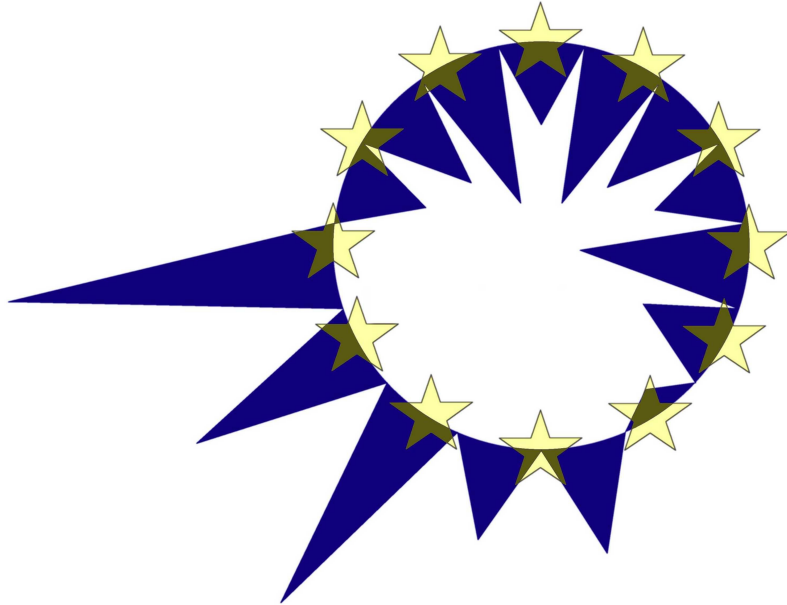


EUROMOD

COUNTRY REPORT



EUROMOD Country Report

LUXEMBOURG

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1. THE NATIONAL TAX BENEFIT SYSTEM

1.1 An overview

Next to, or, usually, instead of earned income (wages, profits, property income ...) persons in Luxembourg may be entitled to earnings-replacing benefits, such as unemployment, maternity-cash, sickness-cash, invalidity, old-age, survivor, employment injuries and occupational diseases benefits. *These benefits are not simulated in EUROMOD.*

The family allowances, birth grants, special allowances for handicapped children, the allowance of the beginning of school, the education allowance and the maternity allowance compose the family benefits. *All these allowances are simulated in EUROMOD.*

Next to the earnings-replacing benefits and the family benefits, social assistance benefits are granted to ensure a decent standard of living to the population and to protect individuals against poverty. These social assistance benefits could be coupled with rent subsidies. *These are also simulated in EUROMOD.*

A special allowance for very heavy handicapped persons could be granted for seriously handicapped persons, who even after an appropriate medical treatment, training or other education measures and in spite of special equipment are not able to live without the assistance or permanent care of others. *These are also simulated in EUROMOD.*

Depending on the parent's or the student's taxable income, on the amount of the fees, on the number of dependent children, on the number of children at university, students receive student loans. *These are not simulated in EUROMOD.*

To partially finance these different benefits, taxes and social insurance contributions have to be paid. While sickness, invalidity, old-age, survivors benefits are financed by contributions plus State subsidy, a special tax finances unemployment benefits and the State finances maternity benefits. Contributions, taxes and State subsidy finance family allowances and State and other diverse financial resources finance social assistance benefits, special allowances for very heavy handicapped persons.

Employees and employers pay sickness (health insurance contribution) insurance contributions at an equal rate. The contribution rates differ depending on the occupation: white-collar workers, blue-collar workers, civil servants, pensioners, unemployed, persons receiving the social assistance benefits, self-employed. *These contributions are simulated in EUROMOD.*

Old-age, survivors, invalidity (pension insurance contribution) insurance contributions are paid at an equal rate by employees, employers and State (8 % for each of them: 24 % in total). Salaries, self-employed and unemployed people pay pensions insurance contributions. *While employee and employer pension contributions are simulated in EUROMOD, state contributions are not simulated.*

Accident insurance contributions are completely paid by the employer. *These are simulated in EUROMOD.*

Unemployment benefits is financed by taxation. The employment fund is financed by solidarity taxes from individuals (2,5 % of the tax on income) and legal persons and by a general annual contribution from the State. *The solidarity taxes from individuals are simulated.*

Family benefits contributions are paid by the State. The only ones who still pay these contributions are the self-employed (non-farmers). *These are simulated in EUROMOD.*

Taxable income is calculated taking into account the following gross incomes: business profits, income from farming and forestry, income from independent professions, income

from dependent professions, pension income, income from capital, rental income, miscellaneous income. The different social contributions and other tax deductions are deducted from the gross income to calculate the taxable income. Some taxable incomes are exempted of tax. Taxpayers are divided into three classes depending on marital status and age. Income Tax is determined on the basis of a progressive rate, ranging from 6 % on taxable income in excess of 270 000 LUF up to 46 % on taxable income in excess of 2 640 000 LUF (18 income tax schedule). A tax credit of 48 000 LUF/year is accorded for dependent children. The number of dependent children multiplies this tax credit. An additional 2,5% of the tax payable is added as a contribution to the unemployment fund. *Most of the deductions and exemption could be simulated in EUROMOD, sometimes applying rough assumption but some deductions have not been simulated. The validation of aggregates (if statistics are available from the national contributions administration) will show us the robustness of this simulation.*

1.2 Specificity of the Luxembourg economy

As it was noted above, the validation of aggregates will certainly depend on the availability of some detailed statistics. Nevertheless, another problem will certainly appear taking the macroeconomics statistics, underlying the specificity of the national economy.

Around 30 % (in 1998) of workers in Luxembourg are not living in the country. We call them border workers (living in France, Belgium or Germany). All of them are taxed on their professional income and pay social contributions on the place they work, that means in Luxembourg. Next to the taxes they pay, they receive social and family benefits in accordance to the Luxembourgish system. They represent a certain weight in the tax-benefit system but are not represented in EUROMOD because the database is only composed by a representative sample of persons living in Luxembourg.

So, due to the fact that an important part of the public receipts and expenses are made up of money for non-residents, people who want to use the Luxembourgish part of EUROMOD have to be careful if they want to go to macro data.

2. DETAILED DESCRIPTION OF THE TAX-BENEFIT INSTRUMENTS THAT ARE MODELLED

2.1 Social Contributions

Contribution rate : health social contribution reference date : 30 June 1998

	Rate			Part		Minimum basis of calculation	Maximum basis of calculation
	1	2	3	Employee – Self-employed	Employer – Pension aid fund		
In activity							
Wage-earner art.29.4a CAS (a)	5,1 %	0,3 %	5,4 %	2,7 %	2,7 %	SSM	5*SSM
Wage-earner art.29.4b CAS (b)	5,1 %	5,0 %	10,1 %	5,05 %	5,05 %	SSM	5*SSM
Other (c)	5,1 %	0 %	5,1 %	2,55 %	2,55 %	SSM	5*SSM
Self-employed	5,1 %	0,3 %	5,4 %	5,4 %	-	SSM	5*SSM
	Column 1 : contribution for benefits in kind Column 2 : contribution for cash-benefits Column 3 : total						
Retired	5,1 %			2,55 %	2,55 %	SSM+30%	5*SSM
Continued assurance	5,1 %			5,1 %	-	SSM	5*SSM
Unemployment	5,1 %			2,55 %	2,55 %	SSM	5*SSM

SSM : minimum social wage

- (a) Wage-earner in the private sector continue to receive pay – imposed of the employer – for the month in which the disease occurs and for the following three months. After expiration of the following these period cash-benefits for illness are paid by the sickness-insurance –fund (white-collar).
- (b) Cash-benefits pay by the sickness-insurance-fund from the first day of the disease (blue-collar).
- (c) Civil servant continue to receive pay – imposed of the employer – during the length of the disease (civil-servant).

Contribution rate : pension social contribution, accident social contribution, family social contribution, unemployment social contribution Reference date : 30 June 1998

	Rate	Part			Minimum basis of calculation	Maximum basis of calculation
		Insured	Employer	Authorities		
A. PENSION						
Wage-earner (except civil-servant)	24 %	8 %	8 %	8 %	SSM	5*SSM
Wage-earner (civil-servant)	24 %	7 %	9 %	8 %	SSM	5*SSM
Self-employed	24 %	16 %	-	8 %	SSM	5*SSM
Continued insurance	24 %	16 %	-	8 %	SSM	5*SSM
B. ACCIDENT						
Industrial section	Rate varies from 0,54 % to 6,00 %		Completely paid by the employer		SSM	5*SSM
Agricultural and forestry section	545 LUF/ha				-	-
C. FAMILY						
Wage-earner : public sector	1,7 %	-	1,7 %	-	SSM	5*SSM
Wage-earner : private sector	1,7 %	-	-	1,7 %	SSM	5*SSM
Self-employed	0,6 %	0,6 %	-	-	*	-
Farmer	0,6 %	-	-	0,6 %	*	5*SSM
D. UNEMPLOYMENT						
Financed by tax						

* for income less than 309 450 LUF/year, no contribution is due.

2.1.1 Health Insurance Contribution

2.1.1.1 Employee, Pensioner and Unemployed Health Insurance Contribution (EESICHi_LU)

2.1.1.1.1. Civil Servant Employee Health Insurance Contribution

Health contribution rate for civil servant employee is equal to 2,55 % ($rate1 = 0.0255$) based on the gross employment Income of the employee ($Base_IL=empY$).

Employment income ($empy$) is composed by individual gross income from employment ($coEMPY$) plus individual gross maternity payments ($coMATERY$).

For a full time worker ($FullTimeHrs = 40$) the maximum base is 5 times the minimum social wage per month ($up_base_limit = 231\ 375$), up to this base the health contribution rate is equal to 0 %. For a part time worker, the maximum base is proportional to the number of hours worked.

A civil servant employee ($IsCivSrv=1$) is defined as somebody who is employed by the state administration or the communal administration or the national railways company. The relevant tax unit is individual ($TAX_UNIT=individual$).

2.1.1.1.2. Blue Collar (non-Civil Servant) Employee Health Insurance Contribution

Health contribution rate for blue-collar employee is equal to 5,05 % ($rate1 = 0.0505$) based on the gross employment Income of the employee ($Base_IL=empY$).

Employment income ($empy$) is composed by individual gross income from employment ($coEMPY$) plus individual gross maternity payments ($coMATERY$).

For a full time worker ($FullTimeHrs = 40$) the maximum base is 5 times the minimum social wage per month ($up_base_limit = 231\ 375$), up to this base the health contribution rate is equal to 0 %. For a part time worker, the maximum base is proportional to the number of hours worked.

A blue collar (non civil servant) employee ($IsBlueColl=1$ and $IsCivSrv=-1$) is defined as an employee ($coEMPST=3$) who's a craft and trades worker, a plant and machine operator or someone who has got an elementary occupation ($coOCC>6$) and who is not a civil servant ($coCIVSRV=0$). The relevant tax unit is individual ($TAX_UNIT=individual$).

2.1.1.1.3. White Collar (non-Civil Servant) Employee Health Insurance Contribution

Health contribution rate for white-collar employee is equal to 2,7 % ($rate1 = 0.027$) based on the gross employment Income ($Base_IL=empY$).

Employment income ($empy$) is composed by individual gross income from employment ($coEMPY$) plus individual gross maternity payments ($coMATERY$).

For a full time worker ($FullTimeHrs = 40$) the maximum base is 5 times the minimum social wage per month ($up_base_limit = 231\ 375$), up to this base the health contribution rate is equal to 0 %. For a part time worker, the maximum base is proportional to the number of hours worked.

A white collar employee (someone who receives employment income and who's not a civil servant or not a blue collar employee) is defined as an employee ($coEMPST=3$) who's in the armed forces or a senior official and manager or a professional or a technician and associate professional or a clerk or a service and sales worker or a skilled agricultural ($coOCC<=6$) and who is not a civil servant ($coCIVSRV=0$).

The relevant tax unit is the individual ($TAX_UNIT=individual$).

2.1.1.1.4. Pensioners' "Employee" (i.e., own) Health Insurance Contribution

Health contribution rate for pensioner "Employee" is equal to 2,55 % ($rate1 = 0.0255$) based on the gross individual pension income ($Base_IL = penY$).

Pension income ($penY$) is composed by individual gross disabled pension (luPENDIS) +early retirement pension (luPENERP) +private sector retirement pension (luPENPRV) + public sector retirement pension (luPENPUB) + private sector reversion pension (luPENWPR) + public sector reversion pension (luPENWPU). The EUROMOD model includes also the Gross Private pension benefit payments (coPRVPEN) in the pension income ($penY$) but it is not applicable for Luxembourg.

The maximum base is 5 times the minimum social wage per month ($up_base_limit = 231\ 375$).

A pensioner "Employee" is defined as somebody who receives one of the five pension incomes mentioned above. The relevant tax unit is individual ($TAX_UNIT=individual$).

2.1.1.1.5. Unemployed "Employee" (i.e., own) Health Insurance Contribution

Health contribution rate for Unemployed "Employee" is equal to 2,55 % ($rate1 = 0.0255$) based on the individual gross unemployment allowances ($Base_IL = unempY$).

Unemployed allowances ($unempY$) are only composed by Unemployment Benefit (luUNEMPY).

The maximum base is 5 times the minimum social wage per month ($up_base_limit = 231\ 375\ LUF$).

An unemployed "employee" is defined as somebody who receives unemployment allowance. The relevant tax unit is individual ($TAX_UNIT=individual$).

2.1.1.2 Employer (also for Pensioners and Unemployed) Health Insurance Contribution (ERSICHI_LU)

2.1.1.2.1. Civil Servant Employer Health Insurance Contribution

Health contribution rate for civil servant employer is equal to 2,55 % ($rate1 = 0.0255$) based on the gross employment Income of the employee ($Base_IL=empY$).

Employment income ($empY$) is composed by individual gross income from employment (coEMPY) plus individual gross maternity payments (coMATERY).

For a full time worker ($FullTimeHrs = 40$) the maximum base is 5 times the minimum social wage per month ($up_base_limit = 231\ 375$), up to this base the health contribution rate is equal to 0 %. For a part time worker, the maximum base is proportional to the number of hours worked.

A civil servant employee ($IsCivSrv=1$) is defined as somebody who is employed by the state administration or the communal administration or the national railways company. The relevant tax unit is individual ($TAX_UNIT=individual$).

2.1.1.2.2. Blue Collar (non-Civil Servant) Employer Health Insurance Contribution

Health contribution rate for blue-collar employee is equal to 5,05 % ($rate1 = 0.0505$) based on the gross employment Income of the employee ($Base_IL=empY$).

Employment income (*empy*) is composed by individual gross income from employment (coEMPY) plus individual gross maternity payments (coMATERY).

For a full time worker (*FullTimeHrs = 40*) the maximum base is 5 times the minimum social wage per month (*up_base_limit = 231 375*), up to this base the health contribution rate is equal to 0 %. For a part time worker, the maximum base is proportional to the number of hours worked.

A blue collar (non civil servant) employee (*IsBlueColl=1* and *IsCivSrv=-1*) is defined as an employee (coEMPST=3) who's a craft and trades worker, a plant and machine operator or someone who has got an elementary occupation (coOCC>6) and who is not a civil servant (coCIVSRV=0). The relevant tax unit is individual (*TAX_UNIT=individual*).

2.1.1.2.3. White Collar (non-Civil Servant) Employer Health Insurance Contribution

Health contribution rate for white-collar employer is equal to 2,7 % (*rate1 = 0.027*) based on the gross employment Income (*Base_IL=empY*).

Employment income (*empy*) is composed by individual gross income from employment (coEMPY) plus individual gross maternity payments (coMATERY).

For a full time worker (*FullTimeHrs = 40*) the maximum base is 5 times the minimum social wage per month (*up_base_limit = 231 375*), up to this base the health contribution rate is equal to 0 %. For a part time worker, the maximum base is proportional to the number of hours worked.

A white collar employee (someone who receives employment income and who's not a civil servant or not a blue collar employee) is defined as an employee (coEMPST=3) who's in the armed forces or a senior official and manager or a professional or a technician and associate professional or a clerk or a service and sales worker or a skilled agricultural (coOCC<=6) and who is not a civil servant (coCIVSRV=0).

The relevant tax unit is the individual (*TAX_UNIT=individual*).

2.1.1.2.4. Pensioners' "Employer" (i.e., own) Health Insurance Contribution

Health contribution rate for pensioner "Employer" is equal to 2,55 % (*rate1 = 0.0255*) based on the gross individual pension income (*Base_IL = penY*).

Pension income (*penY*) is composed by individual gross disabled pension (luPENDIS) +early retirement pension (luPENERP) +private sector retirement pension (luPENPRV) + public sector retirement pension (luPENPUB) + private sector reversion pension (luPENWPR) + public sector reversion pension (luPENWPU). The EUROMOD model includes also the Gross Private pension benefit payments (coPRVPEN) in the pension income (penY) but it is not applicable for Luxembourg.

The maximum base is 5 times the minimum social wage per month (*up_base_limit = 231 375*) and the minimum base is 130 % of the minimum social wage (*lo_base_limit=60157.5*). If the gross individual pension income is less than 60 157.5, the "employer", that means the pension fund, must pay an 'added' health contribution rate (2,55 %) based on the difference between 130 % of the minimum social wage and the pension income.

A pensioner "Employee" is defined as somebody who receives one of the five pension incomes mentioned above. The relevant tax unit is individual (*TAX_UNIT=individual*).

2.1.1.2.5. Unemployed "Employer" (i.e., own) Health Insurance Contribution

Health contribution rate for Unemployed "Employer" is equal to 2,55 % ($rate1 = 0.0255$) based on the individual gross unemployment allowances ($Base_{IL} = unempY$).

Unemployed allowances ($unempY$) are only composed by Unemployment Benefit (luUNEMPY).

The maximum base is 5 times the minimum social wage per month ($up_base_limit = 231\ 375$ LUF).

An unemployed "employee" is defined as somebody who receives unemployment allowance. The relevant tax unit is individual ($TAX_UNIT=individual$).

2.1.1.3 Self-Employed Health Insurance Contribution (SESIChi_LU)

Health contribution rate for Self-employed is equal to 5,4 % ($rate1 = 0.054$) based on the self-employment income ($Base_{IL} = selfempY$).

If self-employment is the only activity or the main activity, the minimum base is the minimum social wage ($lo_base_lt = 46275$).

The maximum base is 5 times the minimum social wage per month ($up_base_limit = 231\ 375$).

If self-employment is the secondary activity (to define the secondary activity the following assumption has been made : a self-employment activity is defined as a secondary activity if the income of an other activity is higher than the income of self-employment) and if the income of the self-employment activity is less than 15 425 LUF/month ($threshold = 15425$), 1/3 of the minimum social wage, no health contribution has to be paid. The maximum base is 5 times the minimum social wage per month ($up_base_limit = 231\ 375$).

The relevant tax unit is individual ($TAX_UNIT=individual$).

2.1.1.4 "Employee" (i.e., own) Health Insurance Contribution on Social Assistance (EESIChi_SA_LU)

Health contribution rate for "employee" on social assistance is equal to 2,55 % ($rate1 = 0.0255$) based on the social assistance benefits ($Base_{IL} = saY$).

Social assistance benefits (saY) are only composed by the Revenu Minimum Garanti (lu_sben_SA).

The maximum base is 5 times the minimum social wage per month ($up_base_limit = 231\ 375$).

The relevant tax unit is individual ($TAX_UNIT=individual$).

2.1.1.5 "Employer" Health Insurance Contribution on Social Assistance (ERSIChi_SA_LU)

Health contribution rate for "employer" on social assistance is equal to 2,55 % ($rate1 = 0.0255$) based on the social assistance benefits ($Base_{IL} = saY$).

Social assistance benefits (saY) are only composed by the Revenu Minimum Garanti (lu_sben_SA).

The maximum base is 5 times the minimum social wage per month ($up_base_limit = 231\ 375$).

The relevant tax unit is individual ($TAX_UNIT=individual$).

2.1.2 Pension Contribution (co_pi_eesic)

2.1.2.1 Employee and Unemployed Pension Insurance Contribution (EESICpi_LU)

2.1.2.1.1. Non Civil Servant

Pension contribution for non civil servant employee is equal to 8 % ($rate1 = 0.08$) based on the gross employment Income ($Base_{IL}=empY$).

Employment income ($empy$) is composed by individual gross income from employment ($coEMPY$) plus individual gross maternity payments ($coMATERY$).

For a full time worker ($FullTimeHrs = 40$) the maximum base is 5 times the minimum social wage per month ($up_base_limit = 231\ 375$), up to this base the pension contribution rate is equal to 0 %. For a part time worker, the maximum base is proportional to the number of hours worked.

A non civil servant employee ($NotCivSrv=1$) is defined by the variable ($coEMPST=1$) who's not civil servant.

The relevant tax unit is individual ($TAX_UNIT=individual$).

2.1.2.1.2. Civil Servant

Pension contribution for civil servant is equal to 7 % ($rate1 = 0.07$) based on the gross employment Income ($Base_{IL}=empY$).

Employment income ($empy$) is composed by individual gross income from employment ($coEMPY$) plus individual gross maternity payments ($coMATERY$).

For a full time worker ($FullTimeHrs = 40$) the maximum base is 5 times the minimum social wage per month ($up_base_limit = 231\ 375$), up to this base the pension contribution rate is equal to 0 %. For a part time worker, the maximum base is proportional to the number of hours worked.

A civil servant employee ($IsCivSrv=1$) is defined as somebody who is employed by the state administration or the communal administration or the national railways company.

The relevant tax unit is individual ($TAX_UNIT=individual$).

2.1.2.1.3. Unemployed "Employee" (i.e., own) Pension Insurance Contribution

Pension contribution rate for Unemployed "Employee" is equal to 8 % ($rate1 = 0.08$) based on the individual gross unemployment allowances ($Base_{IL} = unempY$).

Unemployed allowances ($unempY$) are only composed by Unemployment Benefit ($luUNEMPY$).

The maximum base is 5 times the minimum social wage per month ($up_base_limit = 231\ 375\ LUF$).

An unemployed "employee" is defined as somebody who receives unemployment allowance. The relevant tax unit is individual ($TAX_UNIT=individual$).

2.1.2.2 EmployeR (also for Unemployed) Pension Insurance Contribution (ERSICpi_LU)

2.1.2.2.1. Non Civil Servant

Pension contribution for non civil servant employer is equal to 8 % ($rate1 = 0.08$) based on the gross employment Income ($Base_{IL}=empY$).

Employment income (*empY*) is composed by individual gross income from employment (coEMPY) plus individual gross maternity payments (coMATERY).
 For a full time worker (*FullTimeHrs = 40*) the maximum base is 5 times the minimum social wage per month (*up_base_limit = 231 375*), up to this base the pension contribution rate is equal to 0 %. For a part time worker, the maximum base is proportional to the number of hours worked.
 A non civil servant employee (*NotCivSrv=1*) is defined by the variable (*coEMPST=1*) who's not civil servant.
 The relevant tax unit is individual (*TAX_UNIT=individual*).

2.1.2.2.2. Civil Servant

Pension contribution for civil servant employer is equal to 9 % (*rate1 = 0.09*) based on the gross employment Income (*Base_IL=empY*).
 Employment income (*empY*) is composed by individual gross income from employment (coEMPY) plus individual gross maternity payments (coMATERY).
 For a full time worker (*FullTimeHrs = 40*) the maximum base is 5 times the minimum social wage per month (*up_base_limit = 231 375*), up to this base the pension contribution rate is equal to 0 %. For a part time worker, the maximum base is proportional to the number of hours worked.
 A civil servant employee (*IsCivSrv=1*) is defined as somebody who is employed by the state administration or the communal administration or the national railways company.
 The relevant tax unit is individual (*TAX_UNIT=individual*).

2.1.2.2.3. Unemployed "Employer" (i.e., own) Pension Insurance Contribution

Pension contribution rate for Unemployed "Employer" is equal to 8 % (*rate1 = 0.08*) based on the individual gross unemployment allowances (*Base_IL = unempY*).
 Unemployed allowances (*unempY*) are only composed by Unemployment Benefit (luUNEMPY).
 The maximum base is 5 times the minimum social wage per month (*up_base_limit = 231 375 LUF*).
 An unemployed "employee" is defined as somebody who receives unemployment allowance.
 The relevant tax unit is individual (*TAX_UNIT=individual*).

2.1.2.3 Self-Employed' Pension Insurance Contribution (SESICpi_LU)

Pension contribution rate for Self-employed is equal to 16 % (*rate1 = 0.16*) based on the self-employment income (*Base_IL = selfempY*).
*If self-employment is the only activity or the main activity, the minimum base is the minimum social wage (*lo_base_lt = 46275*).*
 The maximum base is 5 times the minimum social wage per month (*up_base_limit = 231 375*).

If self-employment is the secondary activity (to define the secondary activity the following assumption has been made : a self-employment activity is defined as a secondary activity if the income of an other activity is higher than the income of self-employment) and if the income of the self-employment activity is less than 15 425 LUF/month (*threshold = 15425*), 1/3 of the minimum social wage, no pension contribution has to be paid. The maximum base is 5 times the minimum social wage per month (*up_base_limit = 231 375*).

The relevant tax unit is individual (*TAX_UNIT=individual*).

2.1.3 Accident insurance contribution (*co_di_ersic*)

2.1.3.1 EmployeR Disability (Accident) Insurance Contribution (*ERSICdi_LU*)

Accident insurance contribution is exclusively payable by employers. The accident insurance rate varies from 0,54 % to 6 % and the rate is depending on the activity domain. In reality, 22 different rates exist.

Due to the fact that these 22 different rates could not be simulated exactly in EUROMOD, the choice was taken that a different rate will be calculate for each different NACE code. The following rates are an approximation of the reality.

NACE	Employer accident insurance contribution rate
NACE1_rt	0.0135
NACE2_rt	0.0119
NACE3_rt	0.0131
NACE4_rt	0.02395
NACE5_rt	0.0149
NACE6_rt	0.035657
NACE7_rt	0.0135
NACE8_rt	0.012467
NACE9_rt	0.006
NACE10_rt	0.0105

The base of the caculation of the accident insurance contribution is the employment income (*empY*).

For a full time worker (*FullTimeHrs = 40*) the maximum base is 5 times the minimum social wage (*up_base_limit = 231 375*), up to this base the pension contribution rate is equal to 0 %.

For a part time worker, the maximum base is proportional to the number of hours worked.

The relevant tax unit is individual (*TAX_UNIT=individual*).

2.1.3.2 Self-employed Disability (Accident) Insurance Contribution (*SESICdi_LU*)

Non farmers :

Accident contribution rate for Self-employed (excluded farmers) rate varies from 0,54 % to 6 % and the rate is depending on the activity domain. In reality, 22 different rates exist.

Due to the fact that these 22 different rates could not be simulated exactly in EUROMOD, the choice was taken that a different rate will be calculate for each different NACE code. The following rates are an approximation of the reality.

NACE	Self-employed accident insurance contribution rate
NACE1_rt	0.0135
NACE2_rt	0.0119
NACE3_rt	0.0131
NACE4_rt	0.02395
NACE5_rt	0.0149
NACE6_rt	0.035657

NACE7_rt	0.0135
NACE8_rt	0.012467
NACE9_rt	0.006
NACE10_rt	0.0105

The base of the calculation of the accident insurance contribution is the self-employed income (*selfempY*).

The maximum base is 5 times the minimum social wage per month (*up_base_limit = 231 375*).

2.1.4 Family benefits contribution (*lu_sesic_famBC*)

2.1.4.1 Self-Employed (non-farmers) Family Benefits Contribution (*SESIC_famBC_LU*)

Family benefits contribution for self-employed (non-farmers) is equal to 0.6 % (*rate2 = 0.006*) based on self employment income (*Base_IL = selfempY*)

Individual self-employment income (*selfempy*) is composed by (coSLFEMY).

For annually income less than 309450 LUF (*threshold = 309 450*), no contribution is due.

A non-farmer self-employed (*status = selfemployed*) is defined by the variable (coEMPST=2).

The relevant tax unit is individual (*TAX_UNIT=individual*).

2.1.5 Family benefits

2.1.5.1 Maternity Allowance ("*allocation de maternité*") (*lu_sben_MatB*)

Eligibility :

This allowance is given to the mother of a newborn child (*ge_nch=1 and ge_nch_lt=1*) who doesn't receive any other earnings (wage, maternity cash benefits) during the 8 weeks before the birth and the 8 weeks after the birth.

The relevant tax unit for eligibility is parent + newborn (*TAX_UNIT= parent+newborn*).

It's also due during 8 weeks in case of adoption of a child who is less than 6 years old (not simulated).

Calculation of payment :

The amount of this allowance is 6 584 LUF per week payable over a period of 16 weeks (*SingPay = 105344*).

This Benefit is only received once, regardless how many children (*SBEN_max= 105344*).

The relevant tax unit is parent + newborn (*TAX_UNIT= parent+newborn*).

2.1.5.2 Prenatal-, Postnatal-, and Child Birth Allowance ("*allocation prenatale*"; "*allocation postnatale*"; *allocation de naissance*") (*lu_sben_cbb*)

Eligibility :

This allowance is given to the mother of a newborn child.

(*TAX_UNIT = CB_family and ge_nch_lt=1*) is eligible for this allowance (*lu_sben_cbb*).

Calculation of payment :

The amount of this allowance is 59 058 LUF paid in three times.

The condition required to receive this allowance is that the age of the child is equal 0.

2.1.5.3 Education Allowance ("allocation d'éducation") (lu_sben_EduB)

Education allowance for the parent who educates a child under 2 years and either does not have a regular income or whose income, cumulated with that of the husband / wife does not exceed a certain amount. This amount is linked to the number of dependent child in the household. The allowance is paid from the first day of the month following the end of the maternity leave or from the first day of the month following the end of the maternity allowance rights until the first day of the month following the second birthday of the child. This allowance is maintained until the fourth birthday when three or more dependent children are educated in the household or until the fourth birthday of a handicapped child. Half of the amount of this allowance can be asked if a person reduces the half time of his working time, independently from the high of the income.

For practical reasons, this benefit is simulated under 4 different policies.

2.1.5.3.1 Education Allowance. 1: not working ("allocation d'éducation"); (SBEN_EduB1_LU)

The first policy simulates the case of families in which the person who educates the child(ren) doesn't work.

- For one child

Eligibility :

- number of child must be one ($ge_nch1=1$ $ge_nch1_lt=1$) and only one ($ge_nch2=-1$ and $ge_nch2_lt=2$)
- not eligible if the child benefits unit($TAX_UNIT=CB_family$) receives income ($ge_incl=-1$ and $ge_incl_lt=1$ and $ge_incl_IL =seminet_empY$). The targeted income is the semi-net employment income, without social contributions.

Calculation of payment :

The base amount is 16 400 LUF/month.

The amount is only paid once (regardless how many children) ($SBEN_amt_max=16\ 400$ and $SBEN_max=1$).

At least one child must be less than 2 years old ($es_ch_age1=1$ and $es_ch_age1_min=0$ and $es_ch_age1_max=1$) or at least one handicapped child must be less than 4 years old ($es_DisCh_age1=1$ and $es_disch_age1_min=2$ and $es_disch_age1_max=3$).

For two children :

Eligibility :

- number of child must be two ($ge_nch1=1$ $ge_nch1_lt=2$) and only two ($ge_nch2=-1$ and $ge_nch2_lt=3$)
- not eligible if the child benefits unit($TAX_UNIT=CB_family$) receives income ($ge_incl=-1$ and $ge_incl_lt=1$ and $ge_incl_IL =seminet_empY$). The targeted income is the semi-net employment income, without social contributions.

Calculation of payment :

The base amount is 16 400 LUF/month.

The amount is only paid once (regardless how many children) ($SBEN_amt_max=16\ 400$ and $SBEN_max=1$).

At least one child must be less than 2 years old ($es_ch_age1=1$ and $es_ch_age1_min=0$ and $es_ch_age1_max=1$) or at least one handicapped child must be less than 4 years old ($es_DisCh_age1=1$ and $es_disch_age1_min=2$ and $es_disch_age1_max=3$).

At least three children :

Eligibility :

- number of child must be at least three ($ge_nch1=1$ $ge_nch1_lt=3$)
- not eligible if the child benefits unit ($TAX_UNIT=CB_family$) receives income ($ge_incl=-1$ and $ge_incl_lt=1$ and $ge_incl_IL =seminet_empY$). The targeted income is the semi-net employment income, without social contributions.

Calculation of payment :

The base amount is 16 400 LUF/month.

The amount is only paid once (regardless how many children) ($SBEN_amt_max=16\ 400$ and $SBEN_max=1$).

At least one child must be less than 4 years old ($es_ch_age1=1$ and $es_ch_age1_min=0$ and $es_ch_age1_max=3$).

2.1.5.3.2 Education Allowance. 2: income dependent ("allocation d'éducation")
(*SBEN_EduB2_LU*)

The second policy simulates the case of both parents receiving income, in this case the allowance is income dependent.

- For one child

Eligibility :

number of child must be one ($ge_nch1=1$ $ge_nch1_lt=1$) and only one ($ge_nch2=-1$ and $ge_nch2_lt=2$)

Calculation of payment :

The allocation is granted if the semi-net income (professional income or replacement income minus social contribution) of the family is less than 138 824 LUF/month ($Singpay=138\ 824$).

It's a differential amount ($Singpay - Means_inc_il$) but the maximum amount of this allowance is 16 460 LUF/month ($SBEN_amt_max=16460$) regardless the number of children. At least one child must be under 2 years ($es_ch_age1=1$ and $es_ch_age1_min=0$ and $es_ch_age1_max=1$) or at least one handicapped child must be under 4 ($es_DisCh_age1=1$ and $es_disch_age1_min=2$ and $es_disch_age1_max=3$).

- For two child

Eligibility :

number of child must be two ($ge_nch1=1$ $ge_nch1_lt=2$) and only two ($ge_nch2=-1$ and $ge_nch2_lt=3$)

Calculation of payment :

The allocation is granted if the semi-net income (professional income or replacement income minus social contribution) of the family is less than 185 099 LUF/month ($Singpay=185\ 099$). It's a differential amount ($Singpay - Means_inc_il$) but the maximum amount of this

allowance is 16 460 LUF/month (*SBEN_amt_max=16460*) regardless the number of children. At least one child must be under 2 years (*es_ch_age1=1 and es_ch_age1_min=0 and es_ch_age1_max=1*) or at least one handicapped child must be under 4 years (*es_DisCh_age1=1 and es_disch_age1_min=2 and es_disch_age1_max=3*).

- At least three children

Eligibility :

number of child must be three or more (*ge_nch1=1 ge_nch1_lt=3*) .

Calculation of payment :

The allocation is granted if the semi-net income (professional income or replacement income minus social contribution) of the family is less than 231 374 LUF/month (*Singpay=231 374*). It's a differential amount (*Singpay- Means_inc_il*) but the maximum amount of this allowance is 16 460 LUF/month (*SBEN_amt_max=16460*) regardless the number of children. At least one child must be under 4 years (*es_ch_age1=1 and es_ch_age1_min=0 and es_ch_age1_max=3*).

2.1.5.3.3 Working Hours Dependent Education Allowance ("allocation d'éducation"); < 3 children (SBEN_EduB3_LU)

The following hypothesis is made : if a mother of a young child works part-time we suppose that she has reduced her working time for the education of her child.

Eligibility :

At least one child (*ge_nch1=1 and ge_nch1_lt=1*) but less than 3 years old (otherwise EduB4 applies) (*ge_nch2=-1 and ge_nch2_lt=3*).

Not eligible if anyone in tax unit already receives any other EduB (*tubenelig=-1 and tubenelig_name= lu_sben_EduB*)

Calculation of payment :

The base amount is 8 200 LUF/month, half of the full allowance (*SingPay=16 400*).

At least one child must be under 2 years (*es_lu_EduB_maxage=1*) or one disabled child must be under 4 years (*es_lu_EduB_dismaxage=3*) and maximum working hours to still count as part-time is 20 hours (*es_lu_EduB_Ptmaxhrs=20*)

2.1.5.3.4 Working Hours Dependent Education Allowance ("allocation d'éducation"); >= 3 children (SBEN_EduB4_LU)

Eligibility :

At least three children (*ge_nch1=1 and ge_nch1_lt=3*).

Not eligible if anyone in tax unit already receives any other EduB (*tubenelig=-1 and tubenelig_name= lu_sben_EduB*)

Calculation of payment :

The base amount is 8 200 LUF/month; half of the full allowance (*SingPay=16400*).

At least one child must be under 4 years ($es_lu_EduB_maxage=3$) or one disabled child must be under 4 years ($es_lu_EduB_dismaxage=3$) and maximum working hours to still count as part-time is 20 hours ($es_lu_EduB_Ptmaxhrs=20$).

2.1.5.4 Annual Beginning of School Allowance ("Allocation de Rentrée Scolaire") (lu_sben_SchoolB)

Allowance at the beginning of school (allocation de rentrée scolaire) is given for children over 6 years.

The amounts of the allowance are dependent on the age and the number of children in the tax-unit.

For practical reasons, this benefit is simulated under 3 different policies.

2.1.5.4.1 Annual Beginning of School Allowance ("Allocation de Rentrée Scolaire") - 1 child (SBEN_SchoolB1_LU)

Annual beginning of school allowance for a group of one child.

Eligibility :

Eligible if exactly one child ($ge_nch=le_nch=2$ and $ge_nch_lt=le_nch_lt=1$).

At least one person in unit must be eligible for unit to be eligible ($SBEN_elig_type=2$) and the tax-unit is CB_family.

Calculation of payment :

The amount for a child between 6 and 11 years old is 3840 LUF/year.

The amount for a child more than 11 years old is 5486 LUF/year.

The "Base" amount which is multiplied with resulting equivalence scale is equal to 3840 LUF/year ($SingPay=3840$).

For a child between 6 and 11 years old the equivalence scale is equal 1 ($es_ch_age1=1$ and $es_ch_age1_min=6$ and $es_ch_age1_max=11$).

For a child more than 11 years old the equivalence scale is equal 1.428646 ($5486/3840$) ($es_ch_age2=1.428646$ and $es_ch_age2_min=12$ and $es_ch_age1_max=120$).

2.1.5.4.2 Annual Beginning of School Allowance ("Allocation de Rentrée Scolaire") - 2 children (SBEN_SchoolB2_LU)

Annual beginning of school allowance for a group of two children.

Eligibility :

Eligible if exactly two children ($ge_nch=le_nch=2$ and $ge_nch_lt=le_nch_lt=2$).

At least one person in unit must be eligible for unit to be eligible ($SBEN_elig_type=2$) and the tax-unit is CB_family.

Calculation of payment :

The amount for a child between 6 and 11 year old is 6584 LUF/year.

The amount for a child more than 11 year old is 8230 LUF/year.

The "Base" amount which is multiplied with resulting equivalence scale is equal to 6584 LUF/year ($SingPay=6584$).

For a child between 6 and 11 years old the equivalence scale is equal 1 ($es_ch_age1=1$ and $es_ch_age1_min=6$ and $es_ch_age1_max=11$).

For a child more than 11 years old the equivalence scale is equal 1.25 (8230/6584) ($es_ch_age2=1.25$ and $es_ch_age2_min=12$ and $es_ch_age1_max=120$).

2.1.5.4.3 Annual Beginning of School Allowance ("Allocation de Rentrée Scolaire") - >2 children (SBEN_SchoolB3_LU)

Annual beginning of school allowance for a group of three or more children.

Eligibility :

Eligible if three or more children ($ge_nch=1$ and $ge_nch_lt=3$).

At least one person in unit must be eligible for unit to be eligible ($SBEN_elig_type=2$) and the tax-unit is CB_family.

Calculation of payment :

The amount for a child between 6 and 11 year old is 9327 LUF/year.

The amount for a child more than 11 year old is 10973 LUF/year.

The "Base" amount which is multiplied with resulting equivalence scale is equal to 9327 LUF/year ($SingPay=9327$).

For a child between 6 and 11 years old the equivalence scale is equal 1 ($es_ch_age1=1$ and $es_ch_age1_min=6$ and $es_ch_age1_max=11$).

For a child more than 11 years old the equivalence scale is equal 1.176477 (10973/9327) ($es_ch_age2=1.176477$ and $es_ch_age2_min=12$ and $es_ch_age1_max=120$).

2.1.5.5 Child benefit ("family benefit")(SBEN_CB_LU)

Child benefits are depending on the rank and on the age of the child.

Eligibility :

Eligible if number of children greater than 0 ($ge_nch=1$ and $ge_nch_lt=1$).

At least one person in unit must be eligible for unit to be eligible ($SBEN_elig_type=2$).

The tax unit is defined by CB_family.

Calculation of payment :

"Base" amount which is multiplied with resulting equivalence scale is equal 4 372 LUF/month ($SingPay=4372$).

- depending on the rank :

For the first child ($es_ch_parity1_lt=1$) the base amount is multiplied by 1 ($es_ch_parity1=1=4372/4372$), so child benefit for a one child family is equal 4372 LUF/month.

For the second child ($es_ch_parity2_lt=2$) the base amount is multiplied by 1.539799 ($es_ch_parity2=1.539799=(11104-4372)/4372$), so child benefit for a family of two children is equal 11 104 LUF/month.

For the third child ($es_ch_parity3_lt=3$) the base amount is multiplied by 2.369167 ($es_ch_parity3=2.369167=(21462-11104)/4372$), so child benefit for a family of three children is equal 21 462 LUF/month.

For each subsequent child ($es_ch_parity4_lt=20$) the base amount is multiplied by 2.368024 ($es_ch_parity4=2.368024=(31815-21462)/4372$), so child benefit for a family of four or

more children is equal 31 815 LUF/month + (10 353 LUF/month multiplied by (number of children minus 4)).

- depending on the age :

For a child aged between 6 and 11 years ($es_ch_age1_min=6$ and $es_ch_age1_max=11$) a supplement of 548 LUF/month is given ($es_ch_age1 = 0.125343=548/4372$).

For a child aged 12 or more ($es_ch_age2_min=12$ and $es_ch_age2_max=130$) a supplement of 1648 LUF/month is given ($es_ch_age2 = 0.376944=1648/4372$).

The relevant tax unit is CB_family.

2.1.5.6 Handicapped Child Benefit ("*allocation speciale supplementaire*") (SBEN_hcB_LU)

A supplementary allowance of 4 372 LUF/month is due for each child under 18 with an insufficient or permanent reduction of at least 50 % of physical or mental ability by comparison with that of a child of the same age. Maintenance without an age limit if the child is unable to care for itself unless in receipt of a benefit from the national solidarity fund or another social security body.

Eligibility :

Eligible if number of children greater than 0 ($ge_nch=1$ and $ge_nch_lt=1$).

At least one person in unit must be eligible for unit to be eligible ($SBEN_elig_type=2$).

The tax unit is defined by HCB_family.

Calculation of payment :

"Base" amount which is multiplied with resulting equivalence scale is equal 4372 LUF/month ($SingPay=4372$).

This allowance is given for each handicapped dependent child ($es_DisCh=1$).

The relevant tax unit is HCB_family.

2.1.6. Seriously Disabled Persons ("*Allocation Spéciale pour personnes handicapées*") (SBEN_sdpB_LU)

For seriously handicapped persons who are unable to live without the assistance of a third party, a special allowance is available, which is not income dependent. The main conditions of eligibility are the residence in Luxembourg for a minimum period of 10 years. This allowance could be asked for handicapped children from three years, in this case the residence condition is asked for one of the two parents.

The amount of this allowance is equal 7 253 LUF/month to 18 years and 14 507 LUF/month over this age.

Be careful :

We must signal that this simulation is quite rough. The definition of an handicapped person we use in this simulation is the one issue from a response of the questionnaire from whom the database is built. The handicapped is self-defined. To obtain this allocation a medical certificate must be established by a professional.

2.1.7 Social Assistance ("*Revenu Minimum Garanti*") (*SBEN_SA_LU*)

To ensure a decent standard of living to the population and to protect individuals against poverty the law of 26 July 1986 has established the Revenu Minimum Garanti (RMG). The general conditions to be eligible for the RMG are following :

- residence : persons resident on Luxembourg territory and having resided in the country at least ten years during the last 20 years.
- Age : with effect from 30 years; exceptions for persons unable to work or looking after a child or an invalid.
- Be available on the labour market and accept an appropriate employment assigned by the labour authorities ; exception for sick persons, old persons, person who are looking after a child or an invalid.

The domestic unit for calculation of resources : de facto community of persons living under the same roof and obviously disposing of a common budget.

The resources taken into account : the entire gross revenue, possessions and replacement of supplementary social security benefits (excluding family allowances and maternity benefits). Revenues from employment, replacement benefits of social security and legally due alimony are exempted up to one fifth of the global guaranteed revenue.

The guaranteed amounts for a person living alone is equal 32 964 LUF/month

For the second adult it's equal 16 482 LUF/month

For each other adult 9 432 LUF/month

For each dependent child 4 000 LUF/month.

Eligibility :

Eligible if 30 years or older (*ge_age1=1 and ge_Age1_Lt=30*)

Eligible if anyone in unit is disabled (*TUDisabled=1*)

Eligible if at least one child younger than 15 (*ge_nch_age1=1 and ge_nch_age1_lt=1 and ge_nch_age1_min=0 and ge_nch_age1_max=14*)

Not eligible if less than 10 years in Luxembourg (*lu_le_TIMELX=-1 and lu_le_TIMELX_lt=9*)

At least one person needs to be eligible in the tax unit (*SBEN_elig_type=2*) and the tax unit is the household (*TAX_UNIT = household*) .

Calculation of payment :

Set disregard amount to maximum benefit initially :

For the head of tax_unit : 32 964 LUF/month (*disregard_amt= 32964 and es_htu = 1*)

For the second adult : 16 482 LUF/month (*es_ndepad_age1 = 0.5 = 16482/32964 and es_ndepad_age1_minnum= 2 and es_ndepad_age1_maxnum=2 and es_ndepad_age1_min =30 and es_ndepad_age1_max =130*).

For each other adult : 9 432 LUF/month (*es_ndepad_age2= 0.286130324 =9432/32964 es_ndepad_age2_minnum=3 and es_ndepad_age2_maxnum =20 and es_ndepad_age2_min=30 and es_ndepad_age2_max = 130*)

For each dependent child : 4000 LUF/month (*es_ch= 0.121344497=4000/32964*)

Income, such as professional income, replacement income, education allowance and maternity allowance are disregarded up to 20 % of the amount of the social assistance (*disregard_il=SA_DisregBase*).

Disregard Adjustment : Maintenance income is disregarded too if children in unit and professional income from a child less than 25 years old is disregarded too (up to the maximum amount given to the first adult).

One part of the wealth income (immovable and movable capital) is disregarded too, depending on age and on civil status. The wealth income is not well defined in the simulation.

2.1.8 Housing Benefit (part of Social Assistance) (SBEN_HB_LU)

Housing benefit is given eventually to person receiving the social assistance benefits. Where rent is due for an occupied flat the difference between the rent paid and the amount corresponding to 10 % of the guaranteed minimum income is granted additionally (Maximum 5000 LUF/month)

Eligibility :

Eligible if receiving social assistance (*tubenelig=1 and tubenelig_name=lu_sben_sa*).

Not eligible if no rent paid (*le_var1=-1 and le_var1_name=coRENT and le_var1_lt=0*).

At least one person needs to be eligible in the household (*TAX_UNIT=household*).

Calculation of payment :

First calculation of 10 % of the granted minimum income (*Means_inc_il = HB_means* where *HB_means* represents 10 % of *co_SBEN_Max*).

The maximum amount for housing benefit is equal 5 000 LUF/month, in the model this amount represents the base amount (*SingPay=5000*)

2.2 Income Taxation

2.2.1 Income components subject to income tax (taxableY)

Businessprofits
Income from farming and forestry
Income from independent professions
Income from dependent professions
Pension income
Income from capital
Rental income
Miscellaneous income.

2.2.2 Income tax deductions

2.2.2.1 Deduction for wage-earners (co_it_WageEarnrs_ded)

For wage earners, a deduction of 21 000 LUF + 24 000 LUF + travel costs is allowed per year. The minimum deduction for travel costs is 15 600 LUF and the maximum deduction for travel costs is 117 000 LUF dependent on the distance between living place and working place. Because no information is available to calculate this distance, we have imputed 15 600 (minimum) plus 60 000 LUF for travel costs for each wage earner. ($WageEarnrs_ded = 120\,600 = 21\,000 + 24\,000 + 15\,600 + 60\,000$)

These deductions are made on the basis of individual employment *income* ($empY_IL=empY$ and $TAX_UNIT=individual$). Employment income includes also maternity income.

The deduction of 21 000 LUF is a flat rate deduction. If the real expenses are higher than this flat rate deduction, the wage-earner could choose to deduct the real expenses. No information are available for these real expenses. The decision was taken to choose the flat rate deduction.

2.2.2.2. Deduction for pensioners (lu_it_pen_ded)

For pensioner a deduction of 36 000 (12 000 + 24 000) LUF/year ($ded_amt = 36\,000$) is made on the pension at the individual level ($penY_IL = penY$ and $TAX_UNIT = individual$). Pension means retirement pension, early retirement pension, survivor pension and invalidity pension.

The deduction of 12 000 LUF is a flat rate deduction. If the real expenses are higher than this flat rate deduction, the pensioner could choose to deduct the real expenses. No information are available for these real expenses. The decision was taken to choose the flat rate deduction.

2.2.2.3 Deduction for disabled employees (lu_it_dis_ded)

For disabled employees a deduction, dependent on the degree of the handicap is allowed. Because no information concerning the degree of handicap exist, an average deduction has been chosen ($ded_amt= 39514.29/year$). This deduction is made on the basis on the individual employment income ($empY_IL=empY$ and $TAX_UNIT=individual$).

2.2.2.4 Deduction for agricultural salaried workers (*lu_it_agrw_ded*)

For agricultural salaried workers, a deduction of 30 % (*ded_rate = 0.3*) on the semi-net wage (*seminetY_IL = seminet_empY*), wage after deduction of social contribution, is allowed.

2.2.2.5 Deduction for farmers (*lu_it_farmer_ded*)

A deduction of 90 000 LUF/year (*ded_amt = 90 000*) is granted to farmers.

This deduction is granted at the individual level (*TAX_UNIT = individual*). In the case of joint taxation, this deduction is multiplied by two (180 000).

This surcharge is not granted if the couple get the extra-professional deduction (see Deduction for "professional" (i.e., working) couples (*lu_it_profcouple_ded*)). (not simulated)

2.2.2.6 Exemption for accessory income (*lu_it_accY_ded*)

The first 10 000 LUF for accessory income are not taxable (*exempt_lt = 10000*). The exemption is granted at the married couple level (*TAX_UNIT = marrcouple*).

2.2.2.7 Expenditure deduction (*lu_it_exp_ded*)

Special expenses that are not related to income of a particular source may be deductible from the taxpayer's total net income from all sources by express permission of the law e.g..

A flat minimum allowance of 18,000 LUF/year is granted, which is doubled if both spouses earn salaried income (*Std_ded_amt = 18000*).

Instead the flat minimum allowance, the taxpayer can deduct other expenses. The expenses that are simulated in EUROMOD do not cover all the expenses that could be deducted.

EURMOD simulates the following expenses :

- Supplementary social security contributions for pension contribution (avantage fiscal pour primes d'assurance pension complémentaire). The deduction limit is 48 000 LUF/year and is doubled for married couples if both subscribe a pension-contribution contract (*pencon_lt = 48 0000 and PenCon_IL = pencon*).
- Interest payments on loans contracted for the acquisition of assets unrelated to a professional activity (intérêts débiteurs sur crédits à la consommation). The deduction limit for interest expenses is 27 000 LUF/year and this amount is multiplied by the number of persons in the fiscal household (*int_lt = 27000 and int_ch_lt = 27000 and int_il = interest_exp*).
- maintenance payments (rentes et charges permanentes payées au conjoint divorcé par consentement mutuel). The deduction limit is 768 000 LUF/year and conditions like the date of the divorce must be considered for this deduction. In Euromod, these conditions are not taking in account. (*MaintPaymnt_IL = maint_exp*).

EUROMOD does not simulate the following expenses (example) :

- Certain premiums paid for life, sickness, accident, and civil liability insurance and contributions to certain recognised medical or social organisations

- Contributions to approved building societies

2.2.2.8 Expenditure deduction for handicapped people (*lu_it_disexp_ded*)

Handicapped people are granted a special deduction dependent on the degree of the handicap. Due to the impossibility to know the degree of handicap, an average deduction has been calculated for this deduction. The amount of this deduction is 27171.43 LUF/year (*ded_amt = 27171.43*).

2.2.2.9 Deduction for child care expenditures (*lu_it_chexp_ded*)

A flat amount of 24 000 LUF/year is granted for childcare expenditures. This flat amount could not exceed the real cost of the child care expenditures.

2.2.2.10 Deductions for family care expenditures (*lu_it_famcare_ded*)

For families care expenditures a deduction is granted if someone has the complete charge of a parent in the household (needy parents). This deduction is dependent on the age and the number of person in charge. The flat amount deduction for the first parent aged of 21 years or more is 192 000 LUF/year (*ded_amt_ad1 = 192000*) and 108 000 LUF (*ded_amt_ad2=108 000*) for each other parent aged 21 year or more. The flat amount of each parent aged less than 21 years is 72 000 LUF/year (*ded_amt_ch = 72000*).

As long as no information is available to determine the dependence of a person, the decision was taken to define a dependent person as someone who earns less than 20 000 LUF/month .

2.2.2.11 Deduction for lone parents (*lu_it_lp_ded*)

A deduction for lone parent is granted if the taxpayer is alone to support the child and if the child receives no maintenance payments . The flat amount of this deduction is 77 400 LUF/year (*ded_amt= 77400*). If maintenance payments is less than 77 400 LUF/year the deduction is the difference between 77 400 and the yearly maintenance payment (*maintY_IL= maintY*).

2.2.2.12 Deduction for "professional" (i.e., working) couples (*lu_it_profcouple_ded*)

The extra-professional deduction is accorded for couples who are jointly taxed and when both are working. The amount of this deduction is 180 000 LUF (*ded_amt=180000*).

2.2.2.13 Exemption for LUX investment plus deduction for costs related to investment income (*lu_it_invY_ded*)

An exemption of 60 000 LUF (*ded_limit = 60 000*) on interest from Luxembourg savings accounts and public or semi-public bonds is allowed. The deduction could not be greater than interest. In EUROMOD it will be assume that all investment income (*invY_IL=invY*) is from Luxembourg investment and the deduction could not be greater than investment income.

This previous amount is doubled for joint taxation .

Near the exemption of 60 000 LUF/year, a deduction for costs related to investment income is granted. The amount of this deduction is 1 000 LUF/year.

2.2.2.14 Proportional deduction of certain income (property income) (co_it_prop_ded)

The deductions related to the property income could be a proportion of the rent income. If the taxpayer choose this option, the deduction is equivalent to 35 % of the rent income ($proportion=0.35$) and could not be greater than 105 000 LUF/year ($ded_limit=105\ 000$). This is the easiest way to simulate the deduction related to the rental income in EUROMOD. Normally this option is only possible for building aged more than 14 years.

The other option to calculate the deductions related to the rental income is the calculation of the real expenses related to the building. No information is available for this calculation in EUROMOD.

The debt interest related to the building or the part of the building that is rented could also be deducted but no information is available in EUROMOD.

Also the debt interest of the building occupied by the owner could be deduct from the rental income (here a fictive rent) but not simulated in EUROMOD.

2.2.3 Calculation of the tax

2.2.3.1 Three different taxes class.

Taxpayers are separated into three different classes : (class1, class1a and class2)

- class 1 includes non-married single without dependent children and less than 65 year old at the 1st January of the taxable year, separated and divorced since more than three years without children and less than 65 year old at the 1st January of the taxable year.
- Class 1a includes non-married single with dependent children, separated and divorced since more than three years with dependent children, non-married single more than 64 years old at the 1st January of the taxable year, separated and divorced since more than three years without dependent children and more than 64 years old, widows since more than three years with or without dependent children.
- class 2 includes married people, separated, divorced and widows less than three years.

2.2.3.2 What are the applicable rates?

Income Tax is determined on the basis of a progressive rate, ranging from 6 % on taxable income ($TaxableY_il= taxableY$) in excess of 270 000 LUF up to 46 % on taxable income in excess of 2 640 000 LUF. An additional 2,5% of the tax payable is added as a contribution to the unemployment fund.

First the annual taxable income is adjusted to bring it to the nearest 1000.

Tax band	Lower limit	Upper limit	Tax rate (in %)
1	0	270 000	0
2	270000	354000	6
3	354000	423000	16
4	423000	492000	18
5	492000	561000	20
6	561000	630000	22
7	630000	699000	24
8	699000	768000	26
9	768000	837000	28
10	837000	906000	30
11	906000	975000	32
12	975000	1044000	34
13	1044000	1113000	36
14	1113000	1182000	38
15	1182000	1251000	40
16	1251000	1320000	42
17	1320000	2640000	44
18	2640000		46

The normal rate is applied to class 1 taxpayers.

Class 2 taxpayers benefit from the so-called splitting, i.e., the income of both spouses is aggregated, then divided by two. To this figure the tax rate is applied and the tax thus calculated is multiplied by two in order to determine the final tax burden.

Class 1a taxpayers have an intermediate regime, less favourable than class 2, but more favourable than class 1 taxpayers.

For class 1a taxpayers having a taxable income equal or less than 1 214 000 LUF/year, the tax is calculated on a different amount than the taxable income. This amount is equal taxable income minus a deduction. This deduction is equal $(1\ 620\ 000 - \text{taxable income})/4$. The normal rate is applied to this amount.

For class 1a taxpayers having a taxable income equal or higher than 1 215 000 LUF/year, the tax is equal 202 308 (tax for a class 1a taxpayer with an income tax equal 1 214 000 LUF/year) plus $((\text{taxable income} - 1\ 214\ 000)) * 0.46$.

For lower income families, an adjustment on tax is made. Class 1 taxpayers do not pay income tax if the adjusted taxable income is less than 360 000 LUF/year. Class 1a and Class 2 taxpayers do not pay income tax if the adjusted income is less than 640 000 LUF/year.

If tax less than 300 LUF then no tax payable.

2.2.3.3 Tax credit for dependent children (lu_it_ch_tcred)

A tax credit of 48 000 LUF/year is accorded for dependent children. This tax credit is multiplied by the number of dependent children.

2.2.3.4 Additional tax to cover "Unemployment Insurance" (lu_it_unemp_tax)

An additional 2,5% of the tax payable is added as a contribution to the unemployment fund.

3. DATA

3.1 General description

The data used are from the 1999 wave (data collected for the calendar year 1998) of the Panel Socio Economique Liewen zu Lëtzebuerg (PSELL 2) collected by CEPS/Instead.

PSELL 2 provides a picture of the living conditions of individuals and private households in Luxembourg. The data collected cover the main aspects of the life of the country's population, i.e. income, precariousness, debts, housing conditions, household appliances and composition, main expenditure, children's schooling, socio-professional status of adults, etc.

All household members aged 16 or over and out from the education fill out an : "adult questionnaire".

All household members aged 15 or less or aged 16 or over but in education fill out a basic questionnaire different from the 'adult' questionnaire : "child questionnaire".

PSELL also serves the Luxemburg part of the European Community Household Panel Survey.

3.2 Sample selection, weighting

The initial sample for PSELL 2 (1995, data collected for 1994) was selected from an exhaustive population of "main income earners" as shown by the file held by the Inspection Générale de la Sécurité Sociale [Social security general inspectorate] and yields 154 534 main earners. These include individuals at work, pensioners and children receiving an orphan's pension.

The "main income earners" are merely selection units that lead to observation units, i.e. households and household members.

For the first year (1995, data collected for 1994), the sample comprises 5 713 randomly selected "main income earners" (each unit has equal probability of being selected, probability being greater than 0 and with no bias).

Each income earner leads us to an address. Each address corresponds to a household. The 5 713 income earners thus give us 5 713 households.

These 5 713 households form a sample that is distributed as follows:

- 2 978 surveys conducted (52.1 %)
- 269 "outside field" (deceased, left the country, collective households) (4.7 %)
- 2 466 "unsuccessful" (refused to co-operate, never at home, wrong addresses) (43.2 %).

Because of the high rate of immigrants in Luxembourg, each two year a sample of 'new immigrants' is added to the original sample. This persons, like the persons who joint a household after the first wave, are not longitudinal but cross-sectional members.

The sample size in 1999 (data collected from 1998) is :

- 2 554 households
- 6 605 persons.

Households with persons with missing information have been deleted from the 1999 wave. Households arrived in Luxembourg during the 1998 year are also deleted from the 1999 wave.

For EUROMOD, the sample size is :

- 2 539 households
- 6 566 persons.

The weights are household weight. These weights have been calculated as the average of person weights within each household. The person weights aim at correct for selective non-response and panel attrition. The weight sample should be representative in the dimensions : age, sex, activity status.

3.3 Net to gross conversion

The income variables available in PSELL are net income. The conversion from net to gross has be done by the Cambridge team, having run the tax rules and insurance contributions rules.

3.4 Updating factors

Due to the fact that the Luxemburg data correspondent to the year chosen for the micro-simulation, no updating factors are necessary.

4. VALIDATION OF AGGREGATES

In this section we compare the results from EUROMOD baseline run with national statistics, in order to validate the aggregates produced by EUROMOD.

First, we must remind the reader to the specificity of Luxembourg, which were underlined in the introduction of this report . Around 30 % (in 1998) of workers in Luxembourg are not living in the country. We call them border workers (living in France, Belgium or Germany). They are taxed on their professional income and pay social contributions in Luxembourg. Next to the taxes they pay, they receive child benefits, new school year allowance and education allowance if they are eligible. So they represent a certain weight in the tax-benefit system but are not represented in EUROMOD because the database is only composed by a representative sample of persons living in Luxembourg.

Usually the statistics produced by the different administrations do not distinguish the residents and the non-residents. Some extrapolations have been made to calculate the part of the different taxes and benefits allowed to the residents.

4.1 Income taxes

Statistics on income tax are very rare in Luxembourg. After an estimation of the income tax paid by the residents (rough estimation), we must conclude that EUROMOD overestimates the amount of income tax. This overestimation could be explained :

- on one hand by the fact that EUROMOD does not simulate all the tax-exemptions and deductions (gifts of charity, special expenses)
- and on the other hand by the flat minimum allowance usually chosen instead the real expenses for the different deductions (they are not known in the database).

No information is available on the number of fiscal households which pay income tax.

<i>Total amounts</i>	EUROMOD	External Source (1)
Income tax	45 530 736 227 LUF/year	<p style="text-align: right;">36 986 000 000 LUF/year (withholding tax corresponding to the tax year 1998) + around 10 108 000 000 LUF/year (income tax by assessment way collected in 1999 – correspond not exactly to the taxable year 1998) = 47 094 000 000 LUF/year To add : solidarity tax 2.5 % of the income tax = 48 271 350 000 LUF/year This amount include the taxes paid by the border workers (essentially withholding tax).</p> <p>No information is available on the amount of the income tax paid by the border workers. We know that they represents 30 % of the workers in 1998, that theirs salaries are a bit lower than the salaries of the residents but no information (until now) is available on the family situation of these border workers. The family situation (married, single, number of children) is important to define the tax class, one of the element for the calculation of the income tax. Taking into account this lack of information, the estimation of the income tax paid by the border workers is rough. Our estimation of the income tax paid by the border workers is around : 7 000 000 000 LUF/ year.</p> <p style="text-align: right;">So the amount found by EUROMOD could be carefully compared with this amount :</p> <p style="text-align: right;">41 271 350 000 LUF/year</p>

(1) Source : Table page 73, page 75, page 79 in Ministère des Finances du Grand-Duché de Luxembourg Rapport d'activité 1999

Concerning the number of taxable households no comparisons could be made. No external source is available.

4.2 Social contributions

4.2.1 Health social contributions

EUROMOD simulated quite good the *health social contributions* (94,5 % of the external source). The external source includes health insurance from voluntaries, not simulated in EUROMOD. One other thing : the number of health social contributions from self-employed are underestimated in EUROMOD.

<i>Total amounts</i>	EUROMOD	External Source (1)
Health social contribution (employees)	7 914 359 849 LUF/year	23 264 016 000 LUF/year (border workers included)
Health social contribution (self –employed)	782 409 925 LUF/year	Estimation without border workers :
Health social contribution (employer)	8 235 617 870 LUF/year	17 913 280 000 LUF/year

(1) Source : Table 2.1.1 page 129 in *Rapport Général de la Sécurité Sociale, 1998, Ministère de la Sécurité sociale, Inspection Générale de la Sécurité Sociale*

<i>Number of affiliated</i>	EUROMOD	Unit	External source (1)
Health social contribution (employees)	228 658	individuals	232 596 (including 4 000 voluntaries)
Health social contribution (self –employed)	11 106	Individuals	16 482
Health social contribution (employer)	228 658	individuals	228 596

(1) Source : Table 1.1.2 page 123, Table 1.1.4 page 124, Table 1.2.5 page 128 in *Rapport Général de la Sécurité Sociale, 1998, Ministère de la Sécurité sociale, Inspection Générale de la Sécurité Sociale*

4.2.2 Pension social contributions

Concerning the *pension social contributions*, EUROMOD simulated quite good the pension social contributions, the revenue as well as the affiliated.

<i>Total amounts</i>	EUROMOD	External source(1)
Pension social contribution (employees)	15 230 311 358 LUF/year	40 680 000 000 (general system)+ 6 331 000 000 (statutory system) = 47 011 000 000 LUF/year (borders worker included)
Pension social contribution (self –employed)	2 349 540 069 LUF/year	Estimation without border workers :
Pension social contribution (employer)	16 157 230 244 LUF/year	33 999 340 000 LUF/year

(1) Source : Table 3.2 page 246 and Table 1.12 page 204 in *Rapport Général de la Sécurité Sociale, 1998, Ministère de la Sécurité sociale, Inspection Générale de la Sécurité Sociale*

<i>Number of affiliated</i>	EUROMOD	Unit	External source (1)
Pension social contribution (employees)	157 220	Individuals	223 387(general system) +20 254 (statutory system) = 243 541 (borders worker included)
Pension social contribution (self –employed)	13 429	Individuals	Estimation without border workers :
Pension social contribution (employer)	157 220	Individuals	170 478 157 578

(1) Source : Table 1 page 189 and Table 1.8 page 200 in Rapport Général de la Sécurité Sociale, 1998, Ministère de la Sécurité sociale, Inspection Générale de la Sécurité Sociale

4.2.3 Accident social contributions

EUROMOD overestimates the accident social contributions. In fact, the simulation of this social contribution is quite rough. The diversity of the rates to apply couldn't be done with exactitude in EUROMOD.

Total amounts	EUROMOD	External source(1)
Accident social contribution (self-employed)	326 480 128 LUF/year	3 755 000 000 LUF/year (border workers included)
Accident social contribution (employer)	2 797 460 975 LUF/year	Estimation without border workers 2 816 250 000 LUF/year

(1) Source : Tableau 4 page 76 in Rapport Général de la Sécurité Sociale, 1998, Ministère de la Sécurité sociale, Inspection Générale de la Sécurité Sociale

4.2.4 Family social contributions

EUROMOD underestimates the family social contributions. The main explanation of this underestimation is that the self-employed (the only one who have to pay this social contribution) are underestimated in the database.

Total amounts	EUROMOD	External source(1)
Family social contribution (self-employed)	95 610 162 LUF/year	164 247 899 LUF/year

(1) Source : Tableau 4.2 page 300 in Rapport Général de la Sécurité Sociale, 1998, Ministère de la Sécurité sociale, Inspection Générale de la Sécurité Sociale

4.3 Benefits and benefits recipients

- Maternity allowance

EUROMOD overestimates the costs of the *maternity allowance* as well as the number of recipients. This overestimation is probably due to the fact that this benefits depends on the income received or not by the mother when the child is born. This precisions are not available in the database, the yearly average income is only available in EUROMOD.

- Prenatal-; Postnatal-; and Child Birth Allowance

EUROMOD underestimates the costs (14 %) and the recipients of this allowance (17 %). This underestimation is explained by the underestimation of newborn children in the database.

- Handicapped child benefit

EUROMOD underestimates the costs and the recipients of this benefit. This underestimation could be explained by the fact of an important proportion of recipients live in Institution, so they are not included in the database used for EUROMOD.

- Education allowance

EUROMOD estimates quite well the costs while the number of recipients is overestimated.

- New school year allowance

EUROMOD estimates well the costs of the benefits. Nevertheless, EUROMOD overestimates the number of recipients.

- Child benefits

EURMOD simulates well the costs and the number of recipients.

<i>Total amounts</i>	EUROMOD (LUF/year)	External source (LUF/year)	Source
Maternity allowance	291 175 140	215 075 269	(1) Table 4.3 page 301
Prenatal-; postnatal-; and child birth allowance	273 521 811	316 889 303	(1) Table 4.3 page 301
Handicapped child benefit	30 558 706	78 073 113 (border workers included) Estimation without border workers : 54 651 100	(1) Table 4.3 page 301
Education allowance	1 959 429 445	2 005 830 559 (border workers included) Estimation without border workers : 1 939 637 000	(1)Table 4.3 page 301 (2)Table 1.9 page 318 (2)Table 3.7 page 395
New school year allowance	575 063 410	857 193 005 (border workers included) Estimation without border workers : 647 180 718	(1)Table 4.3 page 301 (2)Table 3.5 page 394
Child benefit	8 680 297 382	11 894 033 566 (border workers included) Estimation without border workers : 8 979 995 342	(1) Table 4.3 page 301 (2) Table 3.5 page 394 (1999)

(1) *Rapport Général de la Sécurité Sociale, 1998, Ministère de la Sécurité sociale, Inspection Générale de la Sécurité Sociale*

(2) *Rapport Général de la Sécurité Sociale, 1999, Ministère de la Sécurité sociale, Inspection Générale de la Sécurité Sociale*

<i>Number of recipients</i>	EUROMOD	Unit	External source	Source
Maternity allowance	2 764	Families Households	2 094	(1) Table 1.10 page 294
Prenatal-; postnatal-; and Child birth allowance	8 925	Families Households	10 717	(1) Table 1.10 page 294
Handicapped child benefit	582	Families Households	891	(1) Table 1.6 page 292
Education allowance	10 533	Families Households	9 824 (border workers included) Estimation without border	(1) Table 1.9 page 294 (2) Table 3.7 page 395

			workers : 9 544	
New school year allowance	45 199	Families Households	53 755 (border workers included) Estimation without border workers : 40 300	(1) Table 4.3 page 301 (1) Table 3.5 page 354
Child benefit	60 011	Families Households	80 075 (border workers included) Estimation without border workers : 60 030	(1) Table 4.3 page 301

(1) *Rapport Général de la Sécurité Sociale, 1998, Ministère de la Sécurité sociale, Inspection Générale de la Sécurité Sociale*

(2) *Rapport Général de la Sécurité Sociale, 1999, Ministère de la Sécurité sociale, Inspection Générale de la Sécurité Sociale*

- Seriously dependent persons benefit (allocations de soins et allocation spéciale pour personnes gravement handicapées)

EUROMOD underestimates seriously this benefit. Different reasons could be presented to explain this underestimation. The application for this benefit is examined case by case by the administration and a medical certificate must be jointed to the application. The information available in the EUROMOD database is relatively poor to simulate correctly this benefit.

Total amounts	EUROMOD (LUF/year)	External source (LUF/year)	Source
Seriously dependent persons benefit	206 453 179	474 816 640 + 413 400 000 = 888 216 640	(1)Table 17 page 320

(1)*Rapport Général de la Sécurité Sociale, 1998, Ministère de la Sécurité sociale, Inspection Générale de la Sécurité Sociale*

Number of recipients	EUROMOD	Unit	External source	Source
Seriously dependent persons benefit	1 186	Families Households	2 922 + 2 272 = 5 194 individuals	(1) Table 15 page 319 and table 16 page 320

(1)*Rapport Général de la Sécurité Sociale, 1998, Ministère de la Sécurité sociale, Inspection Générale de la Sécurité Sociale*

- Social assistance

EUROMOD underestimates the costs of social assistance but overestimates the number of recipients. The underestimation of the costs of social assistance could be explained by the under-representation of low income families in the database. In the same time the overestimation of the number of recipients could be explained by the non take-up of the social assistance (the average amount of the social assistance in EUROMOD is twice less than in the official statistics, a lot of recipients receive a very low amount in EUROMOD).

<i>Total amounts</i>	EUROMOD (LUF/year)	External source (LUF/year)	Source
Social assistance (RMG)	1 363 865 795	2 080 217 145	(1) Tableau 20 page 323
House benefit (related to RMG)	146 988 479		

(1) *Rapport Général de la Sécurité Sociale, 1998, Ministère de la Sécurité sociale, Inspection Générale de la Sécurité Sociale*

<i>Number of recipients</i>	EUROMOD	Unit	External source	Source
Social assistance (RMG)	8 636	Families Households	5 272	(1) Tableau 1 page 312
House benefit (related to RMG)	3 046	Families Households	No information	

(1) *Rapport Général de la Sécurité Sociale, 1998, Ministère de la Sécurité sociale, Inspection Générale de la Sécurité Sociale*

4.4 Poverty incidence

The only national source to compare the poverty incidence of the EUROMOD baseline run for 1998 is the PSELL (Panel Socio-Economique Liewen zu Lëtzebuerg), the panel from whom the Luxembourg part of EUROMOD is built. Nevertheless, the comparison is interesting in the sense that the disposable net income (aggregation of around 40 different sources of income) of the PSELL is given during the interviews while EUROMOD has recalculated this disposable net income going from gross income to net income and has simulated a lot of benefits.

<i>Monetary poverty indicators</i>	EUROMOD	Unit	External source
GINI coefficient	0.2560	Individuals	0.2698
Poverty rate (below 60 % of the median equivalised household income)	10,9 %	households	12,7 %
Poverty rate (below 60 % of the median equivalised household income)	11,8 %	individuals	12,6 %
Poverty rate (below 50 % of the median equivalised household income)	3,5 %	households	5,8 %
Poverty rate (below 50 % of the median equivalised household income)	4,1 %	individuals	6,0 %
Quantile point of the monthly equivalised household income (in LUF)	Quantile point 1: 41846 Quantile point 2: 49 681 Quantile point 3: 56 893 Quantile point 4: 64 380 Quantile point 5: 72 264 Quantile point 6: 81 092 Quantile point 7: 91 573 Quantile point 8: 105 516 Quantile point 9: 129 329	households	Quantile point 1: 41 767 Quantile point 2: 50 667 Quantile point 3: 58 473 Quantile point 4: 66 363 Quantile point 5: 73 945 Quantile point 6: 83 333 Quantile point 7: 94 667 Quantile point 8: 110 555 Quantile point 9: 137 583

Regarding the Gini coefficient, the poverty rates and the quantile points, EUROMOD baseline run shows a bit more concentrated distribution of the equivalised income than the one of the PSELL.