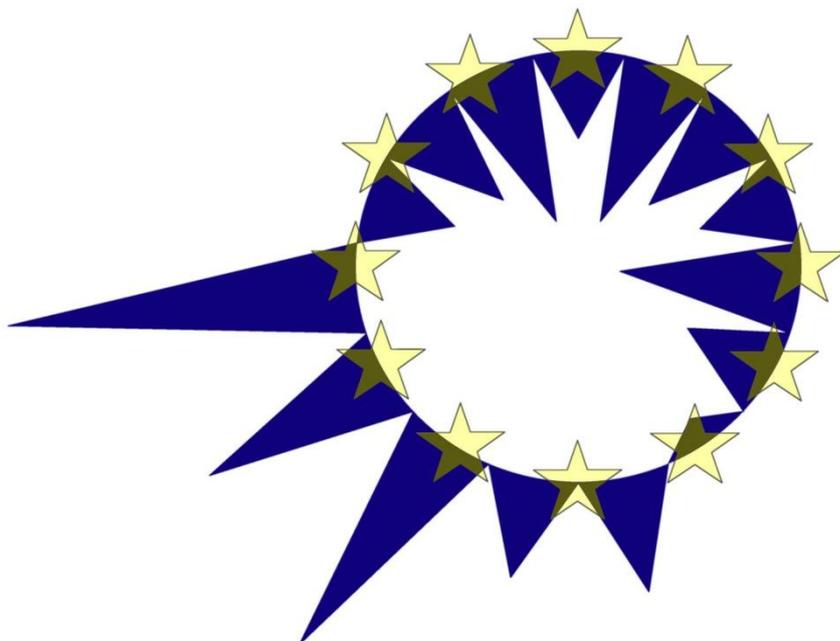


EUROMOD

COUNTRY REPORT



LATVIA (LV)

2007-2011

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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 Latvia. 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>

This document is supported by the European Union Programme for Employment and Social Solidarity – PROGRESS (2007-2013).

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

For more information see: <http://ec.europa.eu/progress>

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. Basic figures

	Pop. (m.) ^[a]	Pop. < 18 (%)	Pop. ≥ 65 (%)	Life expect. (years)	Fertility rate	Unemp. rate	GDP per head (PPP, EU27=100)	Currency Name	exch. rate ^[b]
2007	2.28	18.4	17.1	71.2	1.41	6.0	55.6	LVL	0.6963
2008	2.27	18.0	17.2	72.5	1.44	7.5	56.4	LVL	0.7047
2009	2.26	17.6	17.3	73.3	1.31	17.1	51.1	LVL	0.7036
2010	2.25	17.2	17.4	73.7	1.17	18.7	55 ^[c]	LVL	0.7093
2011	2.23	16.8	17.4	n/a	n/a	15.4	58	LVL	0.7093

^[a] Population statistics are based on population census of 2000. The latest population census was held in 2011 and provisional results suggest that previous data overestimated the size of the population.

However, until finalized results are available we are using population statistics based on the 2000 census.

^[b] Euro exchange rate on 30th of June. As of 1st January 2005 the Latvian lat has been pegged to the Euro at the rate 1 EUR = 0.7028 LVL with normal fluctuations around the fixed peg of +/-1%. The exchange rates shown in the table represent the exchange rates published by ECB and are based on a regular daily concertation procedure between central banks across Europe and worldwide.

^[c] Break in series

Source: Eurostat (2012)

1.2 The tax-benefit system

Table 2. Tax-benefit system and government budget

	Total general government revenue % of GDP	Total tax receipts % of GDP ^[a]	Total general government expenditure % of GDP	Social protection % of GDP ^[b]
2007	35.6	30.5	36.0	8.5
2008	34.9	29.4	39.1	9.6
2009	34.7	26.8	44.4	14.1
2010	35.7	27.3	43.9	13.8
2011	35.6	n/a	39.1	n/a

^[a] Total receipts from taxes and social contributions (including imputed social contributions) after deduction of amounts assessed but unlikely to be collected.

^[b] General government expenditures on social protection (according to COFOG classification).

Source: Eurostat (2012)



Table 3. Social protection expenditure by function according to COFOG classification (as % of total social protection expenditure)

	Sickness/ disability	Old age	Survivors	Family/ children	Unemployment	Housing	Social exclusion
2007	17.4	58.7	0.0	11.1	3.7	1.2	3.1
2008	20.5	59.0	0.0	8.0	3.8	1.4	3.3
2009	20.0	59.3	0.0	6.9	7.7	0.3	2.8
2010	17.3	63.9	0.0	6.6	6.1	0.4	3.4
2011	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: Eurostat (2012)

Table 4. Social protection expenditure by function according to ESSPROS classification (as % of total social protection expenditure)

	Sickness/ health care	Disability	Old age	Survivors	Family/ children	Unemployment	Housing	Social exclusion
2007	30.1	6.6	42.6	1.9	10.4	3.7	1.1	1.0
2008	28.9	7.2	42.9	1.9	11.0	4.0	1.4	0.9
2009	23.2	7.7	44.8	1.8	10.3	9.4	0.8	0.9
2010	20.5 ^[p]	7.5 ^[p]	51.1 ^[p]	1.7 ^[p]	8.4 ^[p]	7.3 ^[p]	0.8 ^[p]	1.3 ^[p]
2011	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Note: [p] – provisional data

Source: Central Statistical Bureau of Latvia (2012)

Table 5. Taxation (as % of total tax receipts)

	Personal income tax	Corporate income tax	Social security contributions		Taxes on goods and services	Other taxes
			Employees*	Employers		
2007	20.3	9.0	8.0	20.9	38.2	3.6
2008	22.0	11.0	7.9	20.7	35.4	3.0
2009	20.6	5.9	8.9	23.3	37.6	3.6
2010	22.7	3.6	8.6	22.4	38.3	4.4
2011	n/a	n/a	n/a	n/a	n/a	n/a

* Includes self-employed

Source: Eurostat (2012)

1.2.1 Basic information about the tax-benefit system

- Latvian tax-benefit system is unified across regions and local governments have little fiscal autonomy. Municipalities have the right to impose special municipal duties and decide on their rates (e.g., a duty on issuing local municipal documents, a duty on trade at public places). However, the special duties represent a minor source of local governments' budget revenues, the main source being revenues from personal income tax, which are partially transferred from the central government budget to local



governments' budgets. On the expenditure side, municipalities may decide on the level of social assistance benefits to its residents (e.g., Riga municipality has a higher Guaranteed Minimum Income level for certain population groups).

- Fiscal year runs from 1st January to 31st December.
- Over the period from 2007 to 2011 the pension age for women gradually increased from 61 to 62. For men it was 62 over the whole period. See Table 6.

Table 6. Retirement age for men and women, 2007-2011

	1 st Jan 2007 – 30 th Jun 2007	1 st Jul 2007 – 30 th Jun 2008	1 st Jul 2008 – 31 st Dec 2011
Men	62	62	62
Women	61	61.5	62

Source: Latvijas Vēstnesis (2012)

- Minimum school leaving age in Latvia is 15 years. For tax allowance purposes, a dependent child is defined as a child below 18 years and a child who continues secondary, professional, special or higher education until he/she reaches age of 24. The definition of a dependent child for benefit purposes can be different for different types of benefits.
- Persons/households with low income represent socially protected category in Latvia. To be eligible for Guaranteed Minimum Income benefit, a person/household has to have per person income below the determined threshold.
- Income is taxed on individual basis, spouses' or household members' income being assessed separately.
- In 2007 a flat tax rate of 25% was used to tax income of both employees and self-employed. As of 2008, the tax rate on self-employed income was reduced to 15%, but as of January 1, 2009, tax rate on employees' income was reduced to 23%. In 2010, tax rate for both employees and self-employed was raised to 26%, but as of 2011 – reduced to 25%. As of 2010, income from capital is subject to personal income tax and is taxed at a reduced rate of 10% or 15%.
- Generally the income tax system works to match tax withholdings with the exact amount due in the end of the financial year. However, there are certain groups of economic agents who have to file annual tax returns: e.g., self-employed, people receiving income from abroad, people who receive income subject to a lowered tax rate (e.g., people receiving royalties). Also, people who are eligible for tax refund (e.g., for deductible expenditures on education or health care) have to file annual tax return. On December 15, 2011, the Latvian government passed the Law on Natural person financial status and undeclared income declaration, which foresees that all Latvian residents that comply with certain criteria (e.g. have bank deposits exceeding 10 000 LVL or an outstanding loan of more than 10 000 LVL) are obliged to submit a financial status declaration and to pay 15% income tax on all previously undeclared income received in the period from 1991 to 2007.
- There is a statutory indexing regime for the state pensions (old-age, disability and survivors pensions), which takes account of consumer price index (CPI) growth and the growth of average wages. Also, there is an indexation regime for compensation for the loss of capacity for work due to a work accident or occupational disease, and compensation for the loss of breadwinner, which accounts for just CPI growth.



However, in 2009 - 2011, as part of budget austerity measures, the indexation rules were changed, which resulted in no indexation during deflation period.

- In Latvia the Cabinet of Ministers sets a minimum monthly wage which covers all types of employees in all sectors. The level of minimum wage was 120 LVL in 2007, 160 LVL in 2008, 180 LVL in 2009 and 2010, 200 LVL in 2011.

1.3 Social Benefits

1.3.1 Unemployment benefits

Unemployment benefit (*bezdarbnieka pabalsts*): A contributory benefit paid to registered unemployed, given that the person is actively looking for a job. Persons above the retirement age, disabled, self-employed, persons working while incarcerated are not eligible for unemployment benefit. To be eligible for unemployment benefit, the minimum length of contributions should be one year and social security contributions for unemployment should be made for at least nine months in 12 months preceding the unemployment status. Duration of the benefit is nine months and the amount of the benefit is 50% - 65% of the previous average wage, depending on the length of contribution history. Amount of the benefit is gradually phased out during nine months. The speed and degree of phasing out depends of the length of contribution history. Up to 2008 the unemployment benefit was received for nine months in the amount of the 100% of the assigned benefit during the first three months of unemployment, at 75% rate in the following three months and 50% for the last three months. In 2008, duration of eligibility for the unemployment benefit was made dependent on the working history: those with working history shorter than nine years became eligible for the benefit for only four months (with gradual phasing out of the benefit to 75% of the initial level), those with working history 10 – 19 years could receive the benefit for 6 months (during the last two months they could receive only 50% of the initial level), but those with working more than 20 years could receive the benefit for nine months (the level of the benefit was gradually phased out from 100% in the first three months to 50% in the last 3 months of unemployment). As of July 2009 and until December 2011, duration of the benefit has been prolonged to nine months, while the degree and the speed of phasing out of the benefit has again been made dependent on working history of the unemployed. As of January 2010 and until end-2014 there is a ceiling on the daily amount of the unemployment benefit: in case the daily amount of the assigned benefit exceeds 11.51 LVL, the unemployed is eligible for receiving 11.51 LVL daily plus 50% of the difference between 11.51 LVL and the assigned daily amount. The benefit is not taxable.

Unemployment allowance during occupational training, retraining and raising of qualification and during obtaining of informal education (*bezdarbnieka stipendija profesionālās apmācības, pārkvalifikācijas un kvalifikācijas paaugstināšanas laikā un neformālās izglītības iegūšanas laikā*): The training allowance is paid to registered unemployed, who participates in a training programme. The allowance amounts to 70 LVL per month, or, if training takes less than one month, the allowance is paid proportionally to the time spent on training. Not taxable.

Public works programme – workplaces with stipends in municipalities (*Darba praktizēšana ar stipendiju pašvaldībās – “simtlatnieku programma”*). Since September 2009 until mid-2011, the Latvian government with support from the European Social Fund and the World Bank implemented a public works programme to mitigate the negative consequences of the crisis. Those unemployed who were not eligible for the unemployment benefit could participate in public works programme in municipalities, which involved up to 6 months of low-skilled work and was rewarded with a stipend of 100 LVL per month. During the programme implementation



period, almost 100 thousands unemployed participated in the programme. The stipends are not taxable.

1.3.2 Old-age benefits

Old-age pension (*vecuma pensija*): Latvian pension system consists of three tiers: (i) mandatory state non-funded tier, (ii) mandatory state funded scheme and (iii) voluntary private pension scheme. The first tier is financed on the basis of pay-as-you-go. The second tier was created in 2001 and is obligatory for those who are born after 1st July 1971. Those who are born between 2nd July 1951 and 30th June 1971 can voluntarily participate in the second tier. Participation in the second tier does not require any additional contributions, as the amount contributed is split between the first and the second tiers. The third tier is voluntary. Currently official retirement age in Latvia is 62 years for both men and women. To be eligible for old-age pension, a person should have had at least 10 years of social contribution history. In case the social contribution history is more than 30 years, the person is eligible for early retirement, after the age of 60. The early retirement possibility will cease on 31st December 2013. Within fiscal austerity measures that are being implemented, pensions to early retirees have been restricted: those who were assigned an early pension before June 30, 2009, receive 80% of pension amount they are eligible for. Those who were assigned an early pension after this date will receive only 50% of the full amount. Old-age pensions are subject to personal income tax.

Service pension (*izdienas pensija*): Service pensions are provided to representatives of certain professions (e.g., certain occupations in transport industry, certain artistic professions) before the official retirement age if a person has been employed in a given profession for not less than $\frac{3}{4}$ of the period which makes the person eligible for the service pension. The size of the service pension depends on the length of service and on the average contribution wage. The service pensions are subject to personal income tax.

State social security benefit in case of old-age (*valsts sociālā nodrošinājuma pabalsts sakarā ar noteiktā vecuma sasniegšanu*): A benefit paid to the elderly in case they are not entitled to the state old-age pension. The benefit is a fixed amount per month. Not taxable.

1.3.3 Survivor's benefits

Survivor's pension (*apgādnieka zaudējuma pensija*): Survivor's pension is paid to the children of the deceased person (except if the death is caused by an occupational disease or a work accident, see "compensation for the loss of breadwinner" below), irrespective of the fact whether they were dependent on the deceased person. Children below the age of 18 or children of any age if they are disabled from childhood are eligible for the survivor's pension. Also, dependent family members of the deceased person – brothers, sisters and grandchildren below 18 years old, if they don't have parents that are capable to work, as well as brothers, sisters and grandchildren independently of age if they became disabled before 18 years of age and if they don't have parents that are capable of work, are eligible for the pension. The size of the pension depends on the prospective size of the deceased person's old-age pension and on the number of dependents, but its size shouldn't be lower than 65% of state social security benefit. The pension is subject to personal income tax.

Compensation for the loss of breadwinner due to accident at work or occupational disease (*atļdzība par apgādnieka zaudējumu sakarā ar nelaimes gadījumu darbā vai arodslimību*): The compensation is paid to family members of a person who died because of a work accident or an occupational disease, if the person had been insured, and if the family members are unable



to work and were fully or partially supported by the person. The size of the benefit depends on the deceased person's previous wage, on the degree of kinship and on the number of dependents. The spouse and the parents of the person can receive a compensation of up to 25% of the person's previous average contribution wage. In case the dependent (spouse, grandparent, adult sibling) is taking care of a child under the age of 8, he/she can receive an additional compensation of 25% of the deceased person's wage. Dependent children below 18 years age, in case they are left with one parent, can receive a compensation of 25% - 55% of the deceased person's previous wage, the proportion being dependent on the number of children. In case dependent children lost both parents, they can receive 40% to 70% of the person's previous wage. Children above the age of 18 can also be eligible for the benefit (up to 25%) if they received a disability status before they turned 18. Also, grandchildren or siblings who are disabled from childhood, as well as children below age 24 who continue education are eligible for the compensation up to 25%. The benefit is not taxable.

State social security benefit in case of a loss of a breadwinner (*valsts sociālā nodrošinājuma pabalsts apgādnieka zaudējuma gadījumā*): A benefit paid to the survivors in case they are not entitled to the state survivor's pension. The benefit is a fixed amount per month. Not taxable.

1.3.4 Sickness benefits

Sickness benefit (*slimības pabalsts*): sickness benefit is a contributory benefit paid to employees and socially insured self-employed. Duration of the benefit is up to 26 weeks in case a person receives the benefit without interruptions (the period can be prolonged to maximum of 52 weeks in some cases) and 52 weeks over a three year period if a person receives the benefit with interruptions. The benefit is also paid to a parent taking care of a sick child under age 14; in this case maximum duration of the benefit is 14 days if the child is treated at home or 21 day if the child is treated in a hospital. During the first 10 days the benefit is paid by the employer in the amount of 75-80% of the employee's average wage. Starting from the 11th day, the benefit is paid by State Social Security Agency in the amount of 80% of the average wage. From 2010 until end-2014, as part of the budget austerity measures, the size of the benefit has been restricted: if the daily amount of the benefit exceeds 11.51 LVL, the recipient gets 11.51 LVL plus 50% of the difference between 11.51 LVL and the full daily size of the benefit. The benefit is subject to personal income tax.

Sickness benefit in case of a work accident or an occupational disease (*slimības pabalsts sakarā ar nelaimes gadījumu darbā vai arodslimību*): The benefit is paid to a socially insured person who has temporarily lost capacity for work due to a work accident or an occupational disease. The benefit amounts to a certain percentage of the previous average wage and, in case of an occupational disease. The benefit is subject to personal income tax.

Health service benefit provided by municipalities (*pašvaldības pabalsts medicīnas pakalpojumiem*): This benefit can be provided by municipalities to low income individuals/households. The size and eligibility conditions of the benefit are determined by municipal regulations. The benefit is not taxable.

1.3.5 Disability benefits

Disability pension (*invaliditātes pensija*): A person is eligible for disability pension if she/he has a disability status, is below the retirement age, has social contribution history of at least three years and if disability is not caused by an accident at work or occupational disease. The amount of the benefit depends on the previous average social contribution wage, on the length of social security history and on the degree of disability. The disability pension is subject to personal income tax.



State social security benefit in case of disability (*valsts sociālā nodrošinājuma pabalsts invaliditātes gadījumā*): A benefit paid to people with disability in case they are not entitled to the state disability pension. The benefit is a fixed amount per month. Not taxable.

Compensation for the loss of capacity for work due to a work accident or occupational disease (*atlīdzība par darbības zaudējumu*): Compensation is provided to persons who have permanently lost capacity for work due to a work accident or an occupational disease. The amount of compensation depends on the average social insurance contribution wage and the proportion of loss of work capacity.

Allowance to compensate transport expenses of persons with mobility disabilities (*pabalsts transporta izdevumu kompensācijai invalīdiem, kuriem ir apgrūtināta pārvietošanās*): The benefit is a fixed amount paid once per six months period to persons certified as needing a specialized care. Not taxable.

Benefit to disabled with special care need (*pabalsts invalīdam, kuram nepieciešama kopšana*): The benefit is assigned to a person above 18 years age, who has a disability status and certified by the Health and Capacity for Work Expert Physicians' Commission as needing special care. The benefit has been introduced as of January 1, 2008. Not taxable.

1.3.6 Family and children-related allowances

Family state benefit (*ģimenes valsts pabalsts*): Non-contributory. The benefit is paid to one of a child's parents or a person who actually takes care of a child according to a court's decision, or to the child himself after 18 years age, if he/she was previously under guardianship. Until June 30, 2009, the amount of the family state benefit was 8 LVL per month for the first child, 9.60 LVL per month for the second child, 12.80 LVL per month for the third child, and 14.40 LVL per month for any subsequent children. From 1st July 2009 until 31st December 2012, the benefit is 8 LVL per month for every child irrespective of the number of children in the family. The benefit is granted until the child reaches 15 years of age or, if he/she continues with education, until he/she is 20 years old (starting from 1st July 2009 – 19 years old) as long as he/she does not receive local government scholarships or gets married. The benefit is not taxable.

Child birth benefit (*bērna piedzimšanas pabalsts*): Non-contributory benefit. The benefit is a lump-sum, paid to one of the child's parents or a legal guardian. The benefit amounts to 296 LVL. The parent also receives an extra payment to children born before 4th April 2010: 100 LVL for the first child, 150 LVL for the second child and 200 LVL for every following child. The benefit is not taxable.

Child care benefit (*bērna kopšanas pabalsts*): The benefit is provided on the monthly basis to one of the child's parents, or to a legal guardian or a person who actually takes care of the child following the court's decision, during the first two years of a child's life, if the person is not employed (is not an employee or a self-employed). During the first year of a child's life, the amount of the benefit is 50 LVL per month, but during the second year of a child's life – 30 LVL per month. For every additional child born together, there is an extra payment of 50 LVL monthly during the first year of the children's life and 30 LVL during the second year of the children's life. Up to 1st January 2008, the benefit was provided to socially insured as well as not socially insured persons. For unemployed person, the benefit amounted to 50 LVL during the first year of the child's life and 30 LVL during the second year of the child's life. For socially insured persons, the benefit amounted to 70% of the person's average social insurance contribution salary (which was calculated as the average wage for the year that had finished three months before the birth). The payment was not less than 56 LVL and not more than 392 LVL per month. Until 8th June 2007 a person who remained at work during a child care leave



received an amount equal to half of the benefit which he/she could receive not working (but not less than 56 LVL). Between 9th June 2007 and 31st December 2007, a working person was entitled to full benefit amount. As of 1st January 2008, the child care benefit for socially insured parents was replaced by parental benefit. The benefit is not taxable.

Parental benefit (*vecāku pabalsts*): Introduced from January 1, 2008, and replaced the child care benefit for socially insured parents. This is a contributory benefit and it is equal to a percentage of the average contribution wage. The benefit cannot be lower than a minimum threshold, but it has no ceiling. The benefit is paid to one of the child's parents or to a person who actually takes care of the child in accordance with a court decision. A person is eligible for the parental benefit starting from the moment when maternity benefit is over and until the child is one year old. The benefit is not taxable.

Maternity benefit (*maternitātes pabalsts*): A contributory benefit paid to a woman during pregnancy and after the child birth. Socially insured employees and self-employed persons are eligible for this benefit. The benefit is paid in two payments. Generally the first payment is made for last 70 days of pregnancy. And the second payment is made after the child birth and covers 54 days. The size of the benefit is equal to a percentage of the previous average wage. The benefit is not taxable.

Paternity benefit (*paternitātes pabalsts*): A contributory benefit paid to socially insured father of a newborn child. The father can claim a ten days paternity leave in the first two months of a child's life. The benefit amounts to a certain percentage of the father's average social insurance wage. The benefit is not taxable.

Disabled child care benefit (*bērna invalīda kopšanas pabalsts*): Non-contributory benefit. The benefit is a monthly lump-sum payment to one of the disabled child's parents or to a person who actually takes care of the child following the court decision. The benefit is paid until the child loses disability status or reaches the age of 18. The benefit is not taxable.

State support to the children suffering from celiac disease without formally stated disability (*valsts atbalsts ar celiakiju slimiem bērniem, kuriem nav noteikta invaliditāte*): Non-contributory benefit. This support is provided to children who have a diagnosis of celiac disease, but who are not certified as disabled. The benefit is not taxable.

Benefit to guardian for supporting a child (*pabalsts aizbildnim par bērna uzturesanu*): Non-contributory benefit. This is a fixed monthly benefit paid to a legal guardian of a child. The benefit is not taxable.

Remuneration for the fulfillment of foster family duties (*atlīdzība par audžuģimenes pienākumu pildīšanu*): The remuneration is paid to the family or a person, who has obtained the status of a foster family. Not taxable.

Remuneration for the adoption of a child (*atlīdzība par bērna adopciju*): The remuneration is a lump-sum payment to one of the stepparents of the adopted child, paid upon the court decision on the adoption of the child. Not taxable.

Remuneration for the care of an adopted child (*atlīdzība par adoptējamā bērna aprūpi*): Remuneration for the care of an adopted child is granted to an adopter who takes care of a child. Not taxable.

1.3.7 Social exclusion benefits

Guaranteed minimum income benefit (*garantētā minimālā ienākuma pabalsts (GMI)*): A separately living person or a household living below the determined income level can receive



this benefit to ensure basic subsistence needs. The minimum level of guaranteed income is set by the Cabinet of Ministers, but municipalities have the right to set a higher level. The benefit is calculated as the difference between the determined minimum income and a person's income (excluding some income sources). The benefit is not taxable.

Municipal benefit in an extraordinary situation (*pašvaldības pabalsti ārkārtas situācijās*): Municipalities can provide support to individuals in extraordinary situations. The benefit is lump-sum payment and can be provided regardless of the beneficiary's income level. The benefit is not taxable.

Other special purpose benefits provided by municipalities (*citi pašvaldību piešķirtie mērķa pabalsti*): Other municipality benefits include subsidized provision of lunches at schools and food in general, benefits for raising and educating children, allowances to cover transport expenses, benefits for foster families, benefits for orphans and people released from prison to start life, and benefits for other purposes.

Funeral benefit (*apbēdīšanas pabalsts*): Funeral benefit is a lump-sum payment paid to the family members of the deceased. The benefit is not taxable.

1.3.8 Housing benefits

Housing benefit (*dzīvokļa pabalsts*): This benefit is provided by local governments to low-income households. Eligibility rules and benefit amounts are slightly different across municipalities. The maximum benefit amount is determined by the sum of eligible GMI of all household members and eligible housing expenditures (that can be covered by the benefit according to the rules of municipality). The benefit amount is reduced for the whole amount of household income (including GMI benefit if it is received). The benefit is not taxable.

- *Scope and scale*

Table 7 and 8 demonstrate coverage of the benefits and contribution of the benefits to general government budget expenditures.



Table 7. Social benefits: recipients (as % of population)

	2007	2008	2009	2010	2011
Unemployment benefit	3.85	4.53	7.23	5.89	3.71
Old-age benefits					
Old-age pension (including service pension)	20.78	20.72	20.88	21.22	21.97
State social security benefit (in case of old age) ^a	0.04	0.04	0.03	0.03	0.03
Survivor's benefits					
Survivor's pension	1.00	1.05	1.05	1.03	0.99
State social security benefit (in case of a loss of breadwinner) ^a	0.04	0.04	0.03	0.03	0.03
Sickness Benefits					
Sickness benefit ^a	6.67	6.46	6.57	6.18	6.48
Sickness benefit in case of a work accident or an occupational disease ^a	0.07	0.08	0.07	0.07	0.08
Health service benefit provided by municipalities ^b	2.56	2.85	2.06	n/a	n/a
Disability benefits					
Disability pension	2.89	2.91	2.96	3.05	3.10
State social security benefit (in case of disability) ^a	0.56	0.57	0.60	0.64	0.67
- disabled from childhood	0.42	0.43	0.45	0.47	0.49
- other disabled	0.14	0.15	0.16	0.17	0.18
Compensation for the loss of capacity for work due to a work accident or occupational disease	0.20	0.24	0.29	0.31	0.31
Family and children related allowances					
Family state benefit ^a	11.70	11.67	11.45	10.97	10.28
Child birth benefit	0.98	1.07	1.02	0.89	0.84
Child care benefit	1.77	1.27	1.29	1.30	1.22
Parental benefit	-	0.74	0.74	0.58	0.44
Maternity benefit ^a	0.85	0.87	0.76	0.65	0.63
Paternity benefit	0.36	0.43	0.38	0.32	0.32
Social exclusion benefits					
GMI benefit ^b	1.12	1.14	2.66	5.14	n/a
Municipal benefit in an extraordinary situation ^b	0.74	0.69	0.59	n/a	n/a
Other special purpose benefits provided by municipalities ^b	5.11	4.78	3.10	n/a	n/a
Funeral benefit	1.21	1.21	1.16	1.22	1.19
Housing benefit ^b	1.94	2.43	3.02	4.37	n/a

Notes: (a) State Social Insurance Agency data received on a special request; (b) Municipality Reports on social services and social assistance, available on the webpage of the Ministry of Welfare <http://lm.gov.lv/text/1382>. Data for 2010 is approximation.

Source: Own calculations based on the data available on the website of the State Social Insurance Agency: <http://www.vsaa.gov.lv/lv/budzets-un-statistika/statistika> (unless stated otherwise in Notes).



Table 8. Social benefits: expenditure

	2007	2008	2009	2010
Annual expenditure (LVL mln) ^c	1254.5	1547.6	1848.4	1755.5
as % of total social expenditure				
Unemployment benefit	3.45	3.65	7.42	5.07
Old-age benefits	50.63	52.16	54.57	59.49
Old-age pension (including service pension)	50.59	52.13	54.55	59.47
State social security benefit (in case of old age) ^a	0.04	0.03	0.02	0.02
Survivor's benefits	1.71	1.67	1.53	1.54
Survivor's pension	1.67	1.64	1.51	1.52
State social security benefit (in case of a loss of breadwinner) ^a	0.04	0.03	0.02	0.02
Sickness Benefits	3.91	4.51	5.35	5.63
Sickness benefit	3.74	4.33	5.14	3.82
Sickness benefit in case of a work accident or an occupational disease ^a	0.01	0.01	0.01	0.01
Health service benefit provided by municipalities ^b	0.17	0.17	0.11	n/a
Disability benefits	6.32	6.30	6.66	7.17
Disability pension	5.34	5.36	5.52	5.84
State social security benefit (in case of disability) ^a	0.61	0.51	0.60	0.65
- disabled from childhood	0.47	0.39	0.49	0.53
- other disabled	0.14	0.12	0.10	0.12
Compensation for the loss of capacity for work due to a work accident or occupational disease	0.38	0.43	0.55	0.69
Family and children related allowances	9.81	10.91	9.95	8.42
Family state benefit	3.52	2.82	2.13	1.96
Child birth benefit	0.76	0.67	0.54	0.40
Child care benefit	3.41	0.74	0.62	0.66
Parental benefit	-	4.41	4.71	3.83
Maternity benefit	2.03	2.16	1.84	1.50
Paternity benefit	0.09	0.11	0.11	0.09
Social exclusion benefits	1.36	1.41	1.30	n/a
GMI benefit ^b	0.13	0.12	0.34	1.01
Municipal benefit in an extraordinary situation ^b	0.07	0.07	0.05	0.04
Other special purpose benefits provided by municipalities ^b	0.63	0.66	0.45	n/a
Funeral benefit	0.53	0.55	0.46	0.50
Housing benefit ^b	0.19	0.29	0.28	0.39

Notes: (a) Data on the aggregate expenditure from State Social Insurance Agency received on a special request; (b) Data on the aggregate expenditure from Municipality Reports on social services and social assistance, available on the webpage of the Ministry of Welfare <http://lm.gov.lv/text/1382>; (c) Central Statistical Bureau of Latvia. Data on 2011 not available.

Source: Own calculations based on the data available on the website of the State Social Insurance Agency: <http://www.vsaa.gov.lv/lv/budzets-un-statistika/statistika> (unless stated otherwise in Notes).



- *Not strictly benefits*

Severance pay (*atļaišanas pabalsts*): is compensation paid by an employer to an employee if a labour contract is terminated on the employer's initiative for reasons other than breaking terms of the contract by the employee or, on the employee's initiative in case the employee has a good cause for being unable to continue employment relationships. The amount of the compensation, depending on the length of service. The compensation is subject to personal income tax.

Pension from private pension fund (*pensija no privātā pensiju fonda*). A person making voluntary contributions to a private pension fund or having his/her employer making contributions on his/her behalf is entitled to additional old-age pension capital. Private pensions are subject to personal income tax.

State child support (alimony) (*valsts uztūrlīdzekļi bērniem (alimenti)*): state child support is provided to substitute for the child support payments that have to be paid by a child's parent in accordance with the court decision. The state support is provided in case the collection of the payments from the parent is declared impossible by law enforcement officer or in case the parent's provided support is below the minimum stipulated by the Civil Law. The amount of the state support is equal to the minimum level stipulated by the Civil Law to a child aged 7 to 18 years.

1.4 Social insurance contributions

Social insurance contributions (*sociālās apdrošināšanas iemaksas*) are used to finance contributory benefits, such as pensions, unemployment benefits etc. There are two major social insurance regimes in Latvia: (i) general regime for **employees**, who are insured against all insurance cases and (ii) social insurance regime for **self-employed**, who are insured against all insurance cases except unemployment and work accidents or occupational disease. Apart from the above two categories of economic agents, for whom social insurance is mandatory, there are certain categories of agents who can make voluntary contributions for pensions, disability, maternity, sickness and parents' insurance.

For employees, the base for social security contributions is all income received as remuneration for the work before any deductions. Self-employed can choose the level of income from which to make social security contributions, however, the base for the contributions may not be lower than a certain threshold set by the Cabinet of Ministers. There is also a maximum level of income from which social contributions can be made, which is binding for both employees and self-employed¹. In 2007, the annual income ceiling for making social contributions amounted to 23800 LVL, but in 2008 – 29600 LVL.

In general case, the rate of social insurance contributions is 35.09%, of which 24.09% is paid by employer and 11.00% is paid by employee. Up until January 1, 2011, the rate was 33.09%, the rate paid by employees amounting to 9.00%. Importantly, if a person reaches the retirement age (62 years) but continues to work, he/she is still subject to mandatory social contributions against all insurance cases, except unemployment and disability. However the owners of farms are not subject to mandatory social insurance payments after they have reached pension age. Contribution rate for self-employed during the period 2007-2011 has varied between 28.17% and 31.52%. After self-employed reaches the retirement age, he/she remains subject to mandatory social security contributions except insurance against disability.

¹ As part of anti-crisis budget austerity measures, the income ceiling was abolished in 2009-2013.



The minimum annual income level for social contributions by self-employed in 2007 and 2008 amounted to 1800 LVL, but as of 2009, the minimum income was linked to the statutory monthly minimum wage. In 2009-2011 the minimum income amounted to 12 monthly minimum wages – 2160 LVL in 2009-2010 and 2400 LVL in 2011.

- *Scope and scale*

The following tables show social security contributors' proportion in total population and share of social security revenues in total general government revenues.

Table 9. Social contributions: contributors (as % of population¹)

Social contributions	2007	2008	2009	2010	2011
Employees	39.9	41.3	38.6	32.0	32.7
Self-employed	1.3	1.4	0.7	0.7	0.7

Notes: ¹Population on 1 January; population statistics are based on population census of 2000. The latest population census was held in 2011 and provisional results suggest that previous data overestimated the size of the population. However, until finalized results are available we are using population statistics based on the 2000 census.

Source: State Revenue Service (2012), Central Statistical Bureau (2012)

Table 10. Social contributions: revenue

	2007	2008	2009	2010	2011*
Social contributions (LVL)	1286.2	1330.0	1115.1	1070.9	1,229.6
as % of total revenue ¹					
Employees	7.8	7.7	8.7	8.4	n/a
Employers	20.9	20.7	23.3	22.4	n/a
Self-employed ²	0.2	0.2	0.2	0.2	n/a

Notes: ¹ General government revenues from taxes and social contributions after deduction of amounts assessed but unlikely to be collected

² Data includes contributions by non-employed persons

* Provisional, based on monthly reports of the State Treasury.

Source: Eurostat (2012), State Treasury (2012), own calculations.

1.5 Taxes

Personal income tax (*iedzīvotāju ienākuma nodoklis*): Personal income tax is paid on individual basis. Personal income of employees was taxed at a flat rate of 25% in 2007-2008. In 2009, in an attempt to shift tax burden from production factors to consumption factors, PIT rate on employees' income was reduced from 25% to 23%, while tax exempt income and allowances for dependent persons and disability were increased. Income of self-employed in 2007 was taxed at 25%, but, as of 2008, the rate was reduced to 15%. Starting from 1st July 2009, as part of budget austerity measures, basic allowances were reduced, but as of 2010, personal income tax rate both for employees and self-employed was raised to 26%. Another change introduced in 2010 is that income from capital became subject to personal income tax, taxed at a reduced rate of 10% or 15%. In 2011, basic allowances and non-taxed minimum were increased marginally, while the tax rate for both employees and self-employed was cut to 25%.



Corporate income tax (*uzņēmuma ienākuma nodoklis*): Since 2004, the corporate income tax rate in Latvia is 15%, which is one of the lowest rates in the EU. The tax is levied on business income of resident companies and on non-resident companies permanently located in Latvia.

Compulsory social security contributions (*valsts sociālās apdrošināšanas obligātās iemaksas*): The contribution rate is 35.09%, of which 24.09% is paid by employer and 11% is paid by employee. The contribution rate paid by self-employed is slightly lower and it has been changed over the recent years: it was reduced from 29.95% to 28.17% in 2007-2010, but in 2011 increased to 31.52%. The minimum taxable base for annual amount of social security contributions of the self-employed is twelve times monthly minimum wage, i.e., a self-employed can choose to pay the social security contributions from the minimum base, even if his/her annual income exceeds twelve minimum wages.

Property tax (*nekustamā īpašuma nodoklis*): Property tax is levied on buildings, constructions and land. Before 2010, the tax rate was 1% of property cadastral value and was applied to land and buildings owned for purposes other than residential. In 2010, residential dwellings became subject to property tax (taxed at 0.1% - 0.3% of the dwelling's cadastral value, the rate being dependent on the value), while the rate on non-residential dwellings and land was increased to 1.5%. In 2011, the rate applied to residential buildings was increased to 0.2%-0.6% of cadastral value.

Value added tax (*pievienotās vērtības nodoklis*): In 2007-2008, the standard VAT rate was 18%, but the reduced rate, which was applied to such goods as medicines, products for infants, books and others, was 5%. In 2009, as part of the government's implemented austerity measures, the standard rate was raised to 21%, but the reduced rate was increased to 10%, while the range of goods which the reduced rate is applied to, has been narrowed. As of 2011, the standard VAT rate was further increased to 22%, the reduced rate was raised to 12%.

Excise tax (*akcīzes nodoklis*): Excise tax is levied on alcoholic beverages, tobacco, oil products and some non-alcoholic beverages.

Tax on cars and motorcycles (*vieglo automobiļu un motociklu nodoklis*): the tax is levied on cars and motorcycles which are registered in Latvia for the first time. The tax rate is dependent either on the amount of carbon dioxide emissions or age of a vehicle and engine capacity.

- *Scope and scale*

Table 12 shows contribution of each of the above taxes to total tax revenues.



Table 11. Taxes: taxpayers (as % of population)

	2007	2008	2009	2010	2011
Direct taxes	n/a	n/a	n/a	n/a	n/a
Personal income tax	n/a	n/a	n/a	n/a	n/a
Corporate income tax	n/a	n/a	n/a	n/a	n/a
Compulsory SIC	n/a	n/a	n/a	n/a	n/a
Property tax	n/a	n/a	n/a	n/a	n/a
Indirect taxes	n/a	n/a	n/a	n/a	n/a
Value added tax	n/a	n/a	n/a	n/a	n/a
Excise tax	n/a	n/a	n/a	n/a	n/a
Tax on cars and motorcycles	n/a	n/a	n/a	n/a	n/a

Table 12. Taxes: revenue*

	2007	2008	2009	2010	2011***
Annual revenue (mln LVL)**	4451.3	4653.4	3453.9	3455.6	3,874
As % of total revenues					
Direct taxes	61.1	63.9	61.6	60.9	60.8
Personal income tax	20.3	22.0	20.6	22.7	20.5
Corporate income tax	9.0	11.0	5.9	3.6	5.1
Compulsory social security contributions	28.9	28.6	32.3	31.0	30.8
Property tax	1.7	1.5	2.1	2.6	2.8
Other direct taxes	1.2	0.8	0.7	1.0	1.6
Indirect taxes	38.9	36.1	38.4	39.1	39.2
Value added tax	26.7	22.7	22.2	24.2	24.7
Excise tax	9.5	11.1	14.0	13.0	12.4
Tax on cars and motorcycles	0.4	0.2	0.1	0.1	0.1
Other indirect taxes	2.3	2.1	2.1	1.9	1.9

Notes: * Total receipts from taxes and social contributions (imputed social contributions not included) after deduction of amounts assessed but unlikely to be collected

** General government sector (S.13)

*** Provisional, based on monthly reports of the State Treasury.

Source: Central Statistical Bureau of Latvia (2012), State Treasury (2012), own calculations

2. SIMULATION OF TAXES AND BENEFITS IN EUROMOD

2.1 Scope of simulation

Not all the taxes and benefits mentioned in the previous section are simulated by EUROMOD. Firstly, some are beyond its scope entirely and are neither included in the EUROMOD database nor in its output income variables. Secondly, some are not possible to simulate accurately with the available data. They are included in the database and may be chosen as components of output variables, but the rules governing them may not be changed by the model. Here we distinguish benefits/taxes which are included as a separate variable and benefits/taxes which are included as a component of aggregated variable (in case it is not possible to make a split). Thirdly, other benefits contain complicated rules and/or available data does not provide enough information to be able to simulate benefit in all detail. Table 13 and Table 14 classify each of the tax-benefit instruments into one of these four groups and provide a brief explanation as to why the instrument is not fully simulated if this is the case.



Table 13. Simulation of benefits in EUROMOD

Benefit name	Output variable	Treatment in Euromod				Why not fully simulated?
		2007	2008	2009	2010	
Unemployment benefits						
Unemployment benefit	bun_s	PS	PS	PS	PS	No precise information on relevant social contribution history, average pre-unemployment wage, duration of unemployment benefit.
Old-age benefits						
Old-age pension	poatx	I	I	I	I	No data on full social contribution history.
State social security benefit (in case of old age)	poass_s	PS	PS	PS	PS	Eligibility is taken from the input data.
Survivor's benefits						
Survivor's pension	psutx	I	I	I	I	No information on deceased persons.
State social security benefit (in case of a loss of a breadwinner)	psuss_s	PS	PS	PS	PS	Eligibility is taken from the input data.
Sickness benefits						
Sickness benefit	bhl	IA	IA	IA	IA	No data on sickness duration.
Sickness benefit in case of a work accident or an occupational disease	bhl	IA	IA	IA	IA	No data on sickness cause and duration.
Health service benefit provided by municipalities	bhl	IA	IA	IA	IA	No data on eligibility for benefit and municipality which rules apply.
Disability benefits						
Disability pension	pditx	I	I	I	I	No data on degree of disability and social contribution history.
State social security benefit (in case of disability)	pdiss_s	PS	PS	PS	PS	Eligibility is taken from the input data.
Compensation for the loss of capacity for work due to a work accident or occupational disease	pdint	I	I	I	I	No data on the cause of disability.
Family and children related allowances						
Family state benefit	bfana_s	S	S	S	S	-
Child birth benefit	bfaba_s	S	S	S	S	-
Child care benefit	bfacc_s	S	S	S	S	Average contribution wage before a child's birth is imputed based on assumptions.
Parental benefit	bfawk_s	-	S	S	S	Average contribution wage before a child's birth is imputed based on assumptions.
Maternity benefit	bfama_s	S	S	S	S	Average contribution wage before a child's birth is imputed based on assumptions.
Paternity benefit	bfapl_s	S	S	S	S	Average contribution wage before a child's birth is imputed based on assumptions.



Continued..

Social exclusion benefits						
Benefit for ensuring the guaranteed minimum income level	bsamm_s	PS	PS	PS	PS	Specific municipality rules can not be simulated. Only standard rules and rules for Riga municipality are simulated. Residents of Riga are selected randomly.
Municipal benefit in an extraordinary situation	bsa	IA	IA	IA	IA	Eligibility rules can not be simulated.
Other special purpose benefits provided by municipalities	bsa	IA	IA	IA	IA	Eligibility rules can not be simulated.
Funeral benefit	bsa	IA	IA	IA	IA	No information on deceased members of household.
Housing allowances						
Housing benefit	bho_s	PS	PS	PS	PS	Specific municipality rules can not be simulated. The rules of the largest municipality (Riga) are applied.

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 micro-data 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 14. Simulation of taxes and social contributions in EUROMOD

Tax name	Output variable	Treatment in EUROMOD				Why not simulated?
		2006	2007	2008	2009	
Social Insurance Contributions						
Employees	tscee_s	S	S	S	S	Impossible to simulate special rules for persons with disability and recipients of service pension.
Employers	tscer_s	S	S	S	S	Impossible to simulate special rules for persons with disability and recipients of service pension.
Self-employed	tscse_s	PS	PS	PS	PS	Assume that self-employed pay only mandatory part of social insurance contributions.
Direct taxes						
Personal income tax	tin_s	S	S	S	S	Some exemptions and types of income are impossible to identify and simulate.
Corporate income tax	-	E	E	E	E	Out of scope of the model.
Property tax	tpr	I	I	I	I	Rules can not be simulated.
Indirect taxes						
Value added tax	-	E	E	E	E	No information available, out of scope of the model
Excise tax	-	E	E	E	E	No information available, out of scope of the model
Tax on cars and motorcycles	-	E	E	E	E	No information available, out of scope of the model

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; “I”: included in the micro-data but not simulated; “IA”: included in the micro-data in an aggregated variable but not simulated; “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 15 demonstrates policies that are simulated in 2007-2010.

Table 15. Simulated policies

Section	Policy	Description	Year			
			2007	2008	2009	2010
2.3.1	yse_lv	Recode negative self-employment income	X	X	X	X
2.3.2	yem_lv	Minimum wage (switched off in the baseline)	X	X	X	X
2.3.3	bun_lv	Unemployment benefit	X	X	X	X
2.3.4	bfana_lv	Family state benefit	X	X	X	X
2.3.5	bfaba_lv	Child birth benefit	X	X	X	X
2.3.6	bfacc_lv	Child care benefit	X	X	X	X
2.3.7	bfawk_lv	Parental benefit	-	X	X	X
2.3.8	bfama_lv	Maternity benefit	X	X	X	X
2.3.9	bfapl_lv	Paternity benefit	X	X	X	X
2.3.10	bsamm_lv	Guaranteed minimum income benefit	X	X	X	X
2.3.11	bho_lv	Housing benefit	X	X	X	X
2.3.12	pss_lv	State social security benefit (for old-age, survivors, and disabled)	X	X	X	X
2.4.1	tscee_lv	Employee social insurance contributions	X	X	X	X
2.4.2	tscer_lv	Employer social insurance contributions	X	X	X	X
2.4.3	tscse_lv	Self-employed social insurance contribution	X	X	X	X
2.5	tin_lv	Personal income tax	X	X	X	X

2.2 Order of simulation and interdependencies

- *Order of simulation in 2007*

We start by recoding negative self-employment income to zero. Then minimum wage is simulated (as an optional policy which is switched off in the baseline). After that social insurance contributions are simulated as they are deducted from income before income tax is calculated. Next non-means tested benefits are simulated. Then, we simulate income tax. Finally, means-tested benefits are simulated: first, GMI benefit (as it depends on net income after taxation); second, housing allowance (as it depends on all net including GMI and other municipal benefits).



Table 16. EUROMOD Spine: order of simulation, 2007

Policy	Description	Main output
yse_lv	Negative self-employment income recoded to zero	yse (overwrite)
yem_lv	Minimum wage (switched off in the baseline)	yem (overwrite)
tscee_lv	Employee social insurance contribution	tscee_s
tscer_lv	Employer social insurance contribution	tscer_s
tscse_lv	Self-employed social insurance contribution	tscse_s
bun_lv	Unemployment benefit	bun_s
pss_lv	State social security benefit (for old age, survivors, disabled)	poass_s, psuss_s, pdiss_s
bfana_lv	Family state benefit	bfana_s
bfapl_lv	Paternity benefit	bfapl_s
bfama_lv	Maternity benefit	bfama_s
bfaba_lv	Child birth benefit	bfaba_s
bfacc_lv	Child care benefit	bfacc_s
tin_lv	Income tax	tin_s
bsamm_lv	Guaranteed Minimum Income benefit	bsamm_s
bho_lv	Housing benefit	bho_s

- *Order of simulation in 2008*

In 2008 a new parental benefit was introduced, and it is simulated in the model. The minimum level of this benefit is linked to state social security benefit, therefore it is simulated after state social security benefit. There are no other changes in the spine.

Table 16.a. EUROMOD Spine: order of simulation, 2008

Policy	Description	Main output
yse_lv	Negative self-employment income recoded to zero	yse
yem_lv	Minimum wage (switched off in the baseline)	yem
tscee_lv	Employee social insurance contribution	tscee_s
tscer_lv	Employer social insurance contribution	tscer_s
tscse_lv	Self-employed social insurance contribution	tscse_s
bun_lv	Unemployment benefit	bun_s
pss_lv	State social security benefit (for old age, survivors, disabled)	poass_s, psuss_s, pdiss_s
bfana_lv	Family state benefit	bfana_s
bfapl_lv	Paternity benefit	bfapl_s
bfama_lv	Maternity benefit	bfama_s
bfaba_lv	Child birth benefit	bfaba_s
bfacc_lv	Child care benefit	bfacc_s
bfawk_lv	Parental benefit	bfawk_s
tin_lv	Income tax	tin_s
bsamm_lv	Guaranteed minimum income benefit	bsamm_s
bho_lv	Housing benefit	bho_s



- *Order of simulation in 2009 - 2011*

In 2009-2011 the order of simulation is the same as in 2008 because no significant structural changes have taken place.

Table 16.b. EUROMOD Spine: order of simulation, 2009-2011

Policy	Description	Main output
yse_lv	Negative self-employment income recoded to zero	yse
yem_lv	Minimum wage (switched off in the baseline)	yem
tscee_lv	Employee social insurance contribution	tscee_s
tscer_lv	Employer social insurance contribution	tscer_s
tscse_lv	Self-employed social insurance contribution	tscse_s
bun_lv	Unemployment benefit	bun_s
pss_lv	State social security benefit (for old age, survivors, disabled)	poass_s, psuss_s, pdiss_s
bfana_lv	Family state benefit	bfana_s
bfapl_lv	Paternity benefit	bfapl_s
bfama_lv	Maternity benefit	bfama_s
bfaba_lv	Child birth benefit	bfaba_s
bfacc_lv	Child care benefit	bfacc_s
bfawk_lv	Parental benefit	bfawk_s
tin_lv	Income tax	tin_s
bsamm_lv	Guaranteed minimum income benefit	bsamm_s
bho_lv	Housing benefit	bho_s

2.3 Social benefits

2.3.1 Recoding negative self-employment income to zero

The first policy which is run before simulation of social benefits is recoding of negative self-employment income into zeros. This is done in order to prevent incorrect calculation of taxes, social contributions and means-tested benefits for self-employed persons with losses in the income reference period. There are 3 individuals with negative self-employment income in the Latvian input data (based on UDB EU-SILC 2008).

2.3.2 Minimum wage

In Latvia minimum monthly wage is set every year by the Cabinet of Ministers. The minimum wage rule covers employees in all sectors. It is not differentiated between the types of employees. The level of minimum wage is 120 LVL in 2007, 160 LVL in 2008, and 180 LVL in 2009 and 2010, 200 LVL in 2011. The simulation of the minimum wage is switched off in the baseline.

2.3.3 Unemployment benefit (bun_s)

The benefit is provided to a previously employed and socially insured person in case of unemployment. The maximum duration of unemployment benefit is nine months or until a person finds a new job. The full benefit amount depends on working experience (i.e. the length



of social contribution history). The benefit amount per month gradually decreases with time in order to provide incentives to look for a new job.

- **Definitions**

The unit of analysis is an individual.

- **Eligibility conditions**

(1) First of all, a person must register as unemployed in the State Employment Agency (SEA). There is no information on registration at the SEA in the input data. We assume that all people who report unemployment are registered.

(2) Second, there are some restrictions on age. Only people above 15 years old and below official retirement age are eligible for unemployment benefits. People involved in secondary education programmes are not eligible for the benefit.

(3) Finally, a person must have paid social insurance contributions for no less than 12 months in total (liwwh). It is also checked that social contributions are paid in the period preceding unemployment. In 2007 it is sufficient if a person has nine months of social contributions in the last 12 months preceding unemployment (liwmy). Starting from 2008, the rule is changed for 12 months in the preceding 18 months. In 2010 the policy is reverted back to 9 months in the last 12 months.

EUROMOD notes

For people who are currently unemployed and receive unemployment benefits we assume that the eligibility criteria (1) and (3) are met.

For those who are currently unemployed but do not receive unemployment benefits we assume that the eligibility criteria are not met.

Finally, for calculation of replacement rates or implementation of labour market adjustments, we assess eligibility of currently employed individuals based on the number of months currently in work (liwmy). If assessment period is larger than one year (e.g. 18 months in 2008), we assume that in the previous year the number of months in work in the same as in the current year (but the total number of working months is not more than working history).

- **Income test**

The benefit is not means-tested.

- **Benefit amount**

The full amount of the benefit is a percentage of the gross average wage and it depends on working experience:

- 1) If working experience is 1 to 9 years the full benefit equals 50% of the gross average wage from which social contributions were made;
- 2) If working experience is 10 to 19 years the full benefit equals 55% of the gross average wage;
- 3) If working experience is 20 to 29 years the full benefit equals 60% of the gross average wage;
- 4) If working experience is above 30 years the full benefit equals 65% of the gross average wage.



EUROMOD notes

The gross average wage is calculated over a six months period which ends two months before the person obtains unemployment status. For those who are currently unemployed and receive unemployment benefit accurate information on the gross average wage cannot be obtained from the data. Therefore, we reverse the rules for benefit calculations, and impute the gross average wage before unemployment (yempv) based on the total amount of unemployment benefit, approximate duration of unemployment, and working history.

In 2007 the maximal duration of the benefit was nine months. The size of the benefit gradually decreased over time as shown in Table 17.

Table 17. Calculation of the unemployment benefit, effective as of June 30 2007

Period of entitlement (max duration 9 months)	Proportion of the full benefit received
1 st , 2 nd , 3 rd month	100%
4 th , 5 th , 6 th month	75%
7 th , 8 th , 9 th month	50%

In 2008 the scheme was changed. Maximum duration and the way how the benefit decreases over time were linked to working experience. A new scheme is demonstrated in Table 17.b.

Table 17.b. Calculation of the unemployment benefit, effective as of June 30 2008 and June 30 2009

Work experience	Max duration	Proportion of the full benefit received		
		100%	75%	50%
1-9 years	4 months	1 st , 2 nd month	3 rd , 4 th month	-
10-19 years	6 months	1 st , 2 nd month	3 rd , 4 th month	5 th , 6 th month
More than 20 years	9 months	1 st , 2 nd , 3 rd month	4 th , 5 th , 6 th month	7 th , 8 th , 9 th month

The scheme was changed again on July 1, 2009. The changes are modelled in EUROMOD in policy year 2010. The maximum duration of the benefit is prolonged to 9 months for all unemployed.

Table 17.c. Calculation of the unemployment benefit in 2010 (effective as of July 1, 2009)

Work experience	Max duration	Proportion of the full benefit received			
		100%	75%	50%	45 LVL
1-9 years	9 months	1 st , 2 nd month	3 rd , 4 th month	-	5 th - 9 th month
10-19 years	9 months	1 st , 2 nd month	3 rd , 4 th month	5 th , 6 th month	7 th - 9 th month
More than 20 years	9 months	1 st , 2 nd , 3 rd month	4 th , 5 th , 6 th month	7 th - 9 th month	-

Since January 1, 2010, the daily amount of the unemployment benefit was cut. In case amount of the assigned benefit per calendar day exceeds 11.51 LVL, a person is eligible for receiving 11.51 LVL daily plus 50% of the difference between 11.51 LVL and the assigned daily amount.

On January 1, 2011, the monthly amount of the benefit (for people with work experience below 20 years) was restricted:



- For people with work experience below 10 years the amount of the benefit in the 5th-6th months of unemployment is 45 LVL, but not more than 75% from the UB amount
- For people with work experience below 20 years the amount of the benefit in the 7th-9th months of unemployment is 45 LVL, but not more than 50% from the UB amount

EUROMOD notes

For identification of work experience we use variable *liwwh*. As a proxy of unemployment duration we use *lummy*.

2.3.4 Family state benefit (bfana_s)

The benefit is a lump sum granted to one of the parents of a dependent child.

- ***Definitions***

The unit of analysis is a family with a dependent child.

The child is considered to be dependent if

- a) a child is below 15 years old ($dag < 15$);
- b) a child is below 20 years old ($dag < 20$) and continues secondary/professional education, is not married, and does not receive any education related stipends

Since July 1, 2009, the definition of dependent child has been slightly changed. The new definition is applied in the model since 2010.

The child is considered to be dependent if

- a) a child is between 1-15 years old ($dag \geq 1 \ \& \ dag < 15$);
- b) a child is between 1-19 years old ($dag \geq 1 \ \& \ dag < 19$) and continues secondary/professional education, is not married, and does not receive any education related stipends.

- ***Eligibility conditions***

The benefit is assigned to one of the parents of a dependent child in a family. Usually a mother applies for the benefit. In the model we assign the benefit to the mother. If there is no mother, then a father is eligible.

- ***Income test***

The benefit is not means-tested.

- ***Benefit amount***

In 2007 the standard amount of the benefit (for the first child) is 8 LVL per month. The amount of the benefit for the second child equals the standard amount multiplied by the coefficient of 1.2. For the third child the coefficient is 1.6, and for each next - 1.8.

Since July 1, 2009, the standard amount of 8 LVL is paid for every child (i.e. the coefficients are abolished).



2.3.5 Child birth benefit (bfaba_s)

The benefit is a lump sum granted to one of the parents of a new born child.

- *Definitions*

The unit of analysis is a family with a new born child.

- *Eligibility conditions*

The benefit is granted to one of the parents of a child. In the model the benefit is assigned to the head of the household. A parent can apply for the benefit starting from the child's eighth day of life.

- *Income test*

The benefit is not means-tested.

- *Benefit amount*

The amount of the benefit for a newly born child is 296 LVL. In addition for the first child there is a supplementary payment of 100 LVL, for the 2nd child - 150 LVL, and for the 3rd and each next - 200 LVL.

In 2010 supplementary payments for a newly born child were abolished. The changes are applied to children born after April 4, 2010.

EUROMOD notes

Order of birth might be determined incorrectly if one of children lives separately from the family.

2.3.6 Child care benefit (bfacc_s)

The benefit is provided on a monthly basis to one of a child's parents during the first two years of a child's life.

In 2007 the benefit covered all parents: socially insured or not. Starting from 2008, the child care benefit for socially insured parents (for the first year of a child's life) was substituted by the parental benefit (see next section).

- *Definitions*

The unit of analysis is a family with a child of 1 year old or less.

- *Eligibility conditions*

One of a child's parents is eligible for the benefit (usually mother). In the model the benefit is assigned to the mother, if there is no mother, then to the father. The benefit is paid for the first two years of a child's life. If a person receives maternity benefit, then child care benefit is paid starting from the day when maternity benefit expires.

- *Income test*

The benefit is not means-tested.



- **Benefit amount**

The amount of the benefit in the first and in the second year of a child's life is different. The amount also depends on whether a parent is socially insured or not.

A. For socially insured parents during the 1st year of a child's life:

For employees: the benefit equals 70% of a gross average wage calculated over a twelve months period which ends three months before a child's birth.

For self-employed: the benefit equals 70% of an average amount from which social contributions have been paid. The average is calculated over a twelve months period which ends three months before a quarter when a child is born.

If a person's income is a mixture of employment and self-employment income, then a weighted average is taken. The total sum of the income from which the benefit is calculated should not exceed the maximum object for obligatory social insurance contributions.

The benefit is paid starting from the day when maternity benefit has expired.

The benefit (in all of the above cases) should not be less than 56 LVL, and not more than 392 LVL per month.

EUROMOD notes

We assume that a person is not socially insured if she or he has no employment history (liwwh=0)

The actual employment income observed in the income reference period might not be a good proxy for income prior to child's birth. It is highly likely that income shortly before the birth or during the child care leave is much lower than usually (if positive at all). We created a new variable (yivwg01) containing imputed previous year wage for mothers and fathers prior to a child's birth. For mothers we obtain imputed wage by estimating a wage equation for women in a child-bearing age (between 16 and 45 years old), non-students, with positive employment income but no self-employment or pension income. We exclude mothers of newborn children from the estimation, and predict wages for them based on the wage equation. However, we set imputed wage to zero for self-employed mothers and mothers with no working history. We assume that mothers with no working history are not socially insured (and therefore receive no benefit). For self-employed mothers we use a different procedure described below. For fathers we use current wages. Both mothers' and fathers' imputed wages are adjusted for inflation.²

For self-employed parents a similar adjustment is not possible. Therefore, the benefit calculation is based on average monthly amount of social insurance contributions paid by self-employed mothers (see Table 18).

Table 18. Average monthly amount of social insurance contributions paid by self-employed mothers (approximation, LVL), 2007 - 2010

Year	2007	2008	2009	2010
Average monthly SIC	232	264	423	384

Note: No data on 2011 is available. In the model we assume that the value remained the same as in 2010.

² In simulations we assume that social insurance contributions are paid from the whole wage amount, i.e. there is no tax evasion. We apply ceiling for obligatory social insurance contributions to the imputed wages. Although it is quite high, it is binding for several individuals in the input data.



Source: Own calculations based on statistics on maternity benefits received by self-employed mothers provided by State Social Insurance Agency.

B. For socially uninsured parents during the 1st year of a child's life:

The amount of the benefit is 50 LVL per month. The benefit is paid from the first month of a child's life (because mother is not eligible for maternity benefit if not socially insured).

C. For all parents during the 2nd year of a child's life:

The amount of the benefit is 30 LVL per month.

Since 2008 the benefit for socially insured parents during the 1st year of a child's life (A) was substituted by the parental benefit (see next section). All other rules (B and C) stayed as in 2007

2.3.7 Parental benefit (bfawk_s)

The benefit is introduced in 2008, and substitutes child care benefit for socially insured parents during the 1st year of child's life.

- *Definitions*

The unit of analysis is a family with a newborn child.

- *Eligibility conditions*

A socially insured parent is eligible for the benefit during the first year of a child's life. Only one of parents can receive the benefit. We assume that a parent with a higher (previous) wage applies for the benefit.

This assumption is changed in the policy year 2010. Since 2010 we assume that a mother applies for the benefit. Since 2010 parents working during parental leave are not eligible for the benefit. Therefore, it becomes common that a parent staying at home with a child applies for the benefit (usually it is mother).

- *Income test*

The benefit is not means-tested.

- *Benefit amount*

For employees: the benefit equals 70% of a gross average wage calculated over a twelve months period which ends three months before a child's birth.

For self-employed: the benefit equals 70% of an average amount from which social contributions have been paid. The average is calculated over a twelve months period which ends three months before a quarter when a child is born.

If a person's income is a mixture of employment and self-employment income, then a weighted average is taken. The total sum of the income from which the benefit is calculated should not exceed the maximal object for obligatory social insurance contributions.

The amount of the benefit should not be less than 70% of a double amount of State social security benefit, i.e. 63 LVL.



The benefit is paid only for those months when a parent does not receive maternity or child care benefit.

Since July 1, 2009, and till May 2, 2010, a parent who continues working during parental leave (i.e. receives employment or self-employment income) is eligible only for 50% of the benefit. Since May 3, 2010, such parent is not eligible for the benefit at all.

In EUROMOD we do not include intermediate stage that took place from July 2009 to May 2010. In the policy year 2010 we model full abolishment of parental benefit for working parents.

For children born after November 3, 2010, the daily amount of the parental benefit was cut. In case amount of the assigned benefit per calendar day exceeds 11.51 LVL, a parent is eligible for receiving 11.51 LVL daily plus 50% of the difference between 11.51 LVL and the assigned daily amount. The rule is modeled in the policy year 2011.

EUROMOD notes

Simulations are based on imputed wages for mothers and fathers prior to a child's birth. For self-employed parents simulations are based on average monthly amount of social insurance contributions paid by self-employed mothers. See Section 2.3.6 for more details.

2.3.8 Maternity benefit (bfama_s)

The benefit is paid in two installments. The first part is a pregnancy benefit which is given for the last 70 days of pregnancy (56 days if a mother registered pregnancy later than after 12 weeks). The second part is a maternity benefit which is generally given for a period of 56 days after a child's birth. In case two or more children were born or if a mother has health problems related to a child's birth, then 70 days after birth are covered by the benefit.

- ***Definitions***

The unit of analysis is a family with a newborn child.

- ***Eligibility conditions***

A mother is eligible for the benefit in case she has registered the pregnancy and is socially insured. In case of mother's death a father (or a person who actually cares about a baby) is eligible for the second part of maternity benefit.

- ***Income test***

The benefit is not means-tested.

- ***Benefit amount***

For employees: the benefit equals 100% of a gross average wage calculated over a six months period which ends two months before a person is entitled to the benefit.

For self-employed: the benefit equals 100% of an average amount from which social contributions have been paid. The average is calculated over a twelve months period which ends three months before a person is entitled to the benefit.

If a person's income is a mixture of employment and self-employment income, then a weighted average is taken. The total sum of the income from which the benefit is calculated should not exceed the maximal object for obligatory social insurance contributions.



For children born after November 3, 2010, the benefit equals 80% of the relevant average income. In addition the daily amount of the parental benefit is cut. In case amount of the assigned benefit per calendar day exceeds 11.51 LVL, a parent is eligible for receiving 11.51 LVL daily plus 50% of the difference between 11.51 LVL and the assigned daily amount. The rule is modeled in the policy year 2011.

EUROMOD notes

Since there is no information on registration of pregnancy or health status of a mother, we assume benefit duration of 70+56 days (i.e. 126 days in total). If more than one child is born, then benefit duration is assumed to be 70+70 days (140 in total).

A person is considered to be socially ensured for maternity if she has a positive working history.

We can identify recipients of maternity benefit by selecting households which have children below one year old. However, we cannot identify all recipients of pregnancy benefit, because we do not observe children if they have not yet been born.

Simulations are based on imputed wages for mothers prior to a child's birth. For self-employed mothers simulations are based on average monthly amount of social insurance contributions. See Section 2.3.6 for more details.

2.3.9 Paternity benefit (bfapl_s)

The benefit is paid to a child's father during 10 days of a paternity leave.

- ***Definitions***

The unit of analysis is a family with a newborn child.

- ***Eligibility conditions***

A father of a newborn child is eligible for the benefit in case he is socially insured. The benefit can be claimed during the first two months of a child's life.

- ***Income test***

The benefit is not means-tested.

- ***Benefit amount***

For employees: the benefit equals 80% of a gross average wage calculated over a six months period which ends two months before a person is entitled to the benefit.

For self-employed: the benefit equals 80% of an average amount from which social contributions have been paid. The average is calculated over a twelve months period which ends three months before a person is entitled to the benefit.

If a person's income is a mixture of employment and self-employment income, then a weighted average is taken. The total sum of the income from which the benefit is calculated should not exceed the maximal object for obligatory social insurance contributions.

The duration of a paternity benefit is 10 days.

From 2009, the benefit is increased to 100% of a gross average wage.



From November 3, 2010, the benefit is decreased again to 80% of the relevant average income. In addition the daily amount of the parental benefit is cut. In case amount of the assigned benefit per calendar day exceeds 11.51 LVL, a parent is eligible for receiving 11.51 LVL daily plus 50% of the difference between 11.51 LVL and the assigned daily amount. The rule is modeled in the policy year 2011.

EUROMOD notes

We assume that a father is socially ensured for paternity leave if he is employed (or self-employed) for at least 6 months ($liwmy \geq 6$), and has a positive employment or self-employment income ($yem > 0$ or $yse > 0$). We identify eligible fathers by selecting the households with children below 1 year old, and check if a child has a father.

Simulations are based on imputed wages for fathers prior to the child's birth. For self-employed fathers simulations are based on average monthly amount of social insurance contributions. See Section 2.3.6 for more details.

2.3.10 Guaranteed minimum income benefit (bsamm_s)

The benefit is provided to households with low income to ensure primary needs and survival.

- ***Definitions***

The unit of analysis is a household or a separately living person with low income level per household member.

- ***Eligibility conditions***

In order to be eligible for GMI benefit a separately living person or a household have to be classified as 'being in need'. This implies that income per family member must not exceed 50% of the minimum wage. A person must have no deposits or other financial assets, private property from which it can get income. A person must not have given any loans to anybody or have loan commitment itself (*we can identify income from property rent or land (ypr) and also interest payments (xhcmomi)*).

Since 2010 the condition about not having or giving loans was abolished.

Since 2011 income per family member must not exceed 90 LVL per month (which is a bit lower than previously used 50% of the minimum wage).

The eligibility for the benefit is reassessed every three months. Since this is not possible in EUROMOD, the assessment is made on annual basis.

- ***Income test***

The benefit is means-tested. A person or a household can receive the benefit if net income per household member is below the GMI level. All net income excluding income from municipal social benefits and the first 50 LVL of the child care benefit (bfacc_s) is tested in 2007.

Since 2009 state family benefit, child care benefit, child birth benefit, and funeral benefit are not included in the means-test. The deduction of the first 50 LVL of child care benefit is substituted by the deduction of the first 100 LVL of parental benefit (bfawk_s).

In 2010 state family benefit is included in the income test again. And only the the first 50 LVL of the parental benefit are not tested.



- **Benefit amount**

A) Standard rules

The benefit amount is calculated as the difference between the GMI level and all relevant net income.

In case the household consists of several individuals the following formula applies:

$P = \text{GMI} \times n - I$, where n is the number of household members and I is monthly net income calculated as an average for three months of a given household.

The standard level of GMI is set by the Cabinet of Ministers, but municipalities have the right to set a higher level. The standard level of GMI is presented in the table below:

Table 19. Standard GMI level in 2007- 2011, LVL per month

	2007	2008	2009	2010	2011
Standard GMI level per person	27	27	37	40	40

The maximum amount of the GMI benefit per one family per month equals to the state social security benefit multiplied by a factor of 3 (i.e.135 LVL). The maximum length of receiving the benefit is 9 months.

Since October 2009 (policy year 2010) the maximum limit on the amount of the benefit was abolished. A higher level of GMI was granted to all children below 18 years old: 45 LVL per month. Municipalities were free to set higher levels for disability or old-age pensioners.

B) Rules of Riga municipality

We cannot account for all municipality differences in the model, because there is no detailed information on people's residence in the input dataset. Besides, variation in the rules of each municipality would make implementation really difficult. However, we try to model the rules of Riga municipality separately (as they are more generous).

Riga municipality sets a higher GMI levels for certain population groups (see Table 20). In case a person belongs to several categories the highest GMI level is applied (but GMI levels cannot be added up).



Table 20. GMI levels for certain population groups in Riga municipality (LVL per month)

Target group	Definition	Amount (LVL)		Definition	Amount (LVL)
	2007-2009	2007	2008-2009	2010-2011	2010-2011
Children	Children below 18 or children below 20 years old who continue secondary or professional education:	45	48	Children below 18 years old	45
Parents	One of the parents	45	48	-	-
Pensioners	Disability (id variables: pdiss_s, pditx)	45	90	Disability (id variables: pdiss_s, pditx)	90
	Old-age (id variables: poass_s, poatx + conditions on pension age)	45	90	Recipients of old-age pensions: (id variables: poass_s, poatx)	90

In addition since 2010 families with children (where all children are below 18 years old) are eligible for a supplement to GMI. The supplement is 50 LVL per month for every child who is between 1.5 and 6 years old ($dag \geq 1.5$ & $dag \leq 6$).

EUROMOD notes

To receive the GMI benefit a person has also to be a resident of Latvia at the moment of applying for the benefit and declare his/her address in a certain municipality. However we are not able to obtain the residence information from the data available.

One of the components of sickness benefits (bhl) is health service benefit provided by municipality. It should not be included in the income test. However, it is not possible to separate this component from the aggregate benefit. This should not create big distortions in the income test, because health service benefit provided by municipality is a rather small benefit.

Funeral benefit is an important component of social exclusion benefits (bsa), and is means-tested in 2007 and 2008. However, it cannot be separated from other social exclusion benefits which are not means tested (including the GMI benefit itself). In the EU-SILC data funeral benefit is reported quite accurately (because it is a state benefit, and information is taken from the registry data). Other components of the social exclusion benefits (municipal benefits) are highly underreported, because the data comes from the survey. So it can be claimed that the largest part of the aggregated variable “bsa” in fact is funeral benefits. Therefore, we include “bsa” in the income list for the means-test in 2007 and 2008.

We model only two regimes of GMI benefit: regime of Riga municipality and a standard regime. Rules of Riga apply to the people living in Riga and the standard regime applies to all other territory of Latvia. We use a proxy variable drgur00 for regional division. Residents of Riga municipality are randomly assigned among the residents of large cities (in accordance with population statistics). The data doesn't offer a more precise method for identifying the place of residence.

There is a special rule for persons who receive GMI benefit, and during this period find paid employment. These persons are allowed to receive a certain part of GMI benefit for three months after finding paid employment (even if they do not meet the benefit eligibility rules any



more). However, it is impossible to identify such persons in the microdata, so we cannot simulate this rule.

2.3.11 Housing benefit (bho_s)

The benefit is provided to families with low income to support their primary needs for living space. Each municipality can determine own rules on eligibility and amount of this benefit.

- *Definitions*

The unit of analysis is a household or a separately living individual.

- *Eligibility conditions*

In order to be eligible for household allowance a separately living person or a household has to be classified as a 'low-income household'. In addition a person must have no deposits or other financial assets, private property from which it can get income. A person must not have given any loans to anybody or have loan commitment itself

In 2007 in order to have a status of a low-income household income per household member must not exceed 150 LVL per month (or must not exceed 200 LVL for a separately living person).

Since 2008: the income per household member must not exceed 200 LVL per month (or must not exceed 250 LVL for a separately living person)

Since 2010 the condition about not having or giving loans was abolished.

The eligibility for the benefit is reassessed every three months. This is not possible to simulate in EUROMOD, so the assessment is made on an annual basis.

- *Income test*

The benefit is means-tested. The income test is the same as in case of the GMI benefit. The only difference is that the GMI benefit itself (bsamm_s) is also taken into account.

- *Benefit amount*

The benefit is calculated according to the following formula:

$$P = GMI + K - I$$

Where K are normative expenses for rent and utilities and I is a total net monthly income (including an average amount of GMI benefit for the last three months).

Each municipality has its own rules for determining normative housing expenses (K). In many cases normative housing expenses will not cover all the housing expenses that households have. To determine normative housing expenses we use a proxy variable xhc, which shows actual housing expenses. However, since actual expenses in some cases are quite high we introduce an upper bound. It is equal to average housing expenditure calculated based on Household Budget Survey data separately in urban and rural areas and in households of different size (see Table 21).



Table 21. Average household housing expenditure by number of persons in the household (LVL per month), 2007 - 2010

Year	All households	URBAN Households per number of household members				RURAL Households per number of household members			
		1	2	3	>3	1	2	3	>3
2007	16.4	34.5	21.6	18.0	13.3	20.3	12.2	12.5	7.9
2008	22.0	46.0	28.4	22.4	18.3	29.0	20.2	15.5	10.9
2009	25.2	50.7	33.7	26.1	19.1	34.8	21.6	16.4	14.8
2010	24.6	48.7	32.4	26.0	19.1	30.4	22.2	18.0	11.8

Note: The numbers show total expenditure on housing, water, electricity, gas, and other fuels (excluding expenditure on maintenance and repair of the dwelling). The data for 2011 is not available. In the model we assume that the values in 2011 are equal to those in 2010.

Source: Central Statistical Bureau of Latvia, Household Budget Surveys.

EUROMOD notes

Since rules of municipalities differ, and we have no detailed information on the residence of people, we model only rules applied by the largest municipality of Latvia: Riga municipality. We apply these rules to all population of Latvia. Since the rules of Riga municipality are more generous than elsewhere, the simulated benefit is likely to be overestimated.

To receive housing allowance a person has to reside and declare his/her address in a certain municipality at least one year before applying for the benefit, however we are not able to check this information from the data available.

2.3.12 State social security benefit (poass_s, psuss_s, pdiss_s)

The benefit is aimed to ensure minimum income for old-age people who are not eligible for old-age pension, dependent children of a deceased person in case they are not entitled to the survivor's pension, and disabled people who do not have right for a disability pension.

- *Definitions*

The unit of analysis is an individual.

- *Eligibility conditions*

A. Old age

In case of old age, a person is eligible for the benefit if his or her age exceeds pension age by more than five years, and if the person is not eligible for old-age pension (i.e. working experience is less than 10 years). Also a person should not receive any compensation related to the accident at work or occupational disease (including compensation for the death of a spouse).

In order to be eligible for the benefit a person has to reside in Latvia at least 5 years of his/her life and last 12 months in a row before receiving the benefit. However, we are not able to check this information from the data available.

EUROMOD notes

Since eligibility conditions cannot be simulated accurately enough, the eligibility is taken from the data. The problem probably arises because many old-age pensioners receive foreign state pensions (predominantly from Russia), which are not recorded in the data.



B. Survivors

Children of age below 18 or below 24 if they continue secondary, professional or higher full-time education and are not married are eligible for the state social security benefit in case they are not eligible for survivor's pension. The benefit amount is the same independently whether there are one or two dependent children.

EUROMOD notes

From the structure of a household we cannot identify the cases when a breadwinner was lost. And we do not have information on whether a breadwinner was socially insured or not (therefore we don't know if children are eligible for survivor's pension or state social security benefit). So we take eligibility for the benefit from the data.

C. Disabled

A person has to be classified as disabled but should not receive disability pension or compensation related to the accident at work or occupational disease (including compensation for the death of a spouse).

In order to be eligible for the benefit a person has to reside in Latvia for at least five years and for the last 12 months in a row before receiving the benefit. However we are not able to check this information from the data.

EUROMOD notes

Since it is not possible to simulate eligibility criteria, eligibility is assigned from the data.

- ***Income test***

The benefit is not means-tested.

- ***Benefit amount***

The benefit amount equals 45 LVL monthly for old-age people and for survivors. In case of disability the benefit is 45 LVL in a general case, and 50 LVL for people disabled from childhood. Since 2009 the benefit for those disabled from childhood is raised to 75 LVL per month.

2.4 Social contributions

Social contributions are mandatory for all employees and self-employed persons. The contribution rate is flat and in case of private/public employment it is split between an employee and an employer.

Total contribution rate may vary, depending on the insured person's employment status, age and disability status: e.g., in general, employees are insured against all insurance cases, but employees above the retirement age are not insured against unemployment and disability.

2.4.1 Employee social contributions (tscee_s)

A person below the retirement age (*id variable - dag*), who is employed in public/private sector in 2007-2010 faced a social security contributions rate of 9% of gross wage, but as of 2011 the rate was increased to 11%. After the person reaches the pension age, he/she is not insured against the risk of unemployment and disability and his/her wage becomes subject to a lower contributions rate. An employee receiving service pension or persons with the 3rd degree of



disability are not insured against unemployment. Table 22 summarizes the rates of social security contributions faced by employees in 2007 – 2011 and the distribution of the rate across different insurance cases. In 2007-2008, there was a maximum income from which an employee could make social security contributions (see Table 23).

- ***EUROMOD notes***

It is impossible to simulate special social insurance rules for persons with disability and recipients of service pension, because there is no information on disability level and service pensions.

2.4.2 Employer social contributions (tscer_s)

An employer in a public/private sector pays social security contributions on behalf of an employee below the pension age) in the amount of 24.09% of the gross wage. The rate is lower if the insured employee has reached the retirement age, receives a service pension or is qualified as disabled of the 3rd degree (see Table 22). Like employees, in 2007-2008 employers faced a maximum constraint on the income from which contributions can be made (see Table 23).

- ***EUROMOD notes***

It is impossible to simulate special social insurance rules for persons with disability and recipients of service pension, because there is no information on disability level and service pensions.



Table 22. Social security contributions rate faced by employee and employer, effective on June 30, 2007-2011

	30/06/2007	30/06/2008	30/06/2009	30/06/2010	30/06/2011
Employee under the retirement age: Total rate/Employee rate/Employer rate, %	33.09/9.00/24.09	33.09/9.00/24.09	33.09/9.00/24.09	33.09/9.00/24.09	35.09/11.00/24.09
<i>of which:</i>					
Pension social insurance	24.49	23.65	22.86	21.66	25.56
Unemployment social insurance	1.80	1.75	1.70	3.81	2.56
Insurance against work accidents and occupational diseases	0.25	0.24	0.26	0.29	0.31
Disability social insurance	2.55	2.92	2.95	3.18	3.02
Maternity and sickness social insurance	4.00	3.45	3.47	2.47	2.27
Parents' social insurance	-	1.08	1.85	1.68	1.37
Employee above the retirement age: Total rate/Employee rate/Employer rate, %	27.59/7.50/20.09	28.26/7.69/20.57	28.3/7.70/20.60	25.94/7.06/18.88	29.36/9.20/20.16
<i>of which:</i>					
Pension social insurance	24.49	23.65	22.86	21.66	25.56
Insurance against work accidents and occupational diseases	0.25	0.24	0.26	0.29	0.31
Maternity and sickness social insurance	2.85	3.29	3.33	2.31	2.12
Parents' social insurance	-	1.08	1.85	1.68	1.37
Employee receiving service pension or qualified as disabled of 3rd degree: Total rate/Employee rate/Employer rate, %	30.14/8.20/21.94	30.61/8.33/22.28	30.68/8.34/22.34	28.41/7.73/20.68	31.78/9.96/21.82
<i>of which:</i>					
Pension social insurance	24.49	23.65	22.86	21.66	25.56
Insurance against work accidents and occupational diseases	0.25	0.24	0.26	0.29	0.31
Disability social insurance	2.55	2.35	2.38	2.47	2.42
Maternity and sickness social insurance	2.85	3.29	3.33	2.31	2.12
Parents' social insurance	-	1.08	1.85	1.68	1.37

Source: LatvijasVēstnesis (2012)

Table 23. Income ceiling for employees and employers for obligatory social contributions in 2007-2011, LVL per year

2007	2008	2009	2010	2011
23,800	29,600	-	-	-

Source: LatvijasVēstnesis (2012)

2.4.3 Self-employed social contributions (tscse_s)

A self-employed person below the retirement age has to make obligatory social security contributions against all insurance cases except unemployment, work accidents and occupational diseases, thus, a self-employed person faces a lower contributions rate than the



total rate borne by an employee and an employer. After a self-employed person reaches the retirement age, he or she is also not insured against the risk of disability (see Table 24).

Table 24. Social security contributions rate faced by self-employed, effective on June 30, 2007-2011

	30/06/2007	30/06/2008	30/06/2009	30/06/2010	30/06/2011
Self-employed under the retirement age: Total rate, %	29.95	30.44	30.48	28.17	31.52
<i>of which:</i>					
Pension social insurance	24.49	23.65	22.86	21.66	25.56
Disability social insurance	2.55	2.35	2.38	2.47	2.42
Maternity and sickness social insurance	2.91	3.36	3.39	2.36	2.17
Parents' social insurance	-	1.08	1.85	1.68	1.37
Self-employed above the retirement age: Total rate, %	27.04	28.02	28.04	25.65	29.05
<i>of which:</i>					
Pension social insurance	24.49	23.65	22.86	21.66	25.56
Maternity and sickness social insurance	2.55	3.29	3.33	2.31	2.12
Parents' social insurance	-	1.08	1.85	1.68	1.37

Source: LatvijasVēstnesis (2012)

A self-employed person can choose the level of income from which to make social security contributions within the interval stipulated by the Cabinet of Ministers' regulations. In 2007-2008, the lower boundary of the interval was set so that the expected pension of a self-employed person is not lower than the minimum amount of the old-age pension stipulated by the law "On State Pensions". As of 2009, the minimum boundary has been linked to the minimum monthly wage. The upper boundary was the same as the one faced by employees and employers and it was also abolished as of 2009 (see Table 25).

Table 25. Income interval for obligatory social contributions faced by self-employed in 2007-2011, LVL per year

	2007	2008	2009	2010	2011
Minimum	1,800	1,800	2,160	2,160	2,400
Maximum	23,800	29,600	-	-	-

Source: LatvijasVēstnesis (2012)

- **EUROMOD notes**

Since a self-employed person can pay social insurance contribution from any amount of income in a given range we will apply the following procedure for calculation of the contributions (in 2007):

- If annual income of a self-employed person is 1,800 LVL or more, we assume that he/she makes contributions from 1,800 (only the mandatory part), this being the most common practice observed in Latvia.
- If annual income of a self-employed person is below 1,800 LVL (150 LVL monthly), the person doesn't make any social contributions.

A similar procedure with different thresholds is adopted in other policy years.



2.5 Personal income tax (tin_s)

2.5.1 Tax unit

Taxation in Latvia is on the individual level. However, for tax allowance purposes an extended family unit is defined. It includes a partner, dependent children and dependent parents.

2.5.2 Exemptions

The following income is exempted from taxation and can be identified in the data:

- Income from deposits from Latvian/the EU financial institutions (up to 2009). As of 2010, income from deposits is subject to personal income tax;
- compensation for the loss of capacity to work or the loss of breadwinner due to the occupational diseases/injury (pdint);

2.5.3 Tax allowances

The following tax allowances are simulated in EUROMOD:

- Non-taxable minimum income allowance

There is a standard non-taxable income allowance which is applied to employees or self-employed persons who do not receive old-age or disability pensions. Persons who receive pensions are eligible for a higher non-taxable minimum income allowance.

- Allowance for a dependent child, spouse or parent

For tax allowance purposes a child, spouse or parent can be considered dependent only if they do not work, do not receive unemployment benefit (or unemployment stipend), old-age or disability pension, do not receive taxable income above the allowance amount, and are not dependent on other person. In addition a child is considered dependent if it is below 18 years old or below 24 years old and continues secondary, professional, special or higher education. Tax allowance for a dependent child is assigned to one of the parents (the one with the highest taxable income).

- Social insurance contribution by employees and self-employed.

If a person is dependent she or he is not eligible for non-taxable minimum allowance. The income of dependents is declared in the income declaration of a person responsible for them (i.e. the person who receives tax allowance for these dependents)

The following tax allowances are not simulated in EUROMOD because of lack of information:

- for a grandchild or a child taken for raising
- for siblings until the age of 18, if they don't have parents capable of working;
- for a person benefiting from alimony;
- for a person under guardianship or trusteeship of the payer.
- for politically repressed persons
- additional allowances for disabled persons (?)

Table 26 summarizes the size of tax allowances that are applicable in the cases listed above:



Table 26. Personal income tax allowances (LVL per month), effective on June 30, 2007-2011

Allowances	2007	2008	2009	2010	2011
Standard non-taxable minimum income	50	80	90	35	45
Non-taxable minimum for pensioners	165	165	165	165	165
Allowance for a dependant	35	56	63	63	70
Additional allowance for the disabled of 1 st and 2 nd degree ^a	60	96	108	108	108
Additional allowance for the disabled of 3 rd degree ^a	47	75	84	84	84
Additional allowance for a politically repressed person (receiving pension) ^a	60	96	108	108	108
Additional allowance for a politically repressed person (not receiving pension) ^a	110	176	108	108	108

Notes: ^a Not simulated in the model.

Source: Latvijas Vēstnesis (2012)

2.5.4 Tax base

Income from the following sources is included in the taxable income:

- income from employment including wage premiums, systematic or one time compensations and other work-related income (yem and yot);
- income from individual work or enterprise if it is not subject to enterprise tax (yse);
- income from renting private property (ypr);
- pensions (poatx, pditx, psutx);
- taxable benefits (sickness benefit – bhl)
- since 2010 also dividends and interests (yiy)

The tax base is defined as the taxable income minus tax allowances and deductible expenditures (see section 2.5.6).

In the years when different tax rates are applied to different taxable income components we assume that tax allowances are first subtracted from the income with the highest tax schedule.

Note: Income from property is taxed in the same way as self-employment income. Sickness benefit and pensions are taxed similar to employment income.

2.5.5 Tax schedule

In 2007-2008 employment income (except self-employment income) was taxed at a flat rate of 25%. In 2009 the regular rate was reduced to 23%, but in 2010 the reduction was reversed and the rate was raised to 26%. In 2011 the regular rate was reduced to 25%.

In 2007 self-employment income was taxed at the same rate as employment income. However, in the period from 2008 to 2009 a lower rate of 15% was applied. Since 2010, self-employment income is taxed at a regular rate.

As of 2010, a tax on income from capital was introduced. Income from capital is subject to personal income tax and is taxed at a reduced rate of 15% (capital increase) or 10% (other income from capital)

All tax schedules are demonstrated in Table 27.



Table 27. Personal income tax rate (%), 2007-2011

Income source	2007	2008	2009	2010	2011
Regular rate	25	25	23	26	25
Income from capital:					
<i>capital increase</i>	-	-	-	15	15
<i>other income from capital</i>	-	-	-	10	10
Income from self-employment	25	15	15	26	25

Source: LatvijasVēstnesis (2012)

2.5.6 Deductible expenditure

Before calculating his/her tax obligations, a resident taxpayer is authorized to reduce his/her taxable income by the amount of the following expenditures:

- expenditures on education, health services and health insurance premiums (there is a maximum level of expenditures that can be deducted, being stipulated in the Cabinet of Ministers' regulations);
- gifts and donations to foundations and religious organisations registered in Latvia;
- expenditures on creation, publication, performance or other utilisation of works of arts, science or inventions, for which the authors receive royalty fees;
- contributions to private pension funds;
- life insurance premiums.

Deductible expenditure is not possible to simulate in EUROMOD because of lack of data on expenditure in the input dataset.

2.5.7 Special taxation rules for pensioners

There are some special rules of taxation which are applied to pensioners.

- For non-working pensioners:
Non-taxable minimum allowance is applicable to pensions.
- For working pensioners:
In 2007-2008: Non-taxable minimum is applicable only to pensions.
Employment income is taxed from the first Lat.
From 2009: Non-taxable minimum is applicable to the whole income (pension + other taxable income).
- For those who retired before 1996:
In 2007-2008: The whole amount of pension is non-taxable.
From 2009: If a pension is lower than non-taxable minimum, then the minimum is applied first to pension, then to other non-employment income.
If a pension is higher than the non-taxable minimum, the pension is fully exempted from taxation, however other non-employment income is taxed from the first Lat.

Note: These people can be identified by age and working experience. Minimum retirement age in 1996 was 56 for women and 61 for men. Minimum work experience: ten years.



3. DATA

3.1 General description

The Latvian database represents the Latvian part of the European Union Statistics on Income and Living Conditions (EU-SILC). The Latvian EU-SILC survey is an annual survey with a four-year rotational panel. The 2008 year survey took place in April - August of the year following the income reference year (i.e. 2007). The units of assessment are private households, excluding collective households, e.g., old people's homes, hotels, etc. Individuals aged 16 years and older were included in the survey. The database is provided by Eurostat.

The information contained in this section is based on Final Quality Report Relating to EU-SILC Operations 2005-2008 (Central Statistical Bureau of Latvia, 2010) and Intermediate Quality Report EU-SILC 2008 Operation in Latvia, by Central Statistical Bureau of Latvia (Central Statistical Bureau of Latvia, 2009).

Table 28. EUROMOD database description

EUROMOD database	LV_2008_a1
Original name	Kopienas statistika par ienākumiem un dzīves apstākļiem (EU-SILC) 2008
Provider	Eurostat
Year of collection	2008
Period of collection	April - August 2008
Income reference period	2007
Sampling	Stratified two-stage sampling
Unit of assessment	HH ^[1]
Coverage	Private households ^[2]
Sample size	6 897 households 7 042 individuals
Response rate	75.3%

Notes:[1] If more than one household was found to be residing in one address in urban area, all individuals and households that are living in one address were included in the survey in urban areas. In rural areas, only households formed by the people included in the household list (a document containing necessary information for tracing members of the household), were surveyed at a given address.
[2] Collective private households, such as old people's homes, student dormitories, hotels, etc., were not included in the survey.

Latvian EU-SILC survey was carried out using stratified two-stage sampling. Stratification was based on degree of area urbanisation: the four strata were represented by (1) the capital city Riga, (2) six largest towns, (3) other urban areas and (4) rural areas. Primary selection units at the first stage were represented by counting areas from the Population Census, selection being made by systematic sampling and inclusion probabilities being proportional to the number of households in the units. At the second stage, addresses were used as selection units and simple random sampling was used. The target sample size was set taking into account the non-response rates from previous year surveys (2005, 2006 and 2007 year surveys). Also, since response rates differ across strata, the initial sample size in each stratum was adjusted by the respective response rate.

Latvian survey employs rotational panel with four sub-samples, where each sub-sample represents the whole population. Every year one sub-sample is dropped from the sample and a new group is added. The 2008 survey interviews were conducted using the CAPI system (same



as in 2007), and CATI (for the first time in 2008). Only households that were participating in the EU-SILC survey for the second, third or fourth time and had specified phone numbers in the previous waves, were used for CATI. Not all, but the majority of households with phone numbers were used for CATI. It was possible for a household to refuse from CATI, and then CAPI was used. However, in cases when interviews couldn't be conducted using phones or laptops (7.2% of personal interviews), paper questionnaires still were used. In order to increase the response rates, several activities were undertaken to introduce the EU-SILC survey beforehand. For example, articles describing EU-SILC were published in several newspapers and informative letters were sent to selected candidates.

Three types of questionnaires were developed for carrying out the survey: (i) Household register, which was intended for collecting demographic information on all members of households; (ii) Household Questionnaire, aimed at collecting household-related information, such as costs of the dwelling, income received at the household level, etc; and (iii) Personal Questionnaire, which was developed for collecting information on individual household members above age 16, including information on current or previous employment status, income from employment, etc. Additionally, a special document - Household List was developed with the aim of collecting information on all members of the household necessary for locating all members of the household or linking the data with administrative sources.

3.2 Sample quality and weights

3.2.1 Non-response

A total of 7 010 households were included in the initial sample, of which 446 (6.4%) could not be contacted due to inability to locate or access the address (0.2% and 3.0%, respectively), or due to the fact that address does not exist or is non-residential address or is unoccupied or not principal residence (3.2%). Since there was no substitution made for the households that couldn't be contacted, the initial sample size amounted to 6,560 households.

Of 6,560 contacted households, interviews were completed with 5,205 households, of which 5,196 interviews were included in the database. Two major reasons for interviews not being completed were absence of the entire household during the interviewing process (37.2%) and refusal to cooperate (50.0%). Overall non-response rate amounted to 24.7%, of which for the 1st wave households – 37.6%.

3.2.2 Weights

The EU-SILC dataset provides the final cross-sectional survey weights (variable DB090). They are calculated based on the design weights (equal to inverse of inclusion probabilities of addresses), adjusted for non-response, and calibrated using the basic demographic statistics for the corresponding year's population (age, gender, degree of urbanization, and 6 regions of Latvia).

Latvian EU-SILC sample statistics has been projected to a reference population of 2,239,012 individuals in 845,794 households. Table 29 presents more basic descriptive statistics for the grossing-up individual weight RB050.



Table 29. Descriptive Statistics of the Grossing-up weight

Number	13,120
Mean	170.656
Median	151.205
Maximum	2,089.512
Minimum	13.578
Max/Min	153.895
Decile 1	57.723
Decile 9	297.053
Dec 9 / Dec1	5.146

3.2.3 Item non-response and under-reporting

According to CSB's data, which is based on enterprises' administrative reports, average net monthly wages of employees in 2007 amounted to 286 LVL (in 2006 – 216 LVL, in 2005 – 176 LVL, in 2004 – 150 LVL). In the EU-SILC the average monthly employee cash or near cash income (PY010) amounted to 375 LVL (in 2006 – 260 LVL, in 2005 – 214 LVL, in 2004 – 169 LVL) (CSB, 2010), suggesting that the EU-SILC data on employees' income exceeds the official enterprise data on wages by approximately 31% in 2007 (by 20% in 2006, by 22% in 2005, by 13% in 2004). One reason for the overestimation is the fact that in the EU-SILC statistics all income received by an employed person is included in one variable, whereas in the CSB statistics employees' income is calculated per unit of employment; e.g., income of a person who has more than one job will be counted in one variable in the EU-SILC, whereas in CSB wage statistics the person's income from different jobs will be counted separately (CSB, 2010). Another reason for the overestimation is the fact that enterprises report only wages from which taxes are paid, thus the data does not account for wages from informal employment (CSB, 2010).

3.3 Data adjustment

Missing values of income components were imputed, using Hot Deck method. Before performing the imputation, households were grouped according to characteristics of their dwelling as well as individuals were grouped by sex, family and social status.

EU-SILC data on benefits and pensions (both gross and net) was substituted with administrative data on pensions and benefits from the State Social Insurance Agency (SSIA). The SSIA's administrative data contains information on all major benefits and does not cover only minor benefits administered by municipalities (e.g., housing allowances) and pensions paid by other countries.

3.4 Imputations and assumptions

3.4.1 Time period

Socio-demographic characteristics of the respondents contained in EU-SILC 2008 refer to the time of data collection, i.e., April – August 2008. Most economic and labour variables also refer to the time of the interview, however, the database also contains some information referring to the income reference period (2007), e.g., employment status of the respondent in each month of 2007. Whenever possible, the corresponding demographic, labour and socio-economic information in the EUROMOD database was based on the EU-SILC variables referring to the



income reference period. The EU-SILC UDB does not provide information on the number of periods a particular income was paid to a respondent. In some cases the number of periods was derived from non-monetary variables, e.g., the number of periods a respondent receives income from employment is based on the number of months spent at full-time or at part-time work, the number of months a respondent receives unemployment benefit is based on the number of months spent in unemployment.

3.4.2 Gross incomes

Like in 2007 year (referring to 2006 year income) database, net employee cash or near cash income (PY010N) in 2008 was collected from the questionnaire, but gross employee cash or near cash income (PY010G) was imputed by counting up PY010N from EU-SILC and paid income taxes and social security contributions, obtained from State Revenue Service (SRS) data. Only in cases when information on net income was missing in the database or in cases where net income of a respondent obtained in the survey was lower than suggested by the SRS data, the survey data was substituted by information from the SRS.

3.4.3 Other imputed variables

Some information important for simulations was not available in the EU-SILC UDB dataset, therefore it was imputed. The following key variables were fully imputed:

- Detailed degree of urbanization: residents of Riga were randomly selected among the residents of the main big cities of Latvia in accordance with the population statistics.
- Previous employment income for people who receive unemployment benefits was imputed using the amount of unemployment benefit, approximate benefit duration, and the benefit calculation rules.
- State social security benefit (for old-age, survivors or disabled): recipients were identified based on the amount of the aggregate (old-age, survivors or disability) benefit.
- Taxable part of disability benefit (disability pension) was obtained by comparing net and gross values of the aggregate disability benefits. The number of recipient was adjusted in accordance with the national statistics.
- Old-age pension, survivors' pension, and non-taxable part of disability benefit were calculated as residual components of aggregate variables.
- Taxable and non-taxable part of investment income (profits from capital shares in an enterprise and dividends, interests on money deposits) were imputed comparing net and gross values of investment income.
- Parents' wages prior to a child's birth were imputed. For women we obtain imputed wage by estimating a wage equation for women in a child-bearing age. For men we assume that previous wage is equal to current wage. Both parents' imputed wages are adjusted for inflation.

3.5 Updating

Table 30 below shows the updating factors that are used in the database to update the monetary variables from 2007 to 2011.



Table 30. Updating factors (base year 2007)

<i>Index</i>	<i>Income Source/index type</i>	2008	2009	2010	2011
<i>afc</i>	ASSETS : Financial Capital	1.152	1.190	1.176	1.225
<i>bed</i>	BENEFIT/PENSION : Education	1.152	1.190	1.176	1.225
<i>bfa</i>	BENEFIT/PENSION : Family	1.006	0.934	0.857	0.854
<i>bhl</i>	BENEFIT/PENSION : Health	1.353	1.744	1.385	1.084
<i>bho</i>	BENEFIT/PENSION : Housing	1.247	1.071	0.923	0.974
<i>bsa</i>	BENEFIT/PENSION : Social Assistance	1.243	1.388	1.347	1.343
<i>bun</i>	BENEFIT/PENSION : Unemployment	1.369	1.603	1.106	0.967
<i>kfb</i>	IN KIND : Fringe benefit	1.152	1.190	1.176	1.225
<i>kivho</i>	IN KIND : Imputed value : Housing	1.247	1.071	0.923	0.974
<i>pdi</i>	BENEFIT/PENSION : Disability	1.198	1.482	1.481	1.472
<i>pdint</i>	BENEFIT/PENSION: Pension - Disability (Invalidity) - non-taxable part	1.214	1.506	1.709	1.862
<i>pdiss01</i>	BENEFIT/PENSION: Pension - Disability (Invalidity) - State Social Security Benefit - for disabled from childhood	1.000	1.500	1.500	1.500
<i>pdiss02</i>	BENEFIT/PENSION: Pension - Disability (Invalidity) - State Social Security Benefit - for other disabled	1.000	1.000	1.000	1.000
<i>pditx</i>	BENEFIT/PENSION: Pension - Disability (Invalidity) - Taxable part	1.235	1.501	1.473	1.447
<i>poa</i>	BENEFIT/PENSION : Old Age	1.281	1.595	1.633	1.654
<i>poass</i>	BENEFIT/PENSION: Pension - Old age - State Social Security Benefit	1.000	1.000	1.000	1.000
<i>poatx</i>	BENEFIT/PENSION : Old Age - Taxable part	1.281	1.596	1.635	1.656
<i>psu</i>	BENEFIT/PENSION : Survivors	1.155	1.265	1.243	1.220
<i>psuss</i>	BENEFIT/PENSION: Pension - Survivors - State Social Security Benefit	1.000	1.000	1.000	1.000
<i>psutx</i>	BENEFIT/PENSION : Disability - Taxable part	1.161	1.275	1.251	1.228
<i>tad</i>	TAX : Repayments/Receipts	1.204	1.158	1.118	1.178
<i>tis</i>	TAX: Income Tax and SIC	1.204	1.158	1.118	1.178
<i>tpr</i>	TAX : Property tax	0.951	0.980	1.203	1.478
<i>xhc</i>	EXPENDITURE : Housing cost	1.247	1.071	0.923	0.974
<i>xhcmomi</i>	EXPENDITURE : Housing cost : Mortgage Payment (interest+capital) : Mortgage Interest	1.247	1.071	0.923	0.974
<i>xhcot</i>	EXPENDITURE : Housing cost : Other	1.247	1.071	0.923	0.974
<i>xhcrt</i>	EXPENDITURE : Housing cost : Rent	1.247	1.071	0.923	0.974
<i>xmp</i>	EXPENDITURE : Maintenance Payment	1.152	1.190	1.176	1.225
<i>xpp</i>	EXPENDITURE : Private Pension (voluntary)	1.152	1.190	1.176	1.225
<i>yds</i>	INCOME : Disposable	1.103	0.919	0.843	0.888
<i>yem</i>	INCOME : Employment	1.204	1.158	1.118	1.178
<i>yempv</i>	INCOME: Income from previous employment	1.318	1.586	1.526	1.474
<i>yivwg</i>	INCOME : Imputed value : Wage/Salary	1.204	1.158	1.118	1.178
<i>yivwg01</i>	INCOME: Imputed value: Wage/Salary for mothers of new born children (monthly)	1.318	1.586	1.526	1.474
<i>yyi</i>	INCOME : Investment	1.152	1.190	1.176	1.225
<i>yyint</i>	INCOME: Non-taxable investment income	1.152	1.190	1.176	1.225
<i>yyitx</i>	INCOME: Taxable investment income	1.152	1.190	1.176	1.225
<i>yot</i>	INCOME : other	1.152	1.190	1.176	1.225
<i>ypp</i>	INCOME : Private Pension	1.152	1.190	1.176	1.225
<i>ypr</i>	INCOME : Property	1.247	1.071	0.923	0.974
<i>yprrt</i>	INCOME : Property : Rent	1.247	1.071	0.923	0.974
<i>ypt</i>	INCOME : Private Transfers	1.152	1.190	1.176	1.225
<i>yse</i>	INCOME : Self Employment	1.204	1.158	1.118	1.178

Source: Eurostat, Central Statistical Bureau of Latvia, State Social Security Agency, State Treasury, State Land Service, own calculations.



4. VALIDATION

4.1 Aggregate Validation

4.1.1 Non simulated incomes

Latvia is a country with a high proportion of employment in the shadow sector. Informal employment may take a form of unregistered employment/self-employment or registered employment with tax evasion (e.g. a part of wage is paid informally and is not subject to taxes and social contributions).

The 2008 EU-SILC data partly covers employment in the shadow sector. Table 31 shows the number of employed and unemployed in the EUROMOD input data and in the external statistics. External statistics numbers are based on the Labour Force Survey. EUROMOD dataset contains more employed and unemployed people than the official statistics in 2007. In particular, the number of employees in the EUROMOD dataset is 13-25% higher than in the Labour Force Survey (the extent of overrepresentation depends on how we compute aggregate number of employed in the input data, see notes to Table 31). Number of self-employed persons is underestimated, which probably result from people wrongly classifying themselves as employees. Such a big discrepancy between the number of employees in the input data and in external statistics leads to over-simulation of income tax and social insurance contributions.

Latvian EUROMOD input data is not adjusted for the changes in the labour market characteristics of individuals which occurred over the period 2007 – 2011. During the crisis unemployment more than doubled and employment dropped by more than 15%. Results of EUROMOD simulations for 2008-2011 should be viewed with caution, keeping in mind that they are based on the population as of 2007.

Table 31. EUROMOD validation: number of employed and unemployed, 2007–2011 (thousands)

Number	EUROMOD 2007 (A) average	External Statistics					EUROMOD (A) / External Statistics				
		2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
<i>Employed</i>	1160	1118	1125	983	941	971	1.037	1.031	1.180	1.233	1.195
<i>Employees</i>	1126	998	1011	871	833	860	1.129	1.114	1.293	1.351	1.309
<i>Self-employed</i>	73	103	99	98	95	100	0.712	0.735	0.746	0.771	0.732
<i>Unemployed</i>	110	70	90	202	215	176	1.559	1.215	0.542	0.510	0.623
	(B) total						EUROMOD (B) / External Statistics				
<i>Employed</i>	1279						1.144	1.138	1.301	1.360	1.318
<i>Employees</i>	1243						1.246	1.230	1.427	1.492	1.445
<i>Self-employed</i>	77						0.750	0.775	0.787	0.813	0.772
<i>Unemployed</i>	191						2.718	2.118	0.945	0.888	1.086

Notes: Two approaches are used to estimate the number of employed and unemployed in EUROMOD: (A) Average number is computed based on the number of months in employment/unemployment; (B) Total number is calculated as a stock of all persons employed/unemployed during the reference year regardless number of months in employment/unemployment. Employment status is based on information on source of income in the reference period.

Source: External statistics is based on the Labour Force Surveys (EUROSTAT).



Average gross wages in the EUROMOD input dataset are by 11-12% higher than the official wages reported in the enterprise reports (see Table 34). One reason for the overestimation is the fact that in the EU-SILC statistics all income received by an employed person is included in one variable, whereas in the official statistics employees' income is calculated per unit of employment. Another and probably more important reason is informal wages or “envelope wages”. Enterprises report only wages from which taxes are paid, thus the external statistics does not account for wages from informal employment.

Table 32. EUROMOD validation: average gross monthly wages, 2007–2011 (LVL)

Average gross wage	2007	2008	2009	2010	2011
EUROMOD	441	530	510	493	519
External Statistics	398	479	461	445	464
EUROMOD / External statistics	1.108	1.106	1.106	1.108	1.119

Notes: Average gross wage in EUROMOD is estimated taken into account number of months a person is in work. This definition is likely to correspond better to external statistics based on enterprise reports.

Source: External statistics is based on the enterprise reports (Central Statistical Bureau of Latvia).

In the baseline year aggregate employment income in the EUROMOD input dataset corresponds very well to the external statistics from the national accounts (see Table 33). National accounts estimate of wages and salaries includes some correction for the shadow economy. Starting from 2009 employment income is significantly overrepresented, because no labour market adjustments are made in the input data.

Table 33. EUROMOD validation: aggregate employment income, 2007–2011 (LVL, millions)

Aggregate employment income	2007	2008	2009	2010	2011
EUROMOD	5,923	7,128	6,860	6,622	6,975
External Statistics	5,918	7,067	5,185	4,648	4,964
EUROMOD / External statistics	1.001	1.009	1.323	1.425	1.405

Source: External statistics is based on the national accounts (Eurostat).

In the EU-SILC information on state benefits comes from the administrative records (State Social Insurance Agency), while information on municipality benefits is based on the survey. Therefore, most state benefits included in the EUROMOD data correspond quite well to external statistics, while municipality benefits (main components of social exclusion benefits) are slightly underreported (see Table 34 and Table 35).

The main discrepancies are:

Number of recipients and aggregate expenditure on survivor's pensions in the EUROMOD dataset are slightly lower than in the external statistics, because survivor's pensions paid to the elderly and children are not included in this category in the EU-SILC.

Compensation for the loss of work capacity is overestimated. However, this is a minor benefit, which is imputed in the data as a residual component after splitting disability benefits.

Number of recipients and expenditure on sickness benefits is higher in EUROMOD than in the external statistics, because external statistics does not include recipients of health related benefits provided by municipalities.



Family and children related benefits are overrepresented in the EUROMOD data. One of the reasons for this is a relatively high number of children (especially small children) in the EU-SILC data as compared to external statistics³. The other reason is big changes in the composition of the population (due to high emigration) which are not accounted for in the EU-SILC 2008. Latest Latvian Census for 2011 showed that the population of Latvia is significantly smaller than it was expected to be. For example, the number of children below 20 years old in 2011 is 5% less than it was expected⁴. External statistics on family benefits show a lot of variation in the number of recipients and total expenditure over years. This is explained by important changes in the eligibility rules and amounts, as well as decrease in the number of newly born babies. Aggregate non-simulated variable for family benefits does not account for these changes.

Social exclusion benefits include municipality benefits (such as GMI benefit, benefit paid in extraordinary situations, and other special purpose benefits) and funeral benefit paid by the state. Municipality benefits tend to be underrepresented in the data, because they are collected directly from respondents during the survey. Therefore aggregate social exclusion benefits are underestimated.

³ According to the calculations of the authors, the number of children one year old or less in the EUROMOD dataset is 18% more than in the official statistics.

⁴ Based on population statistics of the Central Statistical Bureau of Latvia and own calculations.



Table 34. EUROMOD validation: benefits included but not simulated, number of recipients, 2007 – 2011 (thousands)

	EUROMOD					External statistics					Ratio (EUROMOD/External)				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Old-age pensions	451	451	451	451	451	474	470	472	477	490	0.95	0.96	0.96	0.95	0.92
Survivor's pensions	20	20	20	20	20	23	24	24	23	22	0.89	0.86	0.86	0.88	0.92
Disability pensions	66	66	66	66	66	66	66	67	69	69	1.00	1.00	0.99	0.96	0.96
Compensation for the loss of work capacity	10	10	10	10	10	5	5	7	7	7	2.09	1.78	1.47	1.39	1.40
Sickness Benefits ^a	194	194	194	194	194	154	149	150	141	146	1.26	1.31	1.29	1.38	1.33
Family and children related benefits ^b	309	309	309	309	309	267	265	259	247	229	1.16	1.16	1.19	1.25	1.35
Social exclusion benefits ^c	162	162	162	162	162	187	178	170	-	-	0.87	0.91	0.96	-	-

Notes on external statistics: ^a Recipients of health related benefits provided by municipalities are not included. ^b Approximation based on the number of recipients of State family benefit which is likely to cover most children eligible for other family benefits. ^c Social exclusion benefits included funeral benefit paid by the State and several municipality benefits: GMI benefit, benefit paid in extraordinary situations, and other special purpose benefits. Total number of recipients of social exclusion benefits is calculated as a sum of recipients of the components.

Sources: External statistics on state benefits is based on the data from the State Social Insurance Agency. External statistics on municipality benefits is based on the Reports on social services and social assistance published by the Ministry of Welfare of Latvia.



Table 35. EUROMOD validation: benefits included but not simulated, aggregate expenditure, 2007 – 2011 (LVL, millions)

	EUROMOD					External statistics					Ratio (EUROMOD/External)				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Old-age pensions	620	794	990	1,014	1,027	635	807	1,008	1,044	1,089	0.98	0.98	0.98	0.97	0.94
Survivor's pensions	15	18	20	19	19	21	25	28	27	25	0.74	0.71	0.71	0.72	0.76
Disability pensions	68	84	102	100	98	67	83	102	102	102	1.01	1.01	1.00	0.97	0.97
Compensation for the loss of work capacity	10	12	15	17	19	5	7	10	12	13	2.13	1.81	1.50	1.42	1.43
Sickness Benefits ^a	56	76	98	78	61	47	67	95	67	53	1.19	1.13	1.03	1.15	1.14
Family and children related benefits ^b	167	168	156	143	143	123	169	184	148	106	1.36	1.00	0.85	0.97	1.35
Social exclusion benefits ^c	17	21	23	22	22	17	22	24	-	-	0.97	0.94	0.96	-	-

Notes on external statistics: ^a Expenditure on health related benefits provided by municipalities is not included. ^b External statistics on family benefits does not include some relatively uncommon benefits (e.g. for disabled child or for child adoption. ^c Social exclusion benefits included funeral benefit paid by the State and several municipality benefits: GMI benefit, benefit paid in extraordinary situations, and other special purpose benefits. Total aggregate expenditure is calculated as a sum of the components.

Sources: External statistics on state benefits is based on the data from the State Social Insurance Agency. External statistics on municipality benefits is based on the Reports on social services and social assistance published by the Ministry of Welfare of Latvia.



4.1.2 Simulated taxes and benefits

Table 36 and Table 37 provide comparison of the benefits and taxes simulated in the model to external statistics.

In 2007 (and to a lower extent in 2008) unemployment benefit is simulated quite accurately. However, in 2009-2010 the model significantly underestimates the number of recipients of unemployment benefit as well as aggregate expenditure. The opposite is observed in 2011. The model does not capture significant changes in the labour market characteristics of individuals that occurred in Latvia over 2009-2011⁵. In 2009-2010 many people became unemployed and therefore eligible for unemployment benefits. However, in 2011 unemployment rate dropped, as well as many unemployed exhausted their unemployment benefits. External statistics shows that the peak of unemployment benefits is in 2009.

State social security benefits are underestimated in the model, because the simulation of eligibility rules is based on eligibility from the data (and the number of eligible persons in the data is smaller than in external statistics).

All family benefits simulated in the model are oversimulated. As mentioned in the previous section, this is partly related to the composition of the sample (relatively high number of children as compared to external statistics); and distortions between survey data and registry data (due to lack of information on emigration). Paternity benefit is oversimulated to a larger extent than other benefits because full take-up is assumed. Another reason for oversimulation of contributory family benefits (such as maternity, paternity benefit, child care benefit in 2007, and parental benefit in 2008-2011,) is assumption of zero tax evasion. The model assumes that all parents with non-zero working history are socially insured and eligible for contributory family benefits. Over 2009-2011 accuracy of simulation of parental, maternity and paternity benefits deteriorates, because EUROMOD input data is not adjusted for demographic changes (e.g., the number of newly born babies).

Municipality benefits (GMI benefit and housing benefit) are oversimulated by the model. First of all, the number of recipients is overestimated because it is likely that not all incomes are correctly declared in the data. Second, full take-up is assumed, while in reality some eligible persons do not apply for the benefits because benefits are rather small. Third, the eligibility rules and amounts of the benefits differ by municipality, and we cannot reproduce all municipality specific rules in the model⁶. In case of GMI benefit we apply Riga rules to randomly selected individuals and standard rules to the rest of the population. In case of housing benefit we use Riga rules for all citizens of Latvia. This is likely to result in less precision and overestimation of the benefit amounts.

The number of tax payers and people who pay social insurance contributions is overestimated in the model because (1) the data is likely to include a part of people employed in the shadow economy, (2) the data contains more employed people than external statistic (e.g. Labour Force Survey). Tax revenues are overestimated for the same reasons. The model especially poorly simulates social contributions of self-employed. However, this is a very small group of people. It is also likely that tax evasion is more spread among self-employed (because it is more difficult to control their income flows).

⁵ Labour market adjustments are included in EUROMOD for Latvia as a part of separate exercise. More information about it is available from the authors upon request.

⁶ Besides, we do not have precise information on the place of residence in the data.



Table 36. EUROMOD validation: taxes and benefits simulated, number of recipients/ payers, 2007 – 2011 (thousands)

	EUROMOD Simulation					External statistics					Ratio (EUROMOD/External)				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Unemployment benefit	96	96	96	96	96	88	103	164	132	83	1.09	0.94	0.59	0.73	1.17
State social security benefit	12	12	12	12	12	15	15	15	16	16	0.84	0.82	0.80	0.78	0.75
- in case of old age	0.9	0.9	0.9	0.9	0.9	1.0	0.9	0.8	0.7	0.6	0.89	0.98	1.08	1.19	1.37
- in case of a loss of a breadwinner	0.6	0.6	0.6	0.6	0.6	0.9	0.9	0.8	0.7	0.6	0.68	0.71	0.80	0.87	0.98
- in case of disability	11	11	11	11	11	13	13	14	14	15	0.84	0.82	0.79	0.75	0.72
Family state benefit	300	300	300	272	272	267	265	259	247	229	1.13	1.13	1.16	1.10	1.19
Child birth benefit	26	26	26	26	26	22	24	23	20	19	1.15	1.06	1.11	1.28	1.37
Child care benefit	50	26	26	26	26	40	29	29	29	27	1.23	0.90	0.89	0.89	0.95
Parental benefit	-	24	24	18	18	-	17	17	13	10	-	1.43	1.43	1.40	1.83
Maternity benefit	23	23	23	23	23	19	20	17	15	14	1.16	1.15	1.31	1.55	1.61
Paternity benefit	20	20	20	20	20	8	10	9	7	7	2.47	2.05	2.33	2.81	2.84
GMI benefit ^a	32	24	47	61	58	26	26	60	116	-	1.24	0.94	0.78	0.53	-
Housing benefit ^a	57	61	78	98	93	44	55	68	106	-	1.29	1.11	1.15	0.92	-
Personal income tax ^b	1209	1192	1175	1265	1270	-	-	-	-	-	-	-	-	-	-
Employee SIC	1243	1243	1243	1243	1243	938	934	796	736	753	1.33	1.33	1.56	1.69	1.65
Employer SIC	1243	1243	1243	1243	1243	938	934	796	736	753	1.33	1.33	1.56	1.69	1.65
Self-employed SIC	50	53	48	47	46	29	31	21	15	13	1.72	1.71	2.28	3.27	3.39

Notes on external statistics: ^a Number of individual recipients. Include only benefits paid in cash. In 2010 figures are approximate. Figures for 2011 are not available.

^b External statistics is not available.

Sources: External statistics on state benefits is based on the data from the State Social Insurance Agency. External statistics on municipality benefits (GMI and Housing benefit) is based on the Reports on social services and social assistance published by the Ministry of Welfare of Latvia.



Table 37. EUROMOD validation: taxes and benefits simulated, expenditure/ revenue, 2007 – 2011 (LVL, millions)

	EUROMOD Simulation					External statistics					Ratio (EUROMOD/External)				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Unemployment benefit	46	54	65	62	60	43	56	137	89	43	1.07	0.96	0.48	0.70	1.39
State social security benefit	7	7	10	10	10	8	9	12	12	13	0.85	0.84	0.85	0.82	0.79
- in case of old age	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.94	0.94	1.07	1.21	1.37
- in case of a loss of a breadwinner	0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.4	0.4	0.3	0.67	0.69	0.77	0.85	0.97
- in case of disability	6	6	9	9	9	8	8	11	11	12	0.84	0.81	0.84	0.82	0.77
Family state benefit	46	46	46	37	37	44	44	39	34	32	1.04	1.05	1.17	1.09	1.18
Child birth benefit	11	11	11	8	8	10	10	10	7	6	1.18	1.08	1.13	1.12	1.40
Child care benefit	65	10	10	10	10	43	11	12	12	11	1.52	0.84	0.83	0.83	0.86
Parental benefit	-	112	136	39	35	-	68	87	67	40	-	1.64	1.56	0.58	0.89
Maternity benefit	32	42	51	49	34	25	34	34	26	16	1.26	1.26	1.49	1.85	2.05
Paternity benefit	2.6	3.3	5.0	5.3	3.0	1.1	1.7	2.0	1.5	0.9	2.40	2.00	2.52	3.52	3.50
GMI benefit ^a	3.8	3.7	7.2	9.9	9.6	1.6	1.9	6.2	17.7	-	2.30	1.92	1.16	0.56	-
Housing benefit ^a	5.8	8.7	11.1	12.8	12.4	2.4	4.5	5.2	6.9	-	2.42	1.95	2.15	1.86	-
Personal income tax	1,221	1,374	1,182	1,481	1,431	904	1,025	710	785	792	1.35	1.34	1.66	1.89	1.81
Employee SIC	521	629	613	590	761	348	359	301	290	383	1.50	1.75	2.04	2.04	1.99
Employer SIC	1,394	1,683	1,641	1,578	1,667	930	962	806	775	839	1.50	1.75	2.04	2.04	1.99
Self-employed SIC	24	25	28	25	30	8	9	8	7	7	2.80	2.94	3.49	3.86	4.11

Notes on external statistics: ^a Include only benefits paid in cash. Figures for 2011 are not available.

Sources: External statistics on state benefits is based on the data from the State Social Insurance Agency. External statistics on municipality benefits (GMI and Housing benefit) is based on the Reports on social services and social assistance published by the Ministry of Welfare of Latvia.



4.2 Income distribution

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

4.2.1 Income inequality

Table 38 compares income distribution generated by the EUROMOD with external statistics from Eurostat. The mean and the median income are slightly underestimated in the model. The income quintile ratio is also slightly lower than in the external statistics. The GINI coefficient is quite close to the external data. In 2009-2010 the model overestimates mean and median incomes because decrease in the number of employed during the crisis is not taken into account.

4.2.2 Poverty

Table 39 shows the poverty rates calculated by the model and compares them to external statistics from the Eurostat. The model slightly underestimates poverty rates. However, in the baseline for the cut-off points of 60% and 70% the estimates are very close to the external figures. The poverty rates for children below 18 and population 25-49 are slightly overestimated in 2007. One of the reasons might be oversimulation of family benefits. The precision of the simulation deteriorates over years. The model is especially poor in predicting significant decrease in the poverty rate of the elderly⁷.

⁷ Labour market adjustments help to account for this by bringing down incomes of working age population (at the same time keeping pensions stable). Results of modelling with Labour market adjustments are available upon request.



Table 38. EUROMOD validation: income inequality, 2007 - 2010

	EUROMOD Simulation				External statistics				Ratio			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Mean income (equivalised)												
total	5,448	6,745	6,950	6,301	5,942	6,625	5,517	5,133	0.92	1.02	1.26	1.23
males	5,662	7,005	7,196	6,503	6,202	6,862	5,586	5,237	0.91	1.02	1.29	1.24
females	5,266	6,524	6,741	6,129	5,721	6,423	5,459	5,045	0.92	1.02	1.23	1.21
Median income (equivalised)												
total	4,444	5,465	5,654	5,173	4,832	5,474	4,537	4,194	0.92	1.00	1.25	1.23
males	4,614	5,690	5,841	5,303	5,055	5,731	4,642	4,296	0.91	0.99	1.26	1.23
females	4,260	5,281	5,498	5,062	4,670	5,291	4,451	4,093	0.91	1.00	1.24	1.24
Income quintile ratio (S80/S20)	6.8	6.8	6.2	5.8	7.3	7.3	6.9	6.6	0.94	0.93	0.90	0.88
Gini Coefficient	37.0	36.9	35.6	34.4	37.7	37.4	36.1	35.2	0.98	0.99	0.99	0.98

Note: External statistics for 2011 is not available,

Sources: External statistics is based on EUROSTAT (EU-SILC),



Table 39. EUROMOD validation: poverty rates by gender and age, 2007 – 2010

	EUROMOD Simulation				External statistics				Ratio			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
40% median HDI												
Total	9.5	8.7	7.2	6.8	10.7	11.0	9.2	9.1	0.89	0.79	0.78	0.75
Males	8.4	8.4	7.5	7.1	9.2	11.4	10.5	10.1	0.91	0.74	0.71	0.70
Females	10.5	9.0	7.1	6.6	12.0	10.6	8.0	8.2	0.88	0.85	0.89	0.80
50% median HDI												
Total	17.1	16.1	13.9	12.6	18.6	18.5	14.8	13.5	0.92	0.87	0.94	0.93
Males	15.0	14.1	12.9	12.5	16.3	17.2	16.3	14.7	0.92	0.82	0.79	0.85
Females	18.9	17.8	14.7	12.6	20.5	19.5	13.5	12.5	0.92	0.91	1.09	1.01
60% median HDI												
Total	25.3	24.5	21.4	20.1	25.6	25.7	21.3	19.3	0.99	0.95	1.00	1.04
Males	23.0	22.0	19.1	18.2	23.1	24.2	21.7	20.0	1.00	0.91	0.88	0.91
Females	27.3	26.5	23.4	21.7	27.7	27.0	21.0	18.7	0.99	0.98	1.11	1.16
70% median HDI												
Total	31.5	30.7	29.3	28.1	31.7	32.0	29.3	27.0	0.99	0.96	1.00	1.04
Males	29.1	28.3	26.8	26.0	29.3	30.2	28.4	26.8	0.99	0.94	0.94	0.97
Females	33.6	32.7	31.4	29.9	33.8	33.5	30.0	27.1	0.99	0.98	1.05	1.10
60% median HDI												
0-17 years	25.2	24.6	24.5	24.4	24.6	25.7	26.6	24.8	1.02	0.96	0.92	0.98
18-24 years	15.9	15.4	15.6	16.4	17.1	19.2	21.2	22.4	0.93	0.80	0.74	0.73
25-49 years	18.7	17.9	17.3	17.3	17.7	19.2	19.9	19.2	1.06	0.93	0.87	0.90
50-64 years	24.6	24.1	22.2	21.3	25.1	23.3	21.1	21.0	0.98	1.03	1.05	1.01
65+ years	47.9	45.8	30.3	22.4	51.2	47.5	18.8	9.5	0.94	0.96	1.61	2.36

Note: External statistics for 2011 is not available,

Sources: External statistics is based on EUROSTAT (EU-SILC)



4.3 Summary of “health warnings”

This section summarizes particular aspects of the Latvian part of EUROMOD or its database that should be borne in mind when planning appropriate uses of the model and in interpreting results.

- The EUROMOD input data is not adjusted for any demographic or labour market changes taking place in the period from 2007 to 2011 (except for updating of monetary incomes).
- Tax evasion, undeclared work and wages in envelopes are widely spread in Latvia. However, the model does not account for it. This results in overestimation of simulated taxes and social insurance contributions as well as may distort simulation of contributory family benefits based on parents' wages.
- Full take up of benefits is assumed. This assumption in particular affect the precision of the simulation of the following benefits: GMI benefit, housing benefit, paternity benefit.
- Simulation of contributory family benefits is based on assumptions about parents' wages prior to a child's birth.
- Income test for GMI and housing benefit cannot be simulated precisely because some benefits (which must be included) in the income test cannot be separated from aggregate variables. We believe that this should not create big distortions in the income test, nevertheless a user of the model should be aware of this.
- Simulating municipality benefits (GMI benefit and housing benefit) we cannot reproduce all the rules of Latvia's municipalities because they are quite complicated and the data does not provide detailed regional information. Therefore we model only rules applied by the largest municipality of Latvia, Riga municipality (and in case of GMI we also model a standard GMI regime). In case of GMI benefit we apply Riga rules to randomly selected individuals, but in case of housing benefit we use Riga rules for all citizens of Latvia. Since the rules of Riga municipality are more generous than elsewhere, this is likely to result in less precision and overestimation of the benefit amounts

5. REFERENCES

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- *Sources for tax-benefit descriptions/rules*

On-line legislation (mainly in Latvian):

<http://www.likumi.lv>