	Guaranteed minimum income benefit	0.559	0.472	0.579
<i>bsaht</i>	Heating benefit	0.855	0.864	0.687
<i>bunct</i>	BENEFIT/PENSION : Unemployment	1.132	2.631	3.451
<i>pdi</i>	BENEFIT/PENSION : Disability	1.090	1.378	
<i>poa</i>	BENEFIT/PENSION : Old Age	1.203	1.482	
<i>psu</i>	BENEFIT/PENSION : Survivors	1.209	1.492	
<i>tpr</i>	TAX : Property tax	1.149	0.603	
<i>tis</i>	TAX: Income Tax and SIC	1.086	1.067	1.039



<i>tin</i>	TAX: Income Tax	1.040	1.039	1.100
<i>tscee</i>	TAX: SIC: Employee	1.373	1.396	1.207
<i>tscse</i>	TAX: SIC: Self Employed	1.087	1.136	1.045
<i>tscer</i>	TAX: SIC: Employer	1.000	0.951	0.997
<i>afc</i>	ASSETS : Financial Capital	0.667	0.872	
<i>xhc</i>	EXPENDITURE : Housing cost	1.107	1.187	1.198
<i>xhcot</i>	EXPENDITURE : Housing cost : Other	1.106	1.198	1.231
<i>xhcrt</i>	EXPENDITURE : Housing cost : Rent	1.111	1.227	1.257
<i>xmp</i>	EXPENDITURE : Maintenance Payment	1.102	1.173	1.179
<i>xpp</i>	EXPENDITURE : Private Pension (voluntary)	2.756	0.911	1.035

Sources:

- default, xhc, xhcot, xhcrt, xmp – NSI, Harmonised CPI 2007-2010;
- yds, yem, yot, ypr, ypt, yse – NSI, Household Budget Survey 2007-2010;
- tpr, tis, tin, tscee, tscse, tscer – NSI, National Accounts ESA'95, 2007-2010;
- bfa, bhl, bho, bun, pdi, poa, psu – NSI, ESSPROS statistics on social protection, 2007-2009 (HBS for 2010);
- afc – NSI, Financial Accounts 2007-2009;
- bsa, bsa00, bsaht, bchbals, bchprls, bchmt, bchba, bmanc, bmact – NSSI, Annual Reports 2007-2009 (conferred with ESSPROS data);
- ypp, xpp – Financial Supervision Commission, Statistics on Social Insurance Market, 2007-2010.

4. VALIDATION

4.1 Aggregate Validation

There are not any substantial differences between the definitions applied in EUROMOD and Bulgarian 2008 EU-SILC survey. Table 4.1 shows in detail the components involved in the construction of disposable income at each of the definitions.

EU-SILC gross income is obtained following the standard Eurostat instruction regarding the common elements. The disposable household income variable is derived after the subtraction of the regular taxes on wealth (HY120G), income tax and SIC (HY140G), and any regular transfers paid to other households (HY130G).



Table 4.1 Components of disposable income

	EUROMOD [2007-2010]	Bulgarian EU-SILC 2008 [income year 2007]
	ils_dispy	HY020
Employee cash or near cash income	+	+
Employer's social insurance contribution	–	–
Contributions to individual private pension plans	n/a	n/a
Cash benefits or losses from self-employment	+	+
Pension from individual private plans	+	n/a
<i>Unemployment benefits</i>	+	+
<i>Old-age benefits</i>	+	+
<i>Survivor' benefits</i>	+	+
Sickness benefits	+	+
Disability benefits	+	+
Education-related allowances	+	+
Income from rental of a property or land	+	+
<i>Family/children related allowances</i>	+	+
Social exclusion not elsewhere classified	+	+
Housing allowances	+	+
Regular inter-household cash transfer received	+	+
Interests, dividends, etc.	+	+
Income received by people aged under 16	+	+
<i>Regular taxes on wealth</i>	n/a	–
<i>Regular inter-household cash transfer paid</i>	–	–
<i>Tax on income and social contributions</i>	–	–
<i>Repayments/receipts for tax adjustment</i>	n/a	n/a

4.1.1 Validation of incomes inputted into the simulation

Table 4.2 presents the annual average level of employment and unemployment in Bulgaria for the period 2007-2010. The official number of employed – as collected by the annual compulsory census of enterprises – underestimates the actual number because of the systematic downward bias of the employment



figures officially reported by small and medium-sized businesses /SMEs/. For this reason LFS is preferred since it estimates the quarterly number of employed and unemployed taking into account the actual employment status of the sampled individuals at the critical moment of observation. This way the official LFS statistics are suggested as a better source of external statistics due to two main reasons:

- i. methodological consistency of the identification of target individuals;
- ii. high accuracy of LFS (operating with the largest representative sample in the country).

The number of employed in SILC is very close to the one in LFS. However, there is a large discrepancy in the number of unemployed between LFS data and Bulgarian SILC survey estimates, e.g. the 2007 number of unemployed is estimated to be 2.8 times higher than LFS figures. This could be explained by a possible misreporting of the 2007 unemployment status in BG SILC 2008 (a tendency of overstating the unemployment status by some individuals during the survey). Also, the number of self-defined unemployed in SILC survey is adjusted for the number of months they reported (and most likely, over-reported) to be unemployed.

Due to the deepening of the crisis in 2010 the number of unemployed has increased and as a result the overestimation of unemployed in 2007 has been compensated in 2010. However, the opposite result is observed for the number of employed which, according the official estimates, has decreased by about 200 thousand in 2010 as compared to 2007.

Table 4.2 Number of employed & unemployed

	Input dataset (I)		External Source (II)			Ratio (I/II)			
	2007	2007	2008	2009	2010	2007	2008	2009	2010
Number of employed	3,378,320	3,252,600	3,360,700	3,253,600	3,052,800	1.039	1.005	1.038	1.107
Number of unemployed	677,253	240,200	199,700	238,000	348,000	2.820	3.391	2.846	1.946

Notes: Number of employed/unemployed is based on months in employment/unemployment. Numbers computed as averages of quarterly data over the year.

Source: NSI, Labour Force Survey 2007-2010.

It should be kept in mind that there are several sources providing data about the number of employed and self-employed (NSI: LFS, National Accounts; NSSI: Statistics on insured persons). The results about employment and self-employment income amounts (table 4.4) are validated upon the National Accounts figures and, in order to maintain consistency, the same source is used also for the number of recipients. When compiling these numbers NSI utilizes data on labour inputs from the Annual Census of Enterprises. It is based on exhaustive and compulsory reporting of enterprises about their economic indicators, including annual average hired employment and the summary amount of the compensation of employees. Additionally, the self-employed population is evaluated by upgrading the official numbers of registered self-employed (including the employers) by the sample estimates produced by LFS and HBS, including the informally employed workers.

There is a substantial number of employed estimated in the National Accounts for Sector A: “Agriculture, forestry and fishing” (about 640 thousand annual average for 2007-2010), all of them considered as earners of income from agricultural self-employment (in family farms, semi-formal or informal production units). This number does not include those agricultural employees who have official Labour Contracts (they are categorized as “hired employees”) but only



those who do not have such contracts and thus are classified by NSI as “self-employed”. For this reason, the disparity between SILC survey estimate and external (National Accounts) figure appears substantial. It can be explained by the “expansion” effect of incorporating the informally employed in the National Accounts figure. In the same time, such respondents have rarely assessed themselves as self-employed during the BG SILC 2008 survey.

No information about the number of recipients of income from investment, property, and private transfers has been found.

Notwithstanding the recording mismatch during the survey, a higher total number of individuals with employment income is estimated by SILC survey as compared to National Accounts data. This could be explained mainly by unofficial employment providing “grey economy” wages that are not reported to NSSI/NRA. Other possible cases (apart from the working-age grey-economy employees) are: (i) pensioners working part-time that report some wages; (ii) employed in family farms that self-declare as employees.

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

	Input database (I)		External Source (III)			Ratio (I/III)			
	2007	2007	2008	2009	2010	2007	2008	2009	2010
Original income									
Employment income	3,631	2,740	2,817	2,723	2,534	1.325	1.289	1.333	1.433
Self-employment income	499	986	1,008	1,002	972	0.506	0.495	0.498	0.513
Investment	21	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Property	502	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Private transfers	381	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Other	40	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Paid private transfers	415	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Private pension income*	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Notes: * – estimate not reliable (too few cases in the sample).

Source: NSI, National Accounts, “Employed persons – total of economy” (<http://www.nsi.bg/otrasalen.php?otr=42>).

Table 4.4 contains a summary of the aggregate estimates of income variables used for simulation purposes in the Bulgarian component of EUROMOD. The macro-validation results can be considered as acceptable in respect to the total amounts of the employment and self-employment income which are the two main sources of market income for the Bulgarian households. The total income from hired employment in 2007 overestimates the National Accounts figure for “Compensation of Employees” by about 14%. However, the ratio of mean incomes provides the opposite result which is induced by the disparity between the total numbers of recipients of employment income (table 4.3). This provides some support for the supposition that employment income (on average), although recorded by more individuals than expected, has been underreported in the annual figures recorded by BG SILC 2008 survey. The underestimation



of the mean income along with the overestimation of the number of recipients acted as a “compensating mechanism” providing an explanation of this result. Such a compensation should not be expected if actual SILC estimates for the years 2008-2010 were used unlike the uprated incomes reported in 2007 Bulgarian SILC survey.

The results regarding the self-employment income are quite similar: the SILC survey overestimated the “Operating surplus / Mixed income” National Accounts indicator for the household sector by 13.4% which decreases in the next years. A plausible explanation of this result is the fostered tendency of Bulgarian national accountants to adjust the aggregate recorded business profits (that are officially assessed for taxation purposes) by the available large sample estimates provided by HBS and SILC survey.

Investment income was found not to be feasible for validation, as the recording of such sources by a sample survey is not reliable. For instance, the respondents are not aware of their income accrued from the interest on the deposit accounts (which, according to the central bank statistics, amounts to about 673 mio. BGN in 2007). Similar situation is found regarding the income from shares and other securities, e.g. the dividend income is not recorded consistently neither in the national accounts nor in any sample survey based on a voluntary participation of respondents.

A different situation is observed in respect of the property income, which in the Bulgarian case is mainly regarding the income from immobile properties let for rent. The national account figure is based mainly on the officially declared rents and shows an insignificant amount compared to SILC. The only source of comparable, survey data is the HBS which aggregates are presented in table 4.4. The result shows that BG-SILC survey underestimates this aggregate by 27-28% which could be explained by the timing of income recording:

- a single record in BG-SILC 2008, with possible recall error and/or underreporting of the annual 2007 income from rent;
- monthly records in HBS – it is regularly conducted throughout the year with monthly values recorded.

Reliable data regarding different components of the private transfers was not identified. The national accounts provide an aggregate figure under the article D.75 “Miscellaneous current transfers” in the resource side of the Secondary Distribution of Income account for sector S.14 “Households”. The SILC survey underestimates the amount of this indicator by about 25% (typical reasons apply: recall errors, coverage mismatches, etc.). Together with interest income, private transfers contribute to the slight overall underestimation of the aggregate primary incomes. It should be noted that – in order to provide a methodologically closer indicator – we have adjusted the “Balance of the primary incomes” (used for the validation of original income) by deducting the amount of Employers’ SIC.

Table 4.4 Market Income – Aggregate amounts (million BGN)

Input (I) 2007	External source (II) 2007	Ratio (I/II) 2007	Uprated input (I)			External source (III)			Ratio(I/III)			
			2008	2009	2010	2008	2009	2010	2008	2009	2010	



	Input (I) 2007	External source (II) 2007	Ratio (I/II) 2007	Uprated input (I)			External source (III)			Ratio(I/III)		
				2008	2009	2010	2008	2009	2010	2008	2009	2010
Original income												
Employment income, mean (1)	5,350	6,226	0.859	6,458	6,827	6,581	7,475	8,312	9,305	0.864	0.821	0.707
Employment income, total (2)	19,428	17,061	1.139	23,450	24,790	23,896	21,060	22,636	23,955	1.113	1.095	0.998
Self-employment income (3)	3,817	3,354	1.138	3,932	3,871	3,825	3,689	3,922	3,916	1.066	0.987	0.977
Investment income	66	n/a	n/a	74	76	78	n/a	n/a	n/a	n/a	n/a	n/a
Property Income (*)	168	230	0.729	170	130	152	236	182	211	0.718	0.714	0.721
(i) Private transfers	501	n/a	n/a	556	435	561	n/a	n/a	n/a	n/a	n/a	n/a
(ii) Other	17	n/a	n/a	20	18	9	n/a	n/a	n/a	n/a	n/a	n/a
(iii) Paid private transfers	254	n/a	n/a	280	298	299	n/a	n/a	n/a	n/a	n/a	n/a
Total (i+ii+iii) (4)	772	1,038	0.744	856	751	869	1,210	1,630	1,409	0.707	0.46	0.617
Original income (5)	23,744	27,156	0.874	27,922	29,022	28,222	31,550	33,476	33,685	0.885	0.867	0.838

Source: NSI, National Accounts (preliminary data for 2010-2011); * NSI, Household Budget Survey estimates.

Notes: (1) Calculated using the number of employees (table 4.3).

(2) D.1 “Compensation of employees” reduced by D.6111 “Employers' actual social contributions”.

(3) Sector accounts: S.14 Households, B.2n “Operating surplus, net”.

(4) Sector accounts: S.14 Households, D.75 “Miscellaneous current transfers”.

(5) Sector accounts: S.14 Households, B.5n “Balance of primary incomes, net” reduced by D.121 “Employers' actual social contributions”.

Tables 4.5 and 4.6 contain the validation results in respect to the non-simulated benefit instruments. It is based on data from the standard EU SILC UDB variables provided by NSI to the Eurostat database.

The SILC survey provides relatively good estimates regarding the total pension spending and the number of recipients of all pension benefits. However, if we first examine Table 4.5 we will see that survivor pension receivers are underestimated in SILC by 16% in 2007 (which increases to 20% in 2010) whereas disability pension receivers are overestimated by 37%. Table 4.6, on the other hand, shows that the total spending on survivor pensions are slightly underestimated by 4-5% while disability pensions' spending is overestimated almost twice in SILC. These results could be explained mainly by recall errors along with misreporting of the items of pension income, e.g. merging of various pension supplements to the main pension (old-age, disability or survivor), difficulties with recalling and/or evaluating the annual amounts for 2007, and other kind of recording mismatches.



Similar situation is observed in respect to the educational allowances having the scholarships included as a major item. Detailed data about the number of primary, basic and secondary students that receive scholarships is not available till 2008 and the validation is possible only for 2009-2010. It should be kept in mind that the number of beneficiaries represents the number of households receiving such income (*bed* variable) and hence, it does not match the available official number of educational benefit recipients reported in table 4.5. The aggregated amount of education benefits does not deviate by more than 10% from the official estimate.

Difficulties have been identified in validating sickness benefits which do not allow any reliable validation. For instance, the aggregate amount of contributory sickness benefits has been substantially underestimated by BG SILC (about 18% of the selected validation number for 2007) which could be due to recall errors and possible misclassification of the benefit item during the survey (reporting under disability pensions). It can be plausibly assumed that the insignificant amount of estimated sickness benefits is linked to frequent cases of non-reporting of such benefit by respondents who have actually received such compensation at some points in 2007. This effect can be due to the fact that sickness benefit is top-upped to the monthly wage bill of the employee and many respondents were not aware of the necessity for accurately splitting these amounts from the employment income record.

As an overall result, the SILC survey provides a relatively good representation of the benefits paid in cash to the Bulgarian household members (both simulated and non-simulated). According to the data summarized from all schemes in the ESSPROS framework (available up to 2009) the aggregate sample estimates deviate by 5% in 2007 and the uprated amounts for 2008 and 2009 by 8% and 5% respectively. Of course, the positive mismatches at particular items offset the negative ones at other items leading to this overall result.

Table 4.5 Non-simulated taxes and benefits – Number of recipients

	Input database (I)		External Source (III)			Ratio (I/III)			
	2007	2007	2008	2009	2010	2007	2008	2009	2010
All pensions	2,240	2,221	2,192	2,183	2,169	1.009	1.022	1.026	1.032
Old-age pensions	1,812	1,629	1,604	1,588	1,591	1.113	1.130	1.141	1.139
Disability pensions	612	448	445	452	456	1.367	1.374	1.354	1.342
Survivor pensions	560	668	676	683	693	0.839	0.829	0.820	0.808
Education allowances	46	n/a	n/a	36.9	36.5	n/a	n/a	1.245	1.260
Sickness benefits	41	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Taxes on wealth	2,020	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Sources: Annual Reports 2008-2010 of: National Social Security Institute; Agency for Social Assistance.

Table 4.6 Non-simulated taxes and benefits – Aggregate amounts



	Input (I)	External source (II)	Ratio (I/II)	Uprated input (I)			External source (II)			Ratio(I/II)		
	2007	2007	2007	2008	2009	2010	2008	2009	2010	2008	2009	2010
All benefits* (including pensions)	5,502	5,756	0.956	6,470	7,939	8,193	6,994	8,360	n/a	0.925	0.950	n/a
All pensions												
Old-age pensions	4,765	3,683	1.294	5,659	6,993	7,206	4,335	5,375	5,772	1.305	1.301	1.248
Disability pensions	3,902	3,126	1.248	4,694	5,781	5,957	3,703	4,584	4,931	1.268	1.261	1.208
Survivor pensions	660	345	1.916	719	909	937	375	473	499	1.918	1.922	1.878
Education allowances	203	213	0.954	246	303	312	257	318	342	0.955	0.953	0.912
Sickness benefits	17	18	0.918	19	19	20	17	21	22	1.095	0.912	0.905
Taxes on wealth	29	160	0.180	42	53	46	229	288	252	0.185	0.183	0.184

Sources: Annual Reports 2008-2010 of: National Social Security Institute; Agency for Social Assistance; * NSI, ESSPROS data 2007-2009.

4.1.2 Validation of outputted (simulated) incomes

4.1.2.1 Simulated social benefits

Validation of simulated social benefits is performed in two settings: (a) based on the utilization of only standard UDB variables provided by EU SILC database, and (b) based on UDB and national SILC variables provided by Bulgarian NSI. The data adjustments done in the data set based only on UDB are targeted mainly to the splitting of the family and social assistance benefits variables since particular items are selected for simulation in the system. This, together with the way the correction for tax evasion has been implemented using the two data sets, induces some variation in the results which should be taken into account when particular elements of Bulgarian social transfer system are analyzed using EUROMOD output.

The simulation of eligibility rules performs at different levels of success in respect of the various items included in the simulated system.

- Unemployment benefit receivers are identified at about 80% of the actual numbers in 2007-2008. However, in the crisis years the actual unemployment has doubled which could not be incorporated in the model as it uses the data for a pre-crisis year (2007). For this reason, the amounts of unemployment benefits have been substantially underestimated in 2009 and 2010. An additional possible reason for the result regarding the amounts is the conditionality of the indirect evaluation of the assessment income (previous earnings) used as a basis of the calculation of this contributory benefit.



- Problems were not expected in respect to the “Lump sum for childbirth”; even though, the eligible mothers have been underestimated by about 10% to 16% due to increased births in the period 2008-2010 (as compared to 2007). This way, the amount of the benefit has been also underestimated in this period.
- Mismatches have emerged regarding the four child benefits. The general reason for the overestimation of the transfers on “monthly allowance for bringing up a child up to age 1”, as well as for the underestimation of the amount on “child supplement”, is the respective bias in the number of identified receivers. Similar biases in the numbers have most likely caused the deviation of the amounts of the “cash benefit for pregnancy and childbirth” and the “cash benefit for bringing up a child up to age 2”. Additionally, the income test regarding the standard child benefit is likely to be restricted by income levels recorded by SILC survey which, in the same time, are just partially reported to the authorities and thus not taken into account when assessing the eligibility for this family benefit.
- The two main social assistance benefits have been simulated by a satisfactory success in light of their dependency on the correct recording and simulation of all other income sources. The standard monthly social assistance benefit has been overestimated by the model which could be due not only to discrepancies in income data but also to possible non-take up of the benefit. In practice, it is provided by a scheme for monthly social evaluation (trying to monitor the switches to/out of eligibility during the year) which cannot be precisely simulated on the basis of annualized income recording.
- The volatility of the heating benefit estimates was also expected as there are some complications in the approach for its simulation. Heating benefit is parameterized and provided for the heating season (which includes roughly the third quarter of year “t” and first quarter of year “t+1”). In practice, the transfers are not distributed as evenly as expected because of the shift between two successive budgetary years. A particular unfavorable case have emerged in the period 2008-2009 when the official statistics reflect some deviations from the regular schedule of the provision of the benefit and its distribution between the two budgetary years.
- Due to data limitation when using the UDB data only, two social assistance benefits for disability (“social invalidity pension” and the “supplement for care by assistant”) are not feasible for simulation.

Table 4.7.1.a Simulated benefits based on UDB – Number of recipients (in thousands)

	EM Var.	EM Output (I)				External Source (II)				Ratio (I/II)			
		2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Unemployment benefit	<i>bunct</i>	53	54	54	54	65	67	121	137	0.810	0.796	0.444	0.393
Lump sum for childbirth	<i>bchbals</i>	65	65	65	65	70	73	78	72	0.939	0.893	0.841	0.907
Monthly allow. for bringing up a child, up to age 1	<i>bmanc</i>	57	49	48	49	24	22	22	23	2.421	2.214	2.155	2.111



	EM Var.	EM Output (I)				External Source (II)				Ratio (I/II)			
		2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Monthly allowance for raising a child, until completion of secondary school (child supplement)	<i>bchmt</i>	441	334	368	375	835	828	842	840	0.529	0.404	0.437	0.447
Cash benefits for pregnancy and childbirth	<i>bchba</i>	38	38	38	38	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benefits for bringing up of a child younger than 2	<i>bmact</i>	73	73	73	73	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Lump sum for raising a child until age of 1, for mothers who are regular tertiary students	<i>bchnm01</i>	n/a	n/a	3	3	n/a	n/a	1	2	n/a	n/a	1.948	1.445
Lump sum for raising twins until age of 1	<i>bchnm02</i>	n/a	n/a	6	6	n/a	n/a	5	2	n/a	n/a	1.239	2.827
Social invalidity pension	<i>pdinc</i>	n/a	n/a	n/a	n/a	177	163	154	156	n/a	n/a	n/a	n/a
Supplement for case by assistant	<i>bdica</i>	n/a	n/a	n/a	n/a	122	116	112	106	n/a	n/a	n/a	n/a
Social old age pension	<i>poamt</i>	6	2	0	2	4	4	4	4	1.385	0.649	0.086	0.700
Child allowance for disabled child *	<i>bchdied</i>	1	1	1	1	20	20	19	20	0.026	0.026	0.026	0.025
Targeted allowance for pupils 1st grade	<i>bched</i>	43	54	60	60	29	30	40	42	1.491	1.783	1.492	1.425
Monthly social assistance (guaranteed minimum income)	<i>bsa00</i>	80	67	59	63	77	43	36	44	1.044	1.562	1.645	1.418
Heating benefit	<i>bsaht</i>	265	267	198	253	300	257	259	206	0.883	1.042	0.764	1.227

Notes: * Monthly child allowance for bringing up a permanently disabled child up to 18 years of age and until completion of secondary education (but not longer than age of 20).

Sources: Annual Reports 2008-2010 of: National Social Security Institute; Agency for Social Assistance.

Table 4.7.1.b Simulated benefits based on UDB – Aggregate amounts (in million BGN)

	EM Var.	EM Output (I)				External Source (II)				Ratio (I/II)			
		2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Unemployment benefit	<i>bunct</i>	39	46	59	61	86	99	238	313	0.458	0.466	0.246	0.194
Lump sum for childbirth	<i>bchbals</i>	14	18	18	18	14	25	29	28	0.990	0.732	0.624	0.663



	EM Var.	EM Output (I)				External Source (II)				Ratio (I/II)			
		2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Monthly allow. for bringing up a child, up to age 1	<i>bmanc</i>	69	59	57	59	29	28	27	29	2.329	2.070	2.105	2.026
Monthly allowance for raising a child, until completion of secondary school (child supplement)	<i>bchmt</i>	158	157	239	244	193	251	358	385	0.822	0.625	0.668	0.635
Cash benefits for pregnancy and childbirth	<i>bchba</i>	85	102	130	138	95	198	301	315	0.887	0.518	0.433	0.438
Benefits for bringing up a child younger than 2	<i>bmact</i>	158	193	211	211	115	129	128	126	1.378	1.499	1.653	1.677
Lump sum for raising a child until age of 1, for mothers who are regular tertiary students	<i>bchnm01</i>	n/a	n/a	8	4	n/a	n/a	4	5	n/a	n/a	2.285	0.831
Lump sum for raising twins until age of 1	<i>bchnm02</i>	n/a	n/a	14	7	n/a	n/a	4	2	n/a	n/a	3.821	3.009
Social invalidity pension	<i>pdinc</i>	n/a	n/a	n/a	n/a	70	79	97	101	n/a	n/a	n/a	n/a
Supplement for care by assistant	<i>bdica</i>	n/a	n/a	n/a	n/a	79	88	103	103	n/a	n/a	n/a	n/a
Social old age pension	<i>poamt</i>	4	2	0	3	4	5	6	6	1.062	0.493	0.065	0.519
Child allowance for disabled child *	<i>bchdied</i>	1	1	1	1	34	40	46	46	0.023	0.023	0.022	0.022
Targeted allowance for pupils 1st grade	<i>bched</i>	5	8	9	9	5	5	6	6	1.109	1.711	1.477	1.409
Monthly social assistance (guaranteed minimum income)	<i>bsa00</i>	104	89	70	97	66	38	35	48	1.576	2.317	2.022	2.039
Heating benefit	<i>bsaht</i>	59	76	56	70	83	136	38	66	0.717	0.554	1.493	1.060

Notes: * Monthly child allowance for bringing up a permanently disabled child up to 18 years of age and until completion of secondary education (but not longer than age of 20).

Sources: Annual Reports 2008-2010 of: National Social Security Institute; Agency for Social Assistance.

Tables 4.7.2.a/b present the results from the simulation of social benefits performed based on UDB data and national SILC survey variables. In this case, notable shifts in the results are found in respect of the following items.

- The disability benefits (“social invalidity pension” and the “supplement for care by assistant”) become generally feasible for simulation. However, the model-identified persons eligible for a social invalidity pension are underestimated by about one third of the official number of receivers in 2007 (177



thousand). This deviation improves to about 25% due to a reduction of the actual number of receivers to about 155 thousand for 2009-2010. Nevertheless, there is evidence for underrepresentation of this specific group by Bulgarian SILC survey.

- The receivers of a “supplement for care by assistant” are underestimated in a greater extent (about 44% of the actual number in 2007). A possible merging of this item to the main income source (e.g. disability pension) could induce a substantial deviation, additionally to that caused by the underrepresentation of the group (the benefit is restricted to persons with disability level over 90%).
- Substantial improvement in the simulation results are realized regarding the standard child benefit (child supplement) – the number of identified receivers is over 70% of the actual number for 2007; this result however worsens in the next 3 years. The underestimation of eligible receivers can be explained by the obstruction of the income test at each case where grey economy wages are (even partially) recorded during the survey. However, the “real life” test is conducted only on the officially reported incomes, thus many “official earners” of the minimum wage are provided by the standard child supplement.
- The result about the standard monthly social assistance benefit alters considerably when national SILC variables are used. Without the use of national SILC the model identifies quite adequately the total number of receivers in 2007 compared to the external statistics but overestimates it by about 50% on average in the period 2008-2010. When national SILC variables are used, the income test fails in more than a half of the cases so the number of estimated eligible receivers is reduced to 50-60% of the official statistics number (maximum of 69% in 2008). Similar effect is observed also regarding the heating benefit where the number of receivers is underestimated in a varying extent, notwithstanding the surprisingly adequate result for 2010 (both in respect of the recipients and aggregate amount).

Table 4.7.2.a Simulated benefits based on UDB and national SILC variables – Number of recipients (in thousands)

	EM Var.	EM Output (I)				External Source (II)				Ratio (I/II)			
		2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Unemployment benefit	<i>bunct</i>	53	54	54	54	65	67	121	137	0.810	0.796	0.444	0.393
Lump sum for childbirth	<i>bchbals</i>	65	65	65	65	70	73	78	72	0.939	0.893	0.841	0.907
Monthly allow. for bringing up a child, up to age 1	<i>bmanc</i>	80	74	70	73	24	22	22	23	3.387	3.340	3.185	3.142
Monthly allowance for raising a child, until completion of secondary school (child supplement)	<i>bchmt</i>	596	463	505	524	835	828	842	840	0.714	0.559	0.600	0.624
Cash benefits for pregnancy and childbirth	<i>bchba</i>	28	29	29	29	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benefits for bringing up of a child younger than 2	<i>bmact</i>	45	45	45	45	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a



	EM Var.	EM Output (I)				External Source (II)				Ratio (I/II)			
		2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Lump sum for raising a child until age of 1, for mothers who are regular tertiary students	<i>bchnm01</i>	n/a	n/a	3	3	n/a	n/a	1	2	n/a	n/a	1.948	1.445
Lump sum for raising twins until age of 1	<i>bchnm02</i>	n/a	n/a	6	6	n/a	n/a	5	2	n/a	n/a	1.239	2.827
Social invalidity pension	<i>pdinc</i>	118	118	118	118	177	163	154	156	0.663	0.723	0.761	0.753
Supplement for case by assistant	<i>bdica</i>	54	54	54	54	122	116	112	106	0.440	0.464	0.478	0.505
Social old age pension	<i>poamt</i>	3	1	0	1	4	4	4	4	0.638	0.227	0.000	0.245
Child allowance for disabled child *	<i>bchdied</i>	1	1	1	1	20	20	19	20	0.026	0.026	0.026	0.025
Targeted allowance for pupils 1st grade	<i>bched</i>	52	65	70	70	29	30	40	42	1.779	2.157	1.742	1.654
Monthly social assistance (guaranteed minimum income)	<i>bsa00</i>	39	29	22	28	77	43	36	44	0.514	0.687	0.611	0.624
Heating benefit	<i>bsaht</i>	224	224	161	222	300	257	259	206	0.746	0.873	0.619	1.076

Notes: * Monthly child allowance for bringing up a permanently disabled child up to 18 years of age and until completion of secondary education (but not longer than age of 20).
Sources:

Table 4.7.2.b Simulated benefits based on UDB and national SILC variables – Aggregate amounts (in million BGN)

	EM Var.	EM Output (I)				External Source (II)				Ratio (I/II)			
		2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Unemployment benefit	<i>bunct</i>	39	46	59	61	86	99	238	313	0.458	0.466	0.246	0.194
Lump sum for childbirth	<i>bchbals</i>	14	18	18	18	14	25	29	28	0.990	0.732	0.624	0.663
Monthly allow. for bringing up a child, up to age 1	<i>bmanc</i>	96	89	84	87	29	28	27	29	3.257	3.123	3.111	3.017
Monthly allowance for raising a child, until completion of secondary school (child supplement)	<i>bchmt</i>	206	212	319	330	193	251	358	385	1.068	0.843	0.890	0.856



	EM Var.	EM Output (I)				External Source (II)				Ratio (I/II)			
		2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Cash benefits for pregnancy and childbirth	<i>bchba</i>	70	86	110	116	95	198	301	315	0.735	0.437	0.364	0.368
Benefits for bringing up of a child younger than 2	<i>bmact</i>	98	119	130	130	115	129	128	126	0.852	0.926	1.022	1.036
Lump sum for raising a child until age of 1, for mothers who are regular tertiary students	<i>bchnm01</i>	n/a	n/a	8	4	n/a	n/a	4	5	n/a	n/a	2.285	0.831
Lump sum for raising twins until age of 1	<i>bchnm02</i>	n/a	n/a	14	7	n/a	n/a	4	2	n/a	n/a	3.821	3.009
Social invalidity pension	<i>pdinc</i>	48	56	68	71	70	79	97	101	0.679	0.715	0.701	0.705
Supplement for case by assistant	<i>bdica</i>	33	39	47	49	79	88	103	103	0.416	0.441	0.454	0.475
Social old age pension	<i>poamt</i>	2	1	0	1	4	5	6	6	0.490	0.173	0.000	0.182
Child allowance for disabled child *	<i>bchdied</i>	1	1	1	1	34	40	46	46	0.023	0.023	0.022	0.022
Targeted allowance for pupils 1st grade	<i>bched</i>	6	10	11	11	5	5	6	6	1.323	2.070	1.725	1.636
Monthly social assistance (guaranteed minimum income)	<i>bsa00</i>	53	43	33	49	66	38	35	48	0.811	1.119	0.955	1.021
Heating benefit	<i>bsaht</i>	50	63	45	61	83	136	38	66	0.606	0.464	1.209	0.930

Notes: * Monthly child allowance for bringing up a permanently disabled child up to 18 years of age and until completion of secondary education (but not longer than age of 20).
Sources:

4.1.2.2 Simulated taxes and SIC

The simulation of the personal income tax and social insurance contributions is conducted on the basis of UDB income variables in the two aforementioned settings: (a) original UDB variables; (b) variables from UDB and the national SILC survey. Additionally, tax evasion adjustments have been introduced due to the initial results of over-simulation of SIC and PIT.

Validation of the number of social insurance and income tax payers is hindered by a variety of circumstances, some of which were commented in section 4.1.1 regarding the number of employed individuals in the Bulgarian economy. The divergence between official data on employment and survey data sources can be attributed to two main causes: (i) methodological mismatch of the approaches for estimation; (ii) spread of the shadow economy. The latter



phenomenon is found in all the transition countries of CEE and former Soviet Union, albeit in a diverse extent. A very popular estimate of the shadow economy share in Bulgarian GDP is presented by F.Schneider (32.4% on average for 2007-2011, with EU-27 average of 19.6%) who provides estimates of the size of 31 European shadow economies over the period 2003-2011. The evaluation of the shadow economy size is performed by the MIMIC (multiple-indicators-multiple-causes) estimation procedure (Schneider, 2012).

Official estimates of Bulgarian NSI are derived through a standard approach for hidden economy adjustments of the national accounts data and provide much lower levels: 10.4% of GDP for 2007-2008 (Nontchev et al., 2011: 31). Alternative estimates are provided by independent studies which however treat a particular range of issues and dimensions of the shadow economy operations. For instance, Goev & Boshnakov (2009: 33-35) provide results from a 2008 sample questionnaire survey of business persons who were asked to assess the extent of “shadow operations” (associated with the share of unrecorded turnover) in their branch as well as the perceived aggregate share of hidden transactions in all sectors. The average share for the overall economy is evaluated at 40.9%. Additionally, the average share of the employed with a “hidden clause” (e.g. formally on the minimum wage, but with additional “envelope” wages) is assessed at 31%. Nonchev et al. (2011) provide evidence for the dynamics of the shadow economy index derived from the monitoring surveys of the Center for the Study of Democracy, where a variety of circumstances that facilitate the shadow economy spread have been considered and illustrated. As a particular example, in 2010 the number of economically inactive Bulgarians of working age (15–64) was over 1.6 million (over 20% of the total population) where the number of students and disabled individuals are about a half of this group; out of the remaining 834 thousand, about 225 thousand are evaluated as “discouraged to participate in the formal labor market”, 250 thousand do not work due to personal or family reasons, and 78 thousand do not provide a reason for their economic inactivity (Nonchev et al., 2011: 36).

In the same time, arguments are provided in support of the statement that part of the hidden economic activity, which depends on the official economy, is shrinking faster than the overall rate of economic decrease at the end of the decade. This is explained by the lower “costs of downsizing” of unrecorded transactions during the crisis, e.g. it is fairly easier to terminate informal contracts with employees and suppliers as compared to the formal contracts (Nonchev et al., 2011: 39). Additionally, the targeted measures applied by the state have contributed to the alleviation of grey economy effects, e.g. the implementation of minimum floors for a detailed range of professions as well as for the social insurance of self-employed and employed in the agriculture (Pashev, 2006; Nontchev et al., 2011).

Having in mind all the potential distortions invoked by the involvement of a large share of employed in grey economy activities, the validation results should be read with caution. It is not surprising that the number of insured under the mandatory social insurance have been overestimated by BG SILC survey by about 13-15% for the period 2007-2009 (table 4.8). Even more, the adjustment by the national SILC data leads to almost twofold increase of the overestimation shares. This is naturally expected to contribute to some upward deviation of the simulated SIC revenues.

Table 4.8 Simulated taxes and social insurance contributions (both data sets) – Number of recipients (in thousands)

EM Var.	EM Output (I)				External Source (II)				Ratio (I/II)			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010



	EM Var.	EM Output (I)				External Source (II)				Ratio (I/II)			
		2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
I. Based on UDB data only													
Income tax & SIC	<i>tis</i>	1 836	1 962	1 962	1 962	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Social insurance contributions	<i>tsc</i>	3 576	3 576	3 576	3 576	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Employer	<i>ils_sicer</i>	3 274	3 274	3 274	3 274	2 681	2 656	2 633	2 786	1.221	1.233	1.244	1.175
Employees	<i>ils_sicee</i>	3 043	3 043	3 043	3 043	2 681	2 656	2 633	2 786	1.135	1.146	1.156	1.092
Self-employed regime	<i>ils_sicse</i>	499	499	499	499	239	254	263	222	2.090	1.962	1.895	2.248
Income tax	<i>tin</i>	2 743	3 894	3 894	3 894	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
II. Based on UDB adjusted by National SILC													
Income tax & SIC	<i>tis</i>	1 923	2 043	2 043	2 043	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Social insurance contributions	<i>tsc</i>	3 916	3 916	3 916	3 916	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Employer	<i>ils_sicer</i>	3 631	3 631	3 631	3 631	2 681	2 656	2 633	2 786	1.354	1.367	1.379	1.303
Employees	<i>ils_sicee</i>	3 397	3 397	3 397	3 397	2 681	2 656	2 633	2 786	1.267	1.279	1.290	1.219
Self-employed regime	<i>ils_sicse</i>	499	499	499	499	239	254	263	222	2.090	1.962	1.895	2.248
Income tax	<i>tin</i>	2 205	4 251	4 251	4 251	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Sources: NSSI, Yearbook on Social Insurance 2008, 2009, 2010, 2011.

As expected, the direct utilization of UDB variables for taxable earnings leads to a substantial overestimation of the SIC revenues (44.3% in the baseline) which originated predominantly from the social insurance of the self-employed (table 4.9). The SIC paid by the self-employed are oversimulated by 309.9% in comparison to the external figures. The SIC paid by the employees and their employers are more accurately simulated. And yet, the difference is large: 51.8% for the employee SIC and 27.9% for the employer SIC. Employee SIC are oversimulated in the following two years but to a lesser extent: by 41% in 2008 and 46.6% in 2009; the jump in 2010 is most likely due to a dubious preliminary national accounts value. PIT is similarly biased so the revenues are overestimated by about 32% in the baseline. This rate is reduced to about 15% on average for 2008-2010 when the flat tax regime has been introduced. The baseline results based on UDB data show an oversimulation of income tax and social insurance contributions, which amounts to 40.8% in 2007 and 33.6% in 2010.

The simulations based on UDB and the national SILC succeed to decrease substantially the upward bias of personal income taxes although SIC from self-employed continue to be highly overestimated (90.8% in 2007, but decreasing for the simulated period 2008-2010). In 2007, the deviation of the employees'



SIC is cut twice reaching to 24.7% in 2007 which further decreases to 15.1% in 2008 and 20% in 2009. The best result is obtained in respect of the largest item: the employers' SIC – the baseline simulation value deviates by only 6.3%; this result however worsens in some extent in the period 2008-2009.

As a result of the suppressing of SIC contributory base (which was expected to provide a more realistic basis for the simulation) the aggregate PIT amount is underestimated by about 24% for 2007. The adjustments of contributory bases actually rendered the PIT base to shrink in an extent larger than expected. As a result, the combined income tax and SIC burden has been estimated using UDB and national SILC quite close to the national accounts data – upward bias of only 4.7% in the baseline and about 9% in the next 2 years. The complex distortions of the current SIC/PIC simulation results are to be further examined and conceivably improved.

Table 4.9 Simulated taxes and social insurance contributions – Aggregate amounts (in million BGN)

	EM Var.	EM Output (I)				External Source (II)				Ratio (I/II)			
		2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
I. Based on UDB data only													
Income tax & SIC	<i>tis</i>	9 574	10 145	10 137	9 350	6 801	7 395	7 299	7 000	1.408	1.372	1.389	1.336
Social insurance contributions	<i>tsc</i>	7 054	7 876	7 757	7 024	4 890	5 393	5 273	4 970	1.443	1.461	1.471	1.413
Employer	<i>ils_sicer</i>	4 268	4 467	4 282	3 886	3 337	3 337	3 175	3 174	1.279	1.339	1.349	1.224
Employees	<i>ils_sicee</i>	1 947	2 483	2 625	2 361	1 283	1 761	1 790	1 404	1.518	1.410	1.466	1.681
Self-employed regime	<i>ils_sicse</i>	840	925	850	778	271	295	308	391	3.099	3.140	2.758	1.989
Income tax	<i>tin</i>	2 519	2 269	2 380	2 326	1 911	2 002	2 026	2 030	1.319	1.133	1.175	1.146
II. Based on UDB and national SILC													
Income tax & SIC	<i>tis</i>	7 119	8 016	8 036	7 400	6 801	7 395	7 299	7 000	1.047	1.084	1.101	1.057
Social insurance contributions	<i>tsc</i>	5 661	6 253	6 184	5 592	4 890	5 393	5 273	4 970	1.158	1.160	1.173	1.125
Employer	<i>ils_sicer</i>	3 545	3 690	3 546	3 214	3 337	3 337	3 175	3 174	1.063	1.106	1.117	1.013
Employees	<i>ils_sicee</i>	1 599	2 028	2 148	1 930	1 283	1 761	1 790	1 404	1.247	1.151	1.200	1.374
Self-employed regime	<i>ils_sicse</i>	517	535	490	448	271	295	308	391	1.908	1.815	1.591	1.145
Income tax	<i>tin</i>	1 457	1 763	1 852	1 808	1 911	2 002	2 026	2 030	0.763	0.881	0.914	0.891

Sources: NSI, Government Finance Statistics, Taxes and social contributions, Sector “General Government”, 2007-2010 (<http://www.nsi.bg/otrasalen.php?otr=40>).



4.2. Income distribution

Income distribution results from the Bulgarian component of EUROMOD are derived based on simulations using UDB variables (baseline results, see Table 4.10.1, Table 4.11.1 and Table 4.12.1) and using UDB and national SILC (see Table 4.10.2, Table 4.11.2 and Table 4.12.2). Eurostat data about the income distribution based on the standard EU-SILC variables is used as a benchmark source (Income and Living Conditions, Distribution of income by quantiles, last update: 26-07-2012).

Furthermore, tax evasion adjustments outlined above are also enacted. It is assumed that tax evasion compels distributional imbalances, although it can be presumed that these additional distortions are not so severe regarding the available poverty estimates (as high income households are underrepresented in BG SILC and other sample surveys). Anyway, allowing for tax evasion adjustments provides a more adequate estimate of the actual levels of inequality and poverty.

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 is calculated as a sum of all income sources of all household members net of income tax and social insurance contributions. The weights in the OECD equivalence are: 1 for the first adult; 0.5 for each additional individual aged 14+; 0.3 for each individual of age under 14.

4.2.1 Income inequality

Table 4.10.1 and Table 4.10.2 contain selected income distribution indicators estimated on the basis of EUROMOD micro output and contrasted to the original EU SILC statistics provided by Eurostat database. Decile cut-off points are substantially overestimated based on both data sets in 2007 with ratios ranging from 35.4% to 69.8% in Table 4.10.1 and from 44.1% to 64.2% in Table 4.10.2. However, the divergence ratio decreases rapidly in the updated period 2008-2010 leading to ratios smaller than 100% in 2009 and 2010. It is obvious that income data recorded by BG SILC operations 2009, 2010 and 2011 grow by a rate that outweighs the initial deviation of simulated disposable income. Similar results are observed in respect of the mean and median disposable income levels which are overestimated in the model.

The results obtained regarding the Gini coefficient are quite satisfactory – the deviation using UDB data is 7.8% from the external figure while it is only 0.3% when estimated using UDB and national SILC data. The quintile ratio is however quite lower than the SILC estimate for 2007.

Table 4.10.1 Income distribution – UDB

Indicator	EUROMOD (I)	External Source (II)	Ratio (I/II)
-----------	-------------	----------------------	--------------



	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Deciles (top cut-off points)												
1	1,818	2,114	2,408	2,434	1,071	1,825	2,334	2,453	1.698	1.159	1.032	0.992
2	2,467	2,839	3,252	3,274	1,648	2,480	3,164	3,451	1.497	1.145	1.028	0.949
3	2,992	3,406	3,847	3,862	2,076	3,038	3,971	4,292	1.441	1.121	0.969	0.900
4	3,506	4,049	4,511	4,505	2,485	3,610	4,774	5,098	1.411	1.122	0.945	0.884
5	4,063	4,734	5,234	5,240	2,896	4,247	5,530	5,900	1.403	1.115	0.947	0.888
6	4,726	5,615	6,097	6,066	3,337	5,070	6,302	6,763	1.416	1.107	0.967	0.897
7	5,506	6,631	7,195	7,116	3,867	5,880	7,367	7,841	1.424	1.128	0.977	0.908
8	6,501	7,880	8,502	8,428	4,634	6,968	8,773	9,271	1.403	1.131	0.969	0.909
9	7,919	9,732	10,398	10,265	5,848	9,055	11,401	11,730	1.354	1.075	0.912	0.875
10	20,453	25,311	26,242	25,717	–	–	–	–	–	–	–	–
Median	4,164	4,820	5,316	5,329	2,896	4,247	5,530	5,900	1.438	1.135	0.961	0.903
Mean	4,887	5,858	6,344	6,304	3,367	5,207	6,411	6,838	1.451	1.125	0.990	0.922
Gini	32.5	34.2	32.8	32.3	35.3	35.9	33.4	33.2	0.922	0.951	0.982	0.971
S80/S20	5.3	5.7	5.4	5.2	7.0	6.5	5.9	5.9	0.757	0.883	0.908	0.876

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: (1) EUROMOD calculations; (2) Eurostat Database, Distribution of income by quantiles (Source: SILC) [ilc_di01].

Table 4.10.2 Income distribution – UDB and national SILC

Indicator	EUROMOD (I)				External Source (II)				Ratio (I/II)			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Deciles (top cut-off points)												
1	1,758	2,032	2,331	2,351	1,071	1,825	2,334	2,453	1.642	1.114	0.999	0.958
2	2,441	2,797	3,222	3,243	1,648	2,480	3,164	3,451	1.481	1.128	1.018	0.940
3	2,992	3,423	3,861	3,896	2,076	3,038	3,971	4,292	1.441	1.127	0.972	0.908
4	3,586	4,095	4,557	4,556	2,485	3,610	4,774	5,098	1.443	1.134	0.955	0.894
5	4,213	4,896	5,416	5,407	2,896	4,247	5,530	5,900	1.455	1.153	0.979	0.916



Indicator	EUROMOD (I)				External Source (II)				Ratio (I/II)			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
6	5,003	5,841	6,327	6,263	3,337	5,070	6,302	6,763	1.499	1.152	1.004	0.926
7	5,899	6,997	7,573	7,489	3,867	5,880	7,367	7,841	1.525	1.190	1.028	0.955
8	6,970	8,281	8,894	8,740	4,634	6,968	8,773	9,271	1.504	1.188	1.014	0.943
9	8,710	10,373	11,008	10,795	5,848	9,055	11,401	11,730	1.489	1.146	0.966	0.920
10	24,420	27,969	28,688	28,363	–	–	–	–	–	–	–	–
Median	4,290	4,977	5,501	5,513	2,896	4,247	5,530	5,900	1.481	1.172	0.995	0.934
Mean	5,238	6,128	6,621	6,563	3,367	5,207	6,411	6,838	1.556	1.177	1.033	0.960
Gini	35.2	35.8	34.3	33.8	35.3	35.9	33.4	33.2	0.997	0.998	1.028	1.017
S80/S20	6.1	6.3	5.9	5.7	7.0	6.5	5.9	5.9	0.873	0.974	0.994	0.961

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: (1) EUROMOD calculations; (2) Eurostat Database, Distribution of income by quantiles (Source: SILC) [ilc_di01].

4.2.2 Poverty rates

EUROMOD estimates of poverty rates show some expected divergence from the SILC estimates which depends on the chosen poverty line alternative. A notable underestimation of the poverty lines is observed in the baseline results which are most severe at the low level of the poverty line. This effect is however mitigated in the simulated years 2008-2010.

Also, a tendency of compensating for the underestimation at the lower poverty lines is observed when moving to a higher level of the poverty line. The model estimates most precisely the poverty rates at 60-70% of the median disposable income. Special attention should be put on the disparity of estimates for children, young individuals (18-24 years of age), and elderly (age above 65) – analysis of poverty incidence on these age groups should be performed with a higher cautiousness.

Table 4.11.1 At risk of poverty rates by gender and age – based on UDB

Indicator	EUROMOD (I)				External Source (II)				Ratio (I/II)			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010

40% median HDI



Indicator	EUROMOD (I)				External Source (II)				Ratio (I/II)			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Total	6.8	7.0	6.7	6.2	11.1	8.4	8.8	9.2	0.614	0.835	0.763	0.676
Males	6.7	7.0	6.8	6.3	11.0	8.2	8.2	8.4	0.606	0.857	0.828	0.755
Females	7.0	7.0	6.6	6.1	11.1	8.6	9.3	10.0	0.627	0.815	0.714	0.611
50% median HDI												
Total	12.6	12.8	12.1	11.6	16.0	14.4	15.0	15.2	0.785	0.887	0.809	0.764
Males	11.2	11.5	11.6	11.2	15.4	13.1	13.4	13.8	0.730	0.875	0.864	0.814
Females	13.8	14.0	12.7	12.0	16.6	15.6	16.5	16.5	0.831	0.897	0.767	0.725
60% median HDI												
Total	19.6	19.8	18.0	17.9	22.0	21.4	21.8	20.7	0.893	0.923	0.824	0.865
Males	17.9	18.2	16.4	16.6	20.9	19.8	19.8	19.0	0.858	0.917	0.829	0.874
Females	21.3	21.3	19.4	19.1	23.0	22.9	23.7	22.3	0.924	0.928	0.818	0.857
70% median HDI												
Total	27.5	28.5	26.9	26.9	29.0	28.9	28.7	28.3	0.948	0.985	0.939	0.950
Males	25.8	26.8	25.4	25.4	27.5	27.3	26.6	26.4	0.940	0.981	0.953	0.962
Females	29.1	30.0	28.4	28.3	30.3	30.4	30.7	30.0	0.959	0.988	0.926	0.943
60% median HDI												
0-17 years	22.1	23.8	24.0	24.1	29.9	25.5	24.9	26.8	0.738	0.934	0.962	0.900
18-24 years	17.9	18.3	19.0	19.6	24.0	20.5	18.3	18.1	0.746	0.891	1.040	1.085
25-49 years	14.4	15.1	15.2	15.6	18.9	16.0	16.0	15.8	0.761	0.947	0.947	0.986
50-64 years	16.2	16.2	14.5	14.8	17.9	17.2	16.1	15.6	0.903	0.942	0.903	0.947
65+ years	33.3	30.5	21.5	19.5	23.9	33.8	39.3	32.2	1.394	0.902	0.547	0.607

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: (1) EUROMOD calculations; (2) Eurostat Database, At-risk-of-poverty rate by poverty threshold, age and sex (Source: SILC) [ilc_li02].

Table 4.11.2 At risk of poverty rates by gender and age – based on UDB and national SILC

Indicator	EUROMOD (I)	External Source (II)	Ratio (I/II)
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	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
40% median HDI												
Total	8.35	8.57	8.12	7.60	11.1	8.4	8.8	9.2	0.753	1.020	0.923	0.826
Males	8.09	8.37	8.07	7.69	11.0	8.2	8.2	8.4	0.735	1.021	0.984	0.916
Females	8.61	8.75	8.18	7.51	11.1	8.6	9.3	10.0	0.775	1.017	0.879	0.751
50% median HDI												
Total	13.99	14.24	13.20	12.85	16.0	14.4	15.0	15.2	0.874	0.989	0.880	0.845
Males	12.53	13.00	12.49	12.41	15.4	13.1	13.4	13.8	0.814	0.992	0.932	0.899
Females	15.36	15.41	13.87	13.26	16.6	15.6	16.5	16.5	0.925	0.988	0.840	0.804
60% median HDI												
Total	21.09	21.94	20.44	19.80	22.0	21.4	21.8	20.7	0.959	1.025	0.937	0.957
Males	19.49	20.45	19.02	18.50	20.9	19.8	19.8	19.0	0.932	1.033	0.961	0.974
Females	22.59	23.34	21.77	21.03	23.0	22.9	23.7	22.3	0.982	1.019	0.918	0.943
70% median HDI												
Total	29.41	29.92	28.80	28.43	29.0	28.9	28.7	28.3	1.014	1.035	1.004	1.004
Males	27.70	28.29	27.21	26.94	27.5	27.3	26.6	26.4	1.007	1.036	1.023	1.021
Females	31.02	31.45	30.29	29.81	30.3	30.4	30.7	30.0	1.024	1.035	0.987	0.994
60% median HDI												
0-17 years	23.95	25.69	25.72	25.59	29.9	25.5	24.9	26.8	0.801	1.007	1.033	0.955
18-24 years	19.89	20.80	21.40	21.96	24.0	20.5	18.3	18.1	0.829	1.015	1.169	1.213
25-49 years	15.52	17.15	17.44	17.50	18.9	16.0	16.0	15.8	0.821	1.072	1.090	1.107
50-64 years	17.03	17.90	16.56	16.19	17.9	17.2	16.1	15.6	0.951	1.041	1.028	1.038
65+ years	35.32	33.70	25.68	22.15	23.9	33.8	39.3	32.2	1.478	0.997	0.653	0.688

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: (1) EUROMOD calculations; (2) Eurostat Database, At-risk-of-poverty rate by poverty threshold, age and sex (Source: SILC) [ilc_li02].



4.2.3 Validation of minimum wage

The minimum wage in Bulgaria is 180 BGN in 2007 and 2008, 220 BGN in 2009 and 240 BGN in 2010. In this section we give a brief overview what is the impact of minimum wage policy, if switched on. In our baseline scenario the minimum wage policy is switched off.

As we can see in Table 4.12.1 and Table 4.12.2, the introduction of minimum wage increases disposable income and employee gross earnings by 0.7% and 1.2% respectively. Personal income tax and employees SIC are also increased by approximately 0.3% and 0.6% respectively. The Gini index falls by 1.2% on average whereas poverty rates fall by approximately 0.2 percentage points.

Total disposable income, gross employee earnings, income tax and employee SICs increase slightly, by less than 1%. Owing social assistance payments would be reduced by 0.7% (UDB) or 6.6% (UDB and national SILC) in 2007. The Gini-coefficient and poverty rates would slightly decrease after implementing minimum wage.

Table 4.12.1 Impact of minimum wage (in mio BGN) – based on UDB

	Baseline (I)				Minimum wage included (II)				Ratio (I/II)			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Disposable income (total)	23,833	28,592	31,042	30,885	23,934	28,718	31,186	31,041	0.996	0.996	0.995	0.995
Gross employee earnings (total)	19,428	23,450	24,790	23,896	19,536	23,585	24,948	24,066	0.994	0.994	0.994	0.993
Income tax (total)	2,519	2,269	2,380	2,326	2,521	2,273	2,384	2,331	0.999	0.998	0.998	0.998
Employee SICs (total)	1,947	2,483	2,625	2,361	1,950	2,488	2,631	2,367	0.998	0.998	0.998	0.997
Social assistance (total)	163	164	126	167	162	164	125	167	1.007	1.003	1.012	1.002
Gini (Eq HDI)	32.54	34.15	32.79	32.25	32.33	33.91	32.54	31.98	1.007	1.007	1.008	1.008
At poverty risk (60% median HDI)	19.65	19.76	17.95	17.9	19.13	19.99	17.78	17.61	1.027	0.989	1.009	1.017

Table 4.12.2 Impact of minimum wage (in mio BGN) – based on UDB and national SILC

	Baseline (I)				Minimum wage included (II)				Ratio (I/II)			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Disposable income (total)	25,511	29,886	32,371	32,123	25,597	29,989	32,490	32,253	0.997	0.997	0.996	0.996



	Baseline (I)				Minimum wage included (II)				Ratio (I/II)			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Gross employee earnings (total)	19,428	23,450	24,790	23,896	19,536	23,585	24,948	24,066	0.994	0.994	0.994	0.993
Income tax (total)	1,457	1,763	1,852	1,808	1,460	1,775	1,865	1,823	0.998	0.993	0.993	0.992
Employee SICs (total)	1,599	2,028	2,148	1,930	1,611	2,044	2,166	1,948	0.992	0.992	0.992	0.991
Social assistance (total)	103	106	78	110	97	100	72	103	1.066	1.058	1.089	1.067
Gini (Eq HDI)	35.18	35.83	34.33	33.77	35.00	35.62	34.11	33.53	1.005	1.006	1.006	1.007
At poverty risk (60% median HDI)	21.09	21.94	20.44	19.80	20.75	21.85	20.37	19.38	1.016	1.004	1.003	1.022

Summary of “health warnings”

This summary provides an overview of the main issues that should be taken into account when the Bulgarian component of EUROMOD as well as its databases are to be used for analyzing inequality, poverty, and tax-benefit policy for the period 2007-2010.

- The sample utilized in 2008 BG SILC contains a variety of distortions. As there were no additional drawings to replace the households refused to participate, and a respective weighting scheme has been applied to compensate for this (based on demographic-territorial distributions of the population only), it can be assumed that subgroups with specific social and/or economic status are substantially underrepresented. At this point, no adjustments have been made to offset the changes in socio-demographic structures between the baseline and consecutive years.
- The results obtained for specific social benefits that are targeted to relatively small subgroups are quite unstable. Such individuals are either under or over-identified in the sample, so the simulation of such instruments should be treated with caution.
- In the framework of a voluntary participation in the survey, distortions in income recording are highly probable at both individual and household level variables. Apart from any intentional underreporting, the major sources of measurement errors are: recall errors, aggregation problems (in respect of annual values as well as for household level variables), and merging of items into just one recorded variable. The respondent needs to recall many details about the annual 2007 income at the middle of year 2008 which induces high likelihood of income recording mismatches. As a general issue, merging one or more specific items to the main benefit obstructs the precise splitting of benefits and validation of results.



- It should be noted that self-employment income has been recorded by a number of individuals which is much larger than the officially registered self-employed. Even with underreporting of the actual earnings, this income source provides a tax base which is actually not accessible by the state and simulation results in this respect should be considered with high caution.
- Information deficiency is found regarding the sources of investment income which undermines in some extent the validation based on national accounts data. This situation is typical for sample questionnaire surveys and SILC data is not an exclusion.
- The model assumes a full take up of all social benefits. However, non-take up of particular benefits is likely to induce additional distortions (especially the monthly benefit for low income based on GMI). This issue needs further clarification and research.
- As a general issue, validation is performed on the basis of official statistics that is produced by different governmental institutions. In some cases, simulation results seem to diverge substantially from the external statistics, but as a rule, the official figures are generated under a different methodology and scope, often based on compulsory observation, administrative processes, etc. This way many of the observed discrepancies of the sample estimates based on survey data should not be considered as simulation errors.

This version of the Bulgarian EUROMOD component is the first completed tax-benefit microsimulation model for the country. The pursuit of the first comprehensive simulation model is naturally related to a variety of human and information errors, some of which have been identified and corrected so far. It certainly needs additional revisions in order to achieve a higher degree of functionality and improved reflection of the real economic situation. Improvements are conceived in most of its elements, e.g. better updating of monetary variables, enhanced performance of eligibility rules, and improved baseline EU SILC datasets.

5. REFERENCES

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- *Sources for tax-benefit descriptions/rules*

Government sources (legislation, methodologies):

National Revenue Agency (Ministry of Finance):

www.nap.bg

Agency for Social Assistance (Ministry of Labour and Social Policy):

www.asp.government.bg

Ministry of Labour and Social Policy:

www.mlsp.government.bg

National Social Security Institute:

www.nssi.bg

National Statistical Institute:

www.nsi.bg