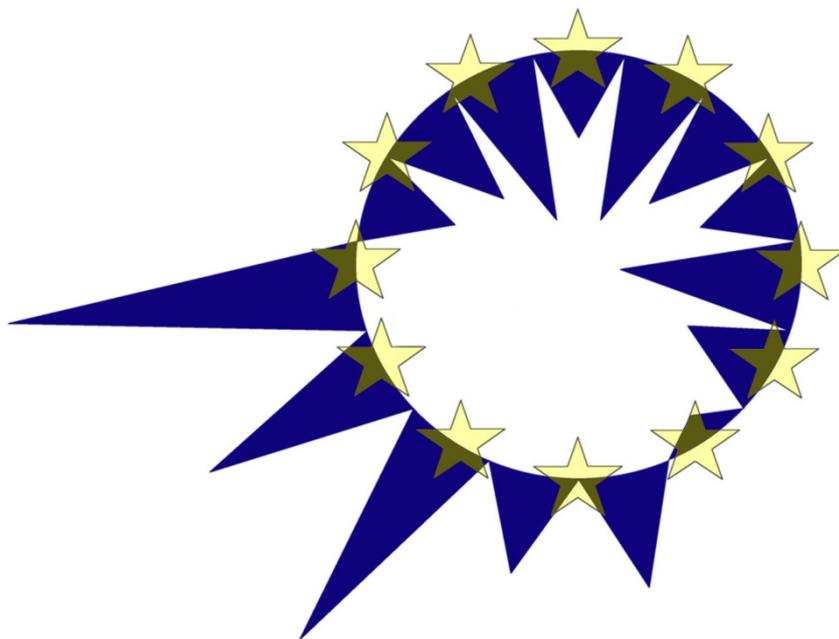


EUROMOD

COUNTRY REPORT



SWEDEN (SE)

2009-2012

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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 Sweden. 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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This report accompanies the release of EUROMOD G1.0. There may be minor differences between the results presented here and those obtained with G1.0 due to further improvements since the report was prepared.

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

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This programme is managed by the Directorate-General for Employment, Social Affairs and Inclusion 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.



CONTENTS

1.	BASIC INFORMATION	5
1.1	Basic figures	5
1.2	The tax-benefit system	5
1.5.1	Basic information about the tax-benefit system	6
1.3	Social Benefits	6
1.3.1	Simulated Social Benefits.	6
1.3.2	Non simulated social benefits	7
1.4	Social contributions	11
1.5	Taxes	12
1.5.1	Simulated taxes	13
1.5.2	Non simulated taxes	13
2.	SIMULATION OF TAXES AND BENEFITS IN EUROMOD	14
2.1	Scope of simulation	14
2.2	Simulated policies and order of simulation	15
2.2.1	Order of simulation	15
Social benefits		16
2.2.2	Unemployment insurance benefit	16
2.2.3	Child benefit (bch_s)	17
2.2.4	Housing allowance (bho_s)	18
2.2.5	Housing allowance for pensioners (bhope_s)	20
2.2.6	Social assistance (bsa_s)	22
2.3	Social contributions	24
2.3.1	Employee social contributions (tscee_s)	24
2.3.2	Employer social contributions (ils_sicer)	24
2.3.3	Self-employed social contributions (ils_sicse)	26
2.4	Personal income tax	26
2.4.1	Tax unit	26
2.4.2	Exemptions	27
2.4.3	Taxable income	27
2.4.4	Tax allowance	27
2.4.4.1	Allowance for voluntary Private Pension contributions (tintapv_s).	27
2.4.5	Tax base	28
2.4.6	Tax schedule	29
2.4.7	Tax credits	29
2.5	Other taxes	32
2.5.1	Tax on capital income	32
3	DATA	32
3.1	General description	32
3.2	Sample quality and weights	32



3.2.1	Sample size and non-response	32
3.2.2	Weights	32
3.2.3	Item non-response and under-reporting	33
3.3	Imputations, data adjustment and assumptions	33
3.3.1	Time period	33
3.3.2	Gross incomes	33
3.3.3	Imputed variables	33
3.4	Updating	34
4	VALIDATION	34
4.2	Aggregate Validation	34
4.2.1	Non simulated taxes and benefits	35
4.2.2	Simulated income tax	40
4.2.3	Simulated social contributions	44
4.2.4	Simulated social benefits	49
4.3	Income distribution	53
4.3.1	Poverty	53
4.3.2	Income inequality	54
4.4	Summary of “health warnings”	56
5	REFERENCES	56



1. BASIC INFORMATION

1.1 Basic figures

Table 1. Basic figures

	Pop. (m.)	pop. < 18 (%)	pop. ≥ 65 (%)	Life expect. (years) W/M	Fertility rate	Unemp rate 15-74 years	GDP per head (PPP)	Currency Name	exch. rate ^[1]
2009	9.341	20.6	18.1	83.4/79.4	1.94	8.3%	28,100	SEK	10.81
2010	9.416	20.4	18.5	83.5/79.5	1.99	8.4%	30,300	SEK	9.52
2011	9.483	20.2	18.8	83.7/79.8	1.90	7.5%	31,700	SEK	9.10
2012	n/a	n/a	n/a	n/a	n/a	n/a	n/a	SEK	8.76

^[1] Euro exchange rate on 30th of June

Source: Eurostat, on-line database, last accessed February 2011.

1.2 The tax-benefit system

Table 2. Tax-benefit system and government budget

	Total general government revenue ^[1] % of GDP	Total tax receipts ^[1] % of GDP	Total general government expenditure ^[1] % of GDP	Social protection ^[2] % of GDP
2009	54.0	46.5	54.9	32.0
2010	52.5	45.5	52.5	30.5
2011	51.5	44.4	51.3	n/a
2012	51.0	44.2	51.1	n/a

Source:^[1] Statistics Sweden and Ministry of Finance ^[2] Statistics Sweden (ESSPROS 2011)

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

	Sickness/ health care	Disability	Old age	Survivors	Family/ Children	Unemployment	Housing	Social exclusion
2009	25.3	14.6	40.2	1.9	10.1	4.1	1.6	2.2
2010	24.9	14.3	40.2	1.6	10.3	4.7	1.6	2.3
2011	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2012	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: Statistics Sweden (ESSPROS 2011)



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

	Direct taxes on households	Direct taxes on business	Social security contributions		Taxes on goods and services	Capital tax and transfers receipt
			Employers	Self employed		
2009	35.7	6.4	17.0	0.3	40.5	0.0
2010	34.8	7.5	17.7	0.3	39.7	0.0
2011	34.4	7.7	15.5	0.4	41.9	0.0
2012	34.6	7.2	15.5	0.4	42.3	0.0

Source: National accounts Statistics Sweden, Ministry of Finance calculated 2012-09-20, Statistics Sweden

1.5.1 Basic information about the tax-benefit system

- The tax-benefit system is largely a unified, national system.¹ Income tax is paid to the state, municipalities and county councils. Tax rates for the municipalities and county councils vary.
- The tax system generally changes in January each year. Main benefit changes happen at the same time, but may also be implemented in July or. Both taxes and benefits can at rare occasions be changed at any month during the year.
- State pension age is flexible and varies from 61-67 years of age. 65 is the most common pensioning age.
- Minimum school leaving age is 16; dependent children are defined as aged under 16 or under 20 and in full-time upper secondary education.
- The income tax system is an individual system, with the spouses being assessed independently. Wealth tax is taxed jointly if married or cohabiting with common children, regardless of the children's age.
- The means-tested benefit system assesses entitlement according to benefit unit income. The benefit unit is the nuclear family - the couple (cohabiting or married) or single adult plus any dependent children.
- Social contributions and state benefits and pensions are usually assessed and delivered on a monthly basis. Amounts are referred to in monthly terms. The exception is income tax, where liability is based on annual income and allowances and thresholds are referred to in annual terms. Incomes related to means tested systems are often defined in annual terms.
- Income tax withholdings are collected on a cumulative basis, i.e., the system tries to ensure withholding the exact amount due in the financial year. Most people however have to fill in an income tax return, which however can be very simple when the amounts are known by the tax authority. Wages and interests are normally preprinted on the income tax return.

1.3 Social Benefits

1.3.1 Simulated Social Benefits.

Child benefit (*Barnbidrag*) is received for each child until 16 years. Child 2, 3 etc gets extra benefit. If the child is in primary school, the child benefit is prolonged. If the child is in secondary school, he/she can get financial help during 10 months/ a year until 20 years of age with the same amount as the child benefit. The benefit is not taxable

¹ The way it operates in practice may vary across regions and by other characteristics.



Housing allowance (Bostadsbidrag) can be given to families with children and to single and married/cohabiting families where all family members are 18-29 years old without children. The maximum allowance depends on the number of children and the housing cost (within certain limits). If the size of the dwelling exceeds a certain m², the accepted housing cost is proportionally reduced to match the maximum accepted m²

Housing allowance for pensioners (Bostadstillägg , BT) can be given to old age pensioners and persons with disability pension. It is considered to be a part of the pension system. From the age of 65 you can get age allowance and for younger persons you can get disability allowance. The benefit is not taxable.

Social assistance (Ekonomiskt bistånd) is the ultimate and last part of the social safety net. It can be paid out when nothing else is enough. It can be paid out if the family has temporary financial problems, or if the disposable income/month is too low. Two important conditions to get social assistance is that the family doesn't have any wealth and is willing to take a job if this is offered. Newly arrived immigrants or refugees often get social assistance. The income limits for getting the benefit are based on the normative costs for a basket of commodities needed to get a reasonable standard of living. The income limits depend on the age of children, single or cohabitant couple, and the number of individuals in the family. Housing costs, and costs for health, dentist, furniture, local commuting, insurance and child care costs are not included in the normative costs. Actual costs are used instead. The benefit is not taxable.

Maintenance support for elderly (Äldreförsörjningsstöd) can be given to old individuals (>= 65 years) if the disposable income is below the limits for reasonable level of living. Normative rules are used for calculating the income. This benefit is valid for e.g. immigrants who don't have earned Swedish pension rights. The benefit is not taxable. The rules are quite similar to Social assistance and hence the Maintenance support will be simulated as part of the Social assistance.

Unemployment insurance benefit (Arbetslöshetsförsäkring) consists of a mandatory part (*basic insurance*) and a *voluntary income related insurance*. Membership of an unemployment insurance fund is voluntary. However, eligibility for unemployment insurance benefits requires membership for 12 months prior to the first day of unemployment. If a person is not a member of unemployment insurance fund the daily allowance is 223 SEK (2009-2012).

1.3.2 Non simulated social benefits

Sickness benefit (Sjukpenning) Sickness insurance provides compensation in the event of sickness that reduces work capacity by at least one-quarter. Sickness benefit is payable for a maximum of one year unless the person on sick leave is suffering from a very serious illness. Sickness benefit is based on the sickness benefit qualifying annual income (SGI). In principle the income is supposed to correspond to the annual income before tax, non-monetary taxable benefits should not be included. The SGI is determined by the Social Insurance Agency. Sick pay is paid by the employer for the first 14 days period and thereafter the Social Insurance Agency pays sickness benefit. No compensation is paid on the first day (the qualifying day). If an individual is unemployed the maximum benefit is the same as the unemployment insurance. The benefit is taxable.

Table 5. Sickness benefit 2009-2012

Income related amount	Lower limit SGI	Upper limit SGI
0.80 * SGI * 0.97	0.24*XBASM	7.5*XBASM

Notes. SGI = Employment and self-employment income. XBASM: price base amount

Parental leave insurance (Föräldraförsäkringen) consists of *parental leave at birth, temporary parental leave at sickness, maternity allowance, and special days for the father.*



Parental leave at birth is the biggest part of the parental leave insurance and which all parents are eligible to. The days can be used from 60 days before the expected birth until the day when the child is 8 year, or has passed the first year at school. Both parents have the right to half of the days, but can give up all days except 60 to the other parent. It is possible to get the benefit full time or part time. The benefit is taxable.

Table 6. **Parental leave insurance 2009-2012**

Day	Basic amount SEK/day	Income related amount	Upper limit SGI
1-180	180	$(0.8 * SGI * 0.97) / 365$	10 * XBASM
181-390	180	$(0.8 * SGI * 0.97) / 365$	10 * XBASM
391-480	180	180	-

Notes. SGI = Employment and self-employment income. XBASM: price base amount

If the parents get twins, 90 extra days are paid out according to the 80 percent rule and 90 days according to the basic level.

For children under the age of 12 (and in certain cases under 16) **temporary parental leave at sickness** can be paid. The benefit can be paid for 60 (+ 60 additional days) working days per year, when a parent needs to stay away from work. Parents of a seriously sick child can get an unlimited number of days until the age of 18. It is possible to get the benefit full time or part time. The benefit is taxable.

Table 7. **Temporary parental leave at sickness 2009-2012**

Days/year	Income related amount	Upper limit SGI
60	$(0.8 * SGI * 0.97) / \text{working days}$	7.5 * XBASM

Notes. SGI = Employment and self-employment income. XBASM: price base amount

If the work conditions make it impossible to work a pregnant woman can apply for **maternity allowance** during maximum 50 days. The benefit rules are the same as for the sickness benefit. The benefit is taxable.

The father has the right to temporary parental benefit for 10 days when the baby is born or adopted. The days have to be used within 60 days after the child's arrival at home. The benefit rules are the same as for the temporary parental leave at sickness.

Special housing allowance for pensioners (SBT, Särskilt Bostadstillägg) can be paid out if the disposable income is low and the housing cost is high. The amounts vary with age/disable pensioner and single/married. The benefit is not taxable.

Old age pension (Ålderspensionen). The mandatory parts of the age-pension are under the process changing from the *old* system (born 1937 or earlier) to the new system which started in the 2003. Pensioners born 1938 or later are gradually subject to a *new* system. From age class 1954 the new system is fully implemented. For age classes 1938-1953 the benefits are partly from the old system and partly from the new system. If born 1953, 1/20 comes from the old system and if born 1938 16/20 comes from the old system.

The old system consists of a supplementary pension and a guarantee pension. The supplementary pension is based on the average of the 15 years with the highest work income. Only incomes up to 7.5



income base amounts/year (7.5*45,900 SEK in 2007) are included. The supplementary pension is indexed with the average salary minus 1.6 percent points.

If the supplementary pension is low, guarantee pension can be achieved. For a single pensioner the maximum guarantee is 2.1814 price basic amounts/year and is reduced with increased supplementary pension. For a married pensioner the maximum is 1.9334 price basic amounts.

In the new system income related pension can be earned during the whole lifetime. 18.5% of the earnings finance the earned pension rights (up to 7.5 income base amounts). 16% are going to public funds, which you cannot handle yourself. 2.5% goes to private funds, where you can decide how it should be composed. Over time the pension funds rise with the average wage in the whole economy. The earliest pensionable age is 61 years, but there is no last pension age, even if traditionally many retire at the age of 65. You also have legal right to work to the month of your 67th birthday. At the age for retirement the pension is determined by the total pension rights divided with the expected number of remaining years to live. After retirement the pension is indexed with the average salary minus 1.6 percent points.

If the income related income is too low, guarantee pension can be achieved from the age of 65. The maximum value is 2.13 price base amounts for unmarried and 1.90 for married people.

Both in the old and new system, not only earnings but also insurance benefits like sickness, unemployment and parental leave benefits give pension rights.

In the new system you also get pension rights when studying, doing military (duty) service or take care of small children (up to 4 years of age).

In addition to the mandatory pension most employees have *occupational pensions*, with different rules for different sectors of the labour market. Typically the employers pay a fee between about 3,5% and 4.5% of the salary. For all contracting parties, except private and cooperative workers, the employers also give an extra compensation for income shares above the income ceiling for the mandatory pensions.

All pensions are taxable. It is possible to retire full time or part time.

Disability pension (Sjukersättning/aktivitetsersättning). If disabled or so sick or so injured, that you cannot work any longer, you can get disability pension in the form of *sjukersättning* (if aged 30-64) or *aktivitetsersättning* (if aged 19- 29). The benefit is taxable.

Sjukersättning (aged 30-64). It is possible to get the benefit for a limited time or not. The benefit can be income related or a guarantee benefit. The income related benefit is based on an expected income, as if the ability to work had not decreased. The assumed forecasted income is based on the average of the 3 highest annual incomes within a number of years before the person became sick. The number of years depends of the age of the person.

Aktivitetsersättning (aged 19-29 years). They can only get time-limited benefit. The assumed income can be based on the 2 highest annual incomes if that gives a higher assumed income.



Table 8. Activity/sickness compensation

Condition	Income related amount	Reserved amount (ydg01_s) Lower limit	Upper limit
age <= 20	0.64 * assumed income	2.1*XBASM	7.5*XBASM
20 < age <= 22	0.64 * assumed income	2.15*XBASM	7.5*XBASM
22 < age <= 24	0.64 * assumed income	2.2*XBASM	7.5*XBASM
24 < age <= 26	0.64 * assumed income	2.25*XBASM	7.5*XBASM
26 < age <= 28	0.64 * assumed income	2.3*XBASM	7.5*XBASM
28 < age <= 29	0.64 * assumed income	2.35*XBASM	7.5*XBASM
29 < age <= 64	0.64 * assumed income	2.4*XBASM	7.5*XBASM

Notes. XBASM: price base amount

- *Scope and scale*

Table 9. Social benefits: recipients (as % of population)

	2009	2010	2011	2012
Child benefit	17.9	17.8	n/a	n/a
Housing allowance	6.0	6.0	n/a	n/a
Housing allowance pensioners (> 65)	2.9	2.9	n/a	n/a
Housing allowance pensioners (<= 65)	2.1	1.9	n/a	n/a
Social assistance	4.1	4.3	n/a	n/a
Maintenance support for elderly	0.2	0.2	n/a	n/a
Unemployment benefit	5.1	5.8	n/a	n/a
- Income related				
- Basic amount				
- Labour market education				
Sickness benefit	5.3	5.1	n/a	n/a
Rehabilitations benefit	0.3	0.1	n/a	n/a
Parental leave at birth	7.1	7.5	n/a	n/a
Temporary parental leave at sickness	7.5	7.6	n/a	n/a
Old age pension				
- Guarantee pension	7.4	7.4	n/a	n/a
- Supplementary pension (old system)	17.5	17.9	n/a	n/a
- Income pension (new system)	7.6	8.8	n/a	n/a
- Premium pensions (new system)	6.8	7.9	n/a	n/a
Disability pension				
- Sjukersättning (30-64)	5.4	4.9	n/a	n/a
- Aktivitetsersättning (<30)	0.3	0.3	n/a	n/a
Maintenance	2.4	2.3	n/a	n/a
Work injury life annuity	0.7	0.7	n/a	n/a
Study support upper secondary school	5.2	5.1	n/a	n/a
Study allowances	4.7	4.9	n/a	n/a
Grants for upper secondary school	0.0	0.0	n/a	n/a

Source: Statistics Sweden (2010)



Table 10. Social benefit: expenditure (as % of total expenditure)

	2009	2010	2011	2012
Child benefit	5.3	5.4	n/a	n/a
Housing allowance	0.8	0.8	n/a	n/a
Housing allowance pensioners(> 65)	1.5	1.5	n/a	n/a
Housing allowance pensioners (<= 65)	1.0	1.0	n/a	n/a
Social assistance	2.5	2.6	n/a	n/a
- Introduction support	0.4	0.3	n/a	n/a
- Social assistance	2.1	2.3	n/a	n/a
Maintenance support for elderly	0.1	0.1	n/a	n/a
Unemployment benefit	6.6	7.4	n/a	n/a
- Income related				
- Basic amount				
- Labour market education				
Sickness benefit	4.1	3.6	n/a	n/a
Rehabilitations benefit	0.3	0.2	n/a	n/a
Parental leave at birth	5.2	5.5	n/a	n/a
Temporary parental leave at sickness	1.0	1.0	n/a	n/a
Old age pension				
- Guarantee pension	4.0	3.8	n/a	n/a
- Supplementary pension(old system)	40.9	39.7	n/a	n/a
- Income pension (new system)	6.8	8.4	n/a	n/a
- Premium pensions (new system)	0.2	0.3	n/a	n/a
Disability pension				
- Sjukersättning (30-64)	11.9	10.4	n/a	n/a
- Aktivitetsersättning (<30)	0.6	0.5	n/a	n/a
Maintenance	0.8	0.8	n/a	n/a
Work injury life annuity	0.9	0.8	n/a	n/a
Study support upper secondary school	0.9	0.9	n/a	n/a
Study allowances				
- Loans	2.6	2.8	n/a	n/a
-Grants	2.1	2.2	n/a	n/a
Grants for upper secondary school	0.0	0.0	n/a	n/a

Source: Statistics Sweden (2010)

1.4 Social contributions

Social contributions refer to health insurance, parental insurance, occupational injuries, old age pension, survivors pension, labour market, general wage fee and a special wage tax (for persons older than 65 years).

Employees pay a general social security contribution, around 7.0 % of the gross salary.

The employer pays social contributions as a proportion of the gross salary. Mostly they are treated together, summing up at almost 33%. Farmers and self-employed also pay social contributions but as proportion of the net income. The special wage tax is paid for employees aged 66 or older. The other fees are paid for employees aged 65 or less.



- *Scope and scale*

Table 11. Social contributions: contributors (as % of population)

	2009	2010	2011	2012
Social contributions paid by employer				
Health insurance	51.3	50.9	n/a	n/a
Parental insurance	51.3	50.9	n/a	n/a
Occupational injuries	48.6	50.9	n/a	n/a
Old age pension	52.7	52.6	n/a	n/a
Survivors pension	51.3	50.9	n/a	n/a
Labour market	51.3	50.9	n/a	n/a
General wage fee	51.3	50.9	n/a	n/a
Special wage tax	0	0	n/a	n/a
Health insurance	3.2	3.1	n/a	n/a
Parental insurance	3.2	3.1	n/a	n/a
Occupational injuries	3.2	3.1	n/a	n/a
Old age pension	3.5	3.5	n/a	n/a
Survivors pension	3.2	3.1	n/a	n/a
Labour market	3.2	3.1	n/a	n/a
General wage fee	3.2	3.1	n/a	n/a
Special wage tax	0.4	0.3	n/a	n/a

Source: Own calculations using the STAR-register (Statistics Sweden)

Table 12. Social contributions: as % of total revenue

	2009	2010	2011	2012
Social contributions paid by employer				
Health insurance	19.5	17.9	n/a	n/a
Parental insurance	6.4	6.6	n/a	n/a
Occupational injuries	2.0	2.0	n/a	n/a
Old age pension	32.0	33.1	n/a	n/a
Survivors pension	4.9	5.1	n/a	n/a
Labour market	7.0	13.9	n/a	n/a
General wage fee	21.6	18.0	n/a	n/a
Social contributions paid by self-employed				
Health insurance	0.6	0.4	n/a	n/a
Parental insurance	0.2	0.2	n/a	n/a
Occupational injuries	0.1	0.1	n/a	n/a
Old age pension	1.0	1.1	n/a	n/a
Survivors pension	0.2	0.2	n/a	n/a
Labour market	0.0	0.1	n/a	n/a
General wage fee	0.7	0.6	n/a	n/a

Source: Revenue outcome of the Central Government Budget distributed according to revenue heading 2006-2010.

1.5 Taxes

The Swedish system for direct taxes includes income taxes, capital tax, wealth tax and tax on real estate. The sum of taxes cannot be negative.

Indirect taxes. The VAT is 25 % as the normal level and for some goods i.e. food it is 12 % and there is also some goods i.e. books and newspapers with 6 %. There are also a number of energy related taxes.



1.5.1 Simulated taxes

Income tax (*Inkomstskatt*) is assessed individually. Earnings, insurance benefits like sickness benefit, pensions etc. are included in the tax base. Costs for work to a limited amount and private premiums to a limited amount for retirement are deducted from the tax base. The result is called *assessed income*. From the assessed income the basic allowance is deducted according to a rather complex formula. The result is called *taxable income*, on which the tax schedule is applied. All amounts are expressed in annual terms.

The national income tax is only paid on taxable incomes above a certain amount and there are two tax rates. Local taxes are assessed at Municipality and County level. All municipalities (about 300) and county councils (about 25) have taxation rights. The tax is proportional to the taxable income.

Everybody pays a funeral fee which is used for the care of cemeteries and premises for funeral ceremonies. It is not connected to individual's funerals.

Capital tax (*Kapitalskatt*) is a national individual tax. The tax base consists of capital income and is separate from the national income tax. The general tax rate is 30%, but special rules in specific parts lead to different (lower) tax rates than the general one. If the taxable income is negative this leads to tax reduction on the final tax (sum of local tax and national tax). It is especially common for loans on owned houses.

The tax base consists of interests, cost of interest, interests on bonds, shares, funds etc, capital gains and capital losses on shares, funds, real estate.

1.5.2 Non simulated taxes

- **Wealth tax**

Wealth tax is assessed at the family level. The wealth is defined as the sum of the family's assets minus the debts. The tax is assigned to the family members according to their wealth. The wealth tax cannot be negative. Wealth tax was abolished in 2007.

- **Tax on real estate**

As from 2008 government property tax on dwellings was abolished and replaced by a municipal property charge. The table below describes the types of property mainly concerning private persons. Tax on real estate is included in the SILC data (EUROMOD variable: tpr).

Table 13. **Tax on real estate**

Type of property	Municipal property charge 2009-2012
Municipal property charge 2009-2012	
House/land, 0-5 years	0
House/land, 6-10 years	$\min((0.00375 * \text{assessed value}), (0.00375 * 800,000 * \text{KPIyear}))$
House/land older than 10 years	$\min((0.0075 * \text{assessed value}), (0.0075 * 800,000 * \text{KPIyear}))$

*KPIyear = XBASMI/XBASMI 2008



- *Scope and scale*

Table 14. Taxes: taxpayers (as % of population)

	2009	2010	2011	2012
Direct taxes				
Local income taxes	73.7	72.6	n/a	n/a
National income tax	10.9	11.2	n/a	n/a
Funeral fee	73.7	72.6	n/a	n/a
Capital tax	35.3	32.7	n/a	n/a
Real estate tax	31.9	31.8	n/a	n/a
Wealth tax	0	0	n/a	n/a

Source: Own calculations using the STAR-register (Statistics Sweden)

Table 15. Taxes: annual revenue (millions SEK)

	2009	2010	2011	2012
Direct taxes				
Local income taxes	511,150	522,850	n/a	n/a
National income tax	40,087	42,475	n/a	n/a
Funeral tax	3561	3,611	n/a	n/a
Capital tax	44,544	51,737	n/a	n/a
Real estate tax	11,962	11,983	n/a	n/a
Wealth tax	0	0	n/a	n/a
Indirect taxes				
VAT	301,550	324,409	n/a	n/a
Tax on alcohol and tobacco	22,761	22,720	n/a	n/a
Tax on energy	40,064	41,152	n/a	n/a
Tax on carbondioxid	26,085	27,334	n/a	n/a
Other taxes on environment and energy	4,143	4,665	n/a	n/a
Taxes on traffic	16,376	16,400	n/a	n/a
Other taxes	6,739	4,775	n/a	n/a

Source: http://www.scb.se/Pages/TableAndChart_73227.aspx

2. SIMULATION OF TAXES AND BENEFITS IN EUROMOD

2.1 Scope of simulation

Table 16 and Table 17 show respectively the benefits and taxes and contributions which are included (i.e. not simulated but included using the value recorded in the survey) or simulated in EUROMOD.



Table 16. Simulation of benefits in EUROMOD

	Variable name(s)	Treatment in EUROMOD				Why not fully simulated?
		2009	2010	2011	2012	
Unemployment benefit	bun	I	I	I	I	Lack of info in input data. Simulation of Unemployment benefit is included in order to calculate replacement rates, under assumptions
Parents' allowance	bpl	I	I	I	I	
Sickness benefit	bhl	I	I	I	I	Lack of info in input data.
Education related allowance	bed	I	I	I	I	
Disability benefits	pdi	I	I	I	I	
Old age pensions	poa	I	I	I	I	
Survivors pensions	psu	I	I	I	I	
Child benefit	bch_s	S	S	S	S	
Housing allowance	bho_s	S	S	S	S	
Housing allowance for pensioners	bhope_s	S	S	S	S	
Social Assistance	bsa_s	S	S	S	S	

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

Table 17. Simulation of taxes and social contributions in EUROMOD

	Variable name(s)	Treatment in EUROMOD				Why not fully simulated?
		2009	2010	2011	2012	
Employee social contributions	tscee_s	S	S	S	S	
Employer social contributions	ils_sicer	S	S	S	S	
Self-employed social contributions	ils_sicse	S	S	S	S	
Personal income tax	tin_s	S	S	S	S	
Tax on capital income	tinkt_s	S	S	S	S	
Tax on real estate	tpr	I	I	I	I	Lack of info in input data. This includes repayment of student loan

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; “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

Structural changes

There were no structural changes in the tax benefit system between 2007 and 2012. There are only parameter changes.

2.2 Simulated policies and order of simulation

2.2.1 Order of simulation

Social contributions are simulated first, in order to allow the employee social insurance contributions to be subtracted from the income tax. Then, the income tax is simulated in all its components followed by the tax on capital income. The simulation of the non taxable benefits follow: child benefit, housing allowance and housing allowance for pensioners. The social assistance is the last benefit simulated because it includes all previous simulated benefits and taxes in its means.



Table 18. EUROMOD Spine: order of simulation, 2009-2012

Policy	Description	Main output
ConstDef_se	Definition of constants (i.e. XBASM and XBASMI)	
tscee_se	Employee social contributions	tscee_s
tscer_se	Employer social contributions	ils_sicer
tscse_se	Self-employed social contributions	ils_sicse
tin_se	Personal income tax	tin_s
tinkt_se	Tax on capital income	tinkt_s
bch_se	Child benefit	bch_s
bho_se	Housing allowance	bho_s
bhope_s	Housing allowance for pensioners	bhope_s
bsa_se	Social assistance	bsa_s

In the simulation of the tax benefit system, the price base amount is used repeatedly and in one case also the income base amount. They are defined as “constants” in the policy sheet ConstDef. The price base amount (XBASM) is an amount established by the government for one year at a time and is adjusted annually. It is used for calculations of pensions, sickness benefit and allowances for example. The income base amount (XBASMI) is linked to the “income index” and was introduced in connection with the pension reform. The income index measures the average income change in Sweden.

Table 19. Annual Base amounts

	2009	2010	2011	2012
XBASM	42,800	42,400	42,800	44,000
XBASMI	50,900	51,100	52,100	54,600

Notes. XBASM: price base amount. XBASMI: income base amount

Social benefits

2.2.2 Unemployment insurance benefit

- *Definitions and eligibility conditions*

Unemployment insurance benefit consists of a mandatory part (*basic insurance*) and a *voluntary income related insurance*. Membership of an unemployment insurance fund is voluntary. However, eligibility for unemployment insurance benefits requires membership for 12 months prior to the first day of unemployment. In the recent past, most of the Swedes were members of an unemployment insurance fund (in the simulation, we assume that such an eligibility condition is satisfied). The daily allowance, paid five days a week, is based on the income received the 12 months before the unemployment (the amount received is equal to the basic amount or 80% of previous income with a maximum limit).

If a person is not a member of unemployment insurance fund, instead of the basic amount she receives a daily allowance (5 days per week) equal to 223 SEK (2009-2012).

It is possible to get the benefit full time or part time. No compensation is paid in the first seven days (the qualifying days). The benefit is taxable. Unemployment insurance benefit is currently not simulated in EUROMOD but it will be implemented in the future.



- *Benefit amount*

Table 20. Unemployment benefit amounts – 2009-2012

Days	Basic amount SEK/day	Compensation (as a share of previous income)	Upper limit SEK/day
Year 2009-2012 (parent with child)			
1-200	320	0.8	680
201-450	320	0.7	680
450-	320	0.65	680
Year 2009-2012			
1-200	320	0.8	680
201-300	320	0.7	680
301-	320	0.65	680

2.2.3 Child benefit (bch_s)

- *Definitions and eligibility conditions*

All children, conditional on their age and current education status, living in Sweden receives child benefit.

The assessment unit is the nuclear family (tu_bch_se), including cohabiting partners and children aged below 16 years or until 18 years if in upper secondary school.

Children, who are themselves parents, count as children as well.

- *Benefit amount*

Child benefit basic amount is for each child until 16 years. From the second child on, there is an extra benefit in addition to the basic amount. If the child is student in a lower secondary school (dec =3), the child benefit is prolonged until he completes the primary school. The child benefit is received 12 months a year.

Children aged 16-20 years and studying in upper secondary school (dec= 4) receive the basic amount of the child benefit (i.e. study allowance) 10 months a year. The extra amount is paid 12 months per year.

The benefit is not taxable.

**Table 21. Child benefit monthly amounts – 2009-2012**

Child number	Basic amount	Extra amount	
	2009-2012	2009	2010-2012
1	1,050	0	0
2	1,050	100	150
3	1,050	354	454
4	1,050	860	1010
5	1,050	1,050	1,250
Next child	1,050	1,050	1,250

- *Allocation of the benefit within the family*

The benefit (basic and extra amount) for children until 18 years is paid to the mother if present in the family otherwise to the person the child lives with. The basic amount for children older than 18 years is paid directly to the children. The extra amount (12 months per year) is always received by the parent.

2.2.4 Housing allowance (bho_s)

- *Definitions and eligibility conditions*

Housing allowance can be given to families (tu_bho_se) with children (up to 18 years old, or aged under 20 and receiving the basic amount of child benefit (dec = 4)) and to single and married/cohabiting couples without children where at least one family member is 18-29 years old. The maximum allowance depends on the number of children and the housing cost (within certain limits). If the size of the dwelling exceeds a certain m², the accepted housing cost is proportionally reduced to a minimum value.

In multi-family households, the housing allowance is given only to the main family unit (responsible for the house, i.e. xhc >0).

Housing allowance below 100 SEK/month is not paid out. The benefit is not taxable

- *Income test*

For annual incomes above 58,500 SEK for each parent or 117,000 SEK for lone parents the allowance is reduced by 20%. For a lone youngster the allowance is reduced by 33% for annual incomes above 41,000 SEK and for young couples without children, the reduction is 33% above 58,000 SEK.

The wealth of the family (property excluded) exceeding 100,000 SEK is added to the income by 15 % (afc00_s).

For calculating the housing allowance the following individual income concept for each adult in the family is considered:

Income (il_means_bho) = (Employment income (yem) + fringe benefits (kfb) + Private pensions (ypp) + Unemployment benefits (bun) + Old age pension (poa) + Survivor' pension (psu) + Sickness benefit (bhl) + Disability benefit (pdi) + property income (ypr) + investment income (yiy) + self-employment income (yse) + maintenance payments received (ypt) + 34% of education allowances (bed) + parents' allowance (bpl) + 15% of wealth (afc00_s, divided by two if there are two partners)



Losses due to self-employment are set to 0.

For housing cost the variable *xhc* is used, which is a proxy of the housing cost considered in the assessment of the allowance.

In the system there are limitations on size in m² for the flat; those limitations cannot be simulated.

- ***Benefit amount***

Families with children:

The housing allowance is calculated as the sum of a *special component* for families with children and a *rent component*:

- The special component for families with children (*sin01_s*) is equal to 950 SEK/month for families with one child, 1,325 SEK/month for families with two children and 1,750 SEK/month for families with three or more children.

- The rent component (*sin02_s*) is calculated as follows:

$$\text{Rent component} = (\min(xhc, \text{upper level}) - \text{lower level}) * 0.5$$

according to the lower and upper values reported in the following table:

Table 22. Housing allowance parameters – Families with children – 2009-2011

Number of children	Rent component		Special component
	Lower level SEK/month	Upper level SEK/month	SEK/month
1	2,000	5,300	950
2	2,000	5,900	1,325
3 and more	2,000	6,600	1,750

Table 23. Housing allowance parameters – Families with children – 2012

Number of children	Rent component		Special component
	Lower level SEK/month	Upper level SEK/month	SEK/month
1	1,400	5,300	1,300
2	1,400	5,900	1,750
3 and more	1,400	6,600	2,350

Reduction of the housing allowance

The housing allowance is then reduced following the same rules between 2009 and 2010, which vary according to the typology of the recipient:



- Married or cohabiting partner (the following applies to each partner separately, yearly amounts – sin05_s):

$$\text{Final Housing allowance} = \text{Housing allowance} - 0.20(\max((\text{il_means_bho} - 58,500), 0))$$

- Lone parents (yearly incomes, sin06_s):

$$\text{Final Housing allowance} = \text{Housing allowance} - 0.20(\max((\text{il_means_bho} - 117,000))$$

Young families below the age of 29 without children

The rent component (sin07_s) is calculated as reported in the following table:

Table 24. Housing allowance parameters – Young families – 2009-2011

Housing cost (xhc) SEK / month	Rent component
< 1,800	0
1,800 – 2,600	$(\text{xhc} - 1,800) * 0.75$
2,600 – 3,600	$(2,600 - 1,800) * 0.75 + (3,600 - \text{xhc}) * 0.5$
>= 3,600	$(2,600 - 1,800) * 0.75 + (3,600 - 2,600) * 0.5$

Table 25. Housing allowance parameters – Young families – 2012

Housing cost (xhc) SEK / month	Rent component
< 1,800	0
1,800 – 2,600	$(\text{xhc} - 1,800) * 0.90$
2,600 – 3,600	$(2,600 - 1,800) * 0.90 + (3,600 - \text{xhc}) * 0.65$
>= 3,600	$(2,600 - 1,800) * 0.90 + (3,600 - 2,600) * 0.65$

The housing allowance is then reduced according to the typology of the recipient:

-singles (yearly incomes, sin08_s):

$$\text{Final Housing allowance} = \text{Housing allowance} - 0.33(\max((\text{il_means_bho} - 41,000), 0))$$

-married or cohabiting (the following applies to each partner separately, yearly amount, sin12_s):

$$\text{Final Housing allowance} = \text{Housing allowance} - 0.33(\max((\text{il_means_bho} - 58,000), 0))$$

2.2.5 Housing allowance for pensioners (bhope_s)

• *Definitions and eligibility conditions*

Housing allowance for pensioners can be given to age pensioners or disable pensioners. It is considered to be part of the pension system.



The unit of analysis is the nuclear family (tu_bho_se), including the cohabiting partners and children up to 18 years old, or aged under 20 and receiving the basic amount of child benefit (dec =4). In multi-family households, the housing allowance is given only to the family who is responsible for the house (xhc > 0).

Families with persons older than 65 years or families with persons receiving disability pension (pdi) can receive this allowance (age allowance and disability allowance).

Housing allowance for pensioners below 25 SEK/month is not paid out. The benefit is not taxable.

- **Income test**

The allowance is diminished with the income over certain income limits, which are dependent of the recipients being married or not. Labour income is weighted less than pension income. 15% of the wealth (afc) of the family (divided by two if there are two partners) over 100,000 SEK for single and 200,000 SEK for cohabiting partner is considered as income.

For calculating the housing allowance for pensioners the following individual income concept (“reserved amount”) for each elderly or disabled adult (if a child is living with his parents only the parents can receive the allowance) in the family is calculated for all years 2007-2012 and deducted from the means:

Table 26. Housing allowance for pensioners – Reserved amount – 2009-2012

Condition	Reserved amount (ydg01_s)
pdi > 0 and age <= 20	2.1*XBASM
pdi > 0 and 20 < age <= 22	2.15*XBASM
pdi > 0 and 22 < age <= 24	2.2*XBASM
pdi > 0 and 24 < age <= 26	2.25*XBASM
pdi > 0 and 26 < age <= 28	2.3*XBASM
pdi > 0 and 28 < age <= 29	2.35*XBASM
pdi > 0 and age >= 30	2.4*XBASM
Single, age > 65 and pdi = 0	2.17*XBASM
Married or cohabiting, age > 65 and pdi=0	1.935*XBASM

For 2009 - 2012:

Income (il_means_bhope) = Old age pension (poa) + Disability benefit (pdi) + investment income (yiy) + 0.8*(Private pensions (ypp) + fringe benefits (kfb) + Unemployment benefits (bun) + Sickness benefit (bhl) + Survivor’ pension (psu)) + property income (ypr) + 0.5 * (Employment income (yem) + parents’ allowance (bpl) + self-employment income (yse))+ 0.15*wealth (afc00_s, divided by two if there are two partners) – reserved amount (ydg01_s).

This Income is calculated independently for the male and female partner in the family. If married or cohabiting then Income (sin02_s) = (Income_male + Income_female)/2

- **Benefit amount**

The maximum housing allowance (sin01_s) is calculated as follows per each entitled individual:

For 2009

- persons younger than 66 years and receiving disability pensions: 0.91* min((xhc-bho_s), upper level)



- persons older than 65 years: $0.93 * \min((xhc-bho_s), \text{upper level})$

For 2010-2011

- persons younger than 66 years and receiving disability pensions: $0.93 * \min((xhc-bho_s), \text{upper level})$

- persons older than 65 years: $0.93 * \min((xhc-bho_s), \text{upper level})$

For 2012-

- persons younger than 66 years and receiving disability pensions: $0.93 * \min((xhc-bho_s), \text{upper level})$

- persons older than 65 years: $0.93 * \min((xhc-bho_s), \text{upper level}) + 12 * 170$

Housing costs and Housing allowance are always considered at family level. If it is a cohabiting couple then the maximum allowance is divided by 2 (even in case only one partner is entitled to the allowance because each partner is expected to pay its part of the housing cost).

The upper levels of housing costs are reported in the following table:

Table 27. Housing allowance for pensioners – Housing costs limits – 2009-2012

Year	Upper level housing cost Disability pens. SEK/month	Percent benefit Disability pens.	Upper level housing cost Age pensioners SEK/month	Percent benefit Age pensioners
2009	4,500	91	5,000	93
2010	5,000	93	5,000	93
2011	5,000	93	5,000	93
2012	5,000	93	5,000	93

The housing allowance for pensioners is then calculated for all persons in the family who are entitled (older than 65 or receiving disability benefit) according to the following rules:

Table 28. Housing allowance for pensioners – Amounts – 2009-2012

Condition	Amount
per capita income ($sin02_s$) < XBASM	$\max((\text{Indiv. maximum allowance} - (sin02_s * 0.62)), 0)$
per capita income ($sin02_s$) \geq XBASM	$\max((\text{Indiv. maximum allowance} - (XBASM * 0.62) - ((sin02_s - XBASM) * 0.5)), 0)$

* The maximum housing allowance is calculated at individual level ($sin01_s$).

The total housing allowance for pensioners is given by the sum received by both partners (if entitled)

2.2.6 Social assistance (bsa_s)

- *Definitions and eligibility conditions*

Social assistance is the ultimate and last part of the social safety net. It can be paid out when nothing else is enough. It can be paid out if the family has temporary financial problems, or if the disposable



income/month is too low. Two important conditions to get social assistance are that the family doesn't have any wealth ($afc=0$) and is willing to take a job if offered. Newly arrived immigrants or refugees often get social assistance. The income limits for getting the benefit are based on the normative costs for a basket of commodities needed to get a reasonable standard of living. The income limits depend on the age of children, single or cohabitant couple, and the number of individuals in the family. Housing costs, and costs for health, dentist, furniture, local commuting, insurance and child care costs are not included in the normative costs. Actual costs (xhc) are used instead. Income losses for self-employment income are not considered (i.e. set to 0). The benefit is not taxable.

The unit of analysis is the nuclear family (tu_bho_se), including the cohabiting partners and children up to 18 years old, or aged under 20 and receiving the basic amount of child benefit ($dec=4$). In multi-family households, the social assistance is given to the family who is responsible for the housing cost.

- **Income test**

The family's needs are calculated as common needs plus personal needs depending of the age of the children and if the head of the family is single or not.

For example, a married couple with 2 children aged 4 and 8 years old have the following needs in 2012:

$$1,710 \text{ (Child age 4)} + 2,390 \text{ (child age 8)} + 5,270 \text{ (Married couple)} + 1,480 \text{ (family size=4)}$$

The family's consumption needs are calculated according to the rules reported in the following tables:

Table 29. Personal needs – Monthly amounts (SEK) – 2009-2012

Year \ Age	0	1-2	3	4-6	7-10	11-14	15-18	Single	Married/ cohabiting
2009	1,520	1,710	1,370	1,640	2,100	2,410	2,710	2,800	5,060
2010	1,520	1,710	1,370	1,640	2,100	2,410	2,710	2,800	5,060
2011	1,540	1,730	1,390	1,660	2,130	2,440	2,740	2,830	5,120
2012	1,590	1,780	1,530	1,710	2,390	2,810	3,220	2,920	5,270



Table 30. Common needs – Monthly amounts (SEK) – 2009-2012

Number of family members	1	2	3	4	5	6	7+
2009	880	990	1,240	1,420	1,620	1,850	2,020
2010	880	990	1,240	1,420	1,620	1,850	2,020
2011	890	1,000	1,260	1,440	1,640	1,870	2,040
2012	920	1,030	1,300	1,480	1,690	1,930	2,100

- *Benefit amount*

Final amount of social assistance is given by the following formula:

Personal needs + Common needs + housing cost (xhc) – net income (il_means_bsa)

2.3 Social contributions

2.3.1 Employee social contributions (tscee_s)

All individuals resident in Sweden and born after 1937 with employment income (yem), fringe benefits (kfb), sickness benefit (bhl) or unemployment benefit (bun) larger than 1000 SEK per year have to pay the general social security contributions.

The contribution base is calculated as follows:

- Initial Contribution base = $(yem+kfb+bhl+bun)*12$. This is rounded down to the nearest hundred SEK.
- Final Contribution base = $\min(\text{Initial Contribution base} , 8.07*XBASMI)$. This is rounded down to the nearest hundred SEK.

If the Final Contribution base is larger than $XBASMI * 0.423$, then the Social contribution is 7% of the Final Contribution base. Otherwise no contribution is paid. The Social contribution is then rounded down to the nearest hundred SEK (tscee_s).

2.3.2 Employer social contributions (ils_sicer)

The employer social contributions are based on employment income (yem) and fringe benefits (kfb), if the annual amount is greater than 1,000 SEK.

There are 8 different employer social contributions: health insurance, parental insurance, occupational injuries, old age pension, survivors pension, labour market, general wage fee and a special wage tax(for persons older than 65 years).The rates are specified in the following tables.

Table 31. **Employer social contributions – Persons younger than 66 years old - 2009-2012**

	2009	2010	2011	2012
Health insurance (tscersi_s)	0.0671	0.0595	0.0502	0.0502
Old age pension (tscerpi_s)	0.1021	0.1021	0.1021	0.1021
Survivors pension (tscerci_s)	0.0170	0.0170	0.0117	0.0117
Occupational injuries (tscerac_s)	0.0068	0.0068	0.0068	0.0030
Labour market (tscerir_s)	0.0243	0.0465	0.0291	0.0291
General wage fee (tscerot_s)	0.0749	0.0603	0.0923	0.0921
Parental insurance (tscerml_s)	0.0220	0.0220	0.0220	0.0260

Since 2007 there is a reduction of the employer social contributions (except old age pension) for persons younger than 26 years old.

Table 32. **Reduction of Employer social contributions except Retirement benefit programme – Persons younger than 26 years old - 2009-2012**

	2009	2010	2011	2012
Reduction (tscerrd_s)	0.75	0.75	0.75	0.75

Table 33. **Employer social contributions – Persons older than 65 years old and born before 1938 - 2006-2009**

	2007	2008	2009	2010	2011	2012
Special wage tax (tscerot_s)	0.2426	0	0	0	0	0

Table 34. **Employer social contributions – Persons older than 65 years old and born after 1937 - 2009-2012**

	2009	2010	2011	2012
Special wage tax (tscerot_s)	0	0	0	0
Old age pension (tscerpi_s)	0.1021	0.1021	0.1021	0.1021



2.3.3 Self-employed social contributions (ils_sicse)

The self-employed (lse > 0) pay social contributions based on total self employment income (yse) if the annual amount is greater than 1,000 SEK (if below no contribution is paid).

There are 8 different self-employed social contributions: health insurance, parental insurance, occupational injuries, old age pension, survivors pension, labour market, general wage fee and a special wage tax (for persons older than 65 years). The rates are specified in the following tables.

Table 35. Self-employed social contributions – 2009-2012 for persons 0-65 years of age

	2009	2010	2011	2012
Health insurance (tscsesi_s)	0.0693	0.0641	0.0511	0.0511
Old age pension (tscsepi_s)	0.1021	0.1021	0.1021	0.1021
Survivors pension (tscseci_s)	0.0170	0.0170	0.0117	0.0117
Occupational injuries (tscseac_s)	0.0068	0.0068	0.0068	0.0030
Labour market (tscseir_s)	0.0050	0.0211	0.0037	0.0037
General wage fee (tscseot_s)	0.0749	0.0603	0.0923	0.0921
Parental insurance (tscseml_s)	0.0220	0.0220	0.0220	0.0260

Table 36. Self-employed contributions – Persons older than 65 years old and born before 1938–2007-2012

	2007	2008	2009	2010	2011	2012
age	69 – +					
Special wage tax (tscseot_s)	0.2426	0	0	0	0	0

Table 37. Self-employed contributions – Persons older than 65 years old and born after 1937 – 2009-2012

	2009	2010	2011	2012
age	66 – 70	66 – 71	66-72	66-73
Special wage tax (tscseot_s)	0	0	0	0
Old age pension (tscsepi_s)	0.1021	0.1021	0.1021	0.1021

2.4 Personal income tax

The main tax simulated for Sweden is the personal income tax which is divided into four parts: a government tax, a county council tax, a municipality tax and a funeral tax.

2.4.1 Tax unit

Personal income tax is assessed at individual level.



2.4.2 Exemptions

Child benefits, social assistance, housing allowance, housing allowance for pensioners and social assistance for elderly are exempted from income tax.

2.4.3 Taxable income

The taxable income (*il_taxabley*) includes: employment income (*yem*), fringe benefits (*kfb*), self-employment income (*yse*), parental leave benefit (*bpl* – parent’s allowance at birth), income received by children (*yot*), Private pensions (*ypp*), Unemployment benefits (*bun*), Old age pension (*poa*), Disability benefit (*pdi*), Sickness benefit (*bhl*) and Survivor’ pension (*psu*).

2.4.4 Tax allowance

Two tax allowances are simulated.

2.4.4.1 Allowance for voluntary Private Pension contributions (*tintapv_s*).

The allowance is for contributions for private pension (*xpp*). For employees it is limited to 0,5 basic amount (XBASM) for 2007. In the period 2008 to 2012 it is limited to 12,000 SEK. For self-employed the rules are more generous. Due to lack of data, we do not simulate those rules which anyway affect only 3 percent of those claiming the allowance (i.e. having a higher value).

2.4.4.2 Basic allowance (*tinta00_s*)

The basic allowance (*tinta00_s*) is based on taxable income minus the allowance for voluntary Private Pension (*il_taxabley_ppta*).

Table 38. Basic Allowance - 2009-2012

Taxable income minus allowance for Private pension		Allowance
Lower level	Upper level	
0	$0.99 * XBASM$	$\min(il_taxabley_ppta, 0.423 * XBASM)$
$0.99 * XBASM$	$2.72 * XBASM$	$0.423 * XBASM + 0.2 * (il_taxabley_ppta - 0.99 * XBASM)$
$2.72 * XBASM$	$3.11 * XBASM$	$0.77 * XBASM$
$3.11 * XBASM$	$7.88 * XBASM$	$0.77 * XBASM - 0.1 * (il_taxabley_ppta - 3.11 * XBASM)$
$7.88 * XBASM$		$0.293 * XBASM$

In 2009 an additional basic allowance for pensioners (over 65 years) was introduced (*tintape_s*):

**Table 39. Additional Basic Allowance for pensioners (over 65 years) – 2009-2012**

Taxable income minus allowance for Private pension		Allowance
Lower level	Upper level	
2009		
0	0.99*XBASM	$\min(\text{il_taxable_ppta}, 0.425*XBASM)$
0.99*XBASM	2.72*XBASM	$0.623*XBASM - 0.2* \text{il_taxable_ppta}$
2.72*XBASM	3.11*XBASM	$0.078*XBASM$
3.11*XBASM	7.88*XBASM	$0.372*XBASM - 0.1* \text{il_taxable_ppta}$
7.88*XBASM	8.49*XBASM	$0.061*XBASM$
8.49*XBASM		$0.849*XBASM - 0.1* \text{il_taxable_ppta}$
2010		
0	0.99*XBASM	$\min(\text{il_taxable_ppta}, 0.5094*XBASM)$
0.99*XBASM	2.72*XBASM	$0.7074*XBASM - 0.2* \text{il_taxable_ppta}$
2.72*XBASM	3.11*XBASM	$0.1624*XBASM$
3.11*XBASM	3.90*XBASM	$-0.1486*XBASM + 0.1* \text{il_taxable_ppta}$
3.90*XBASM	7.88*XBASM	$0.2219*XBASM + 0.005* \text{il_taxable_ppta}$
7.88*XBASM	9.1568*XBASM	$1.0099*XBASM - 0.095* \text{il_taxable_ppta}$
9.1568*XBASM		$0.14*XBASM$
2011-2012		
0	0.98*XBASM	$\min(\text{il_taxable_ppta}, 0.557*XBASM)$
0.98*XBASM	0.99*XBASM	$0.459*XBASM + 0.1* \text{il_taxable_ppta}$
0.99*XBASM	2.72*XBASM	$0.657*XBASM - 0.1* \text{il_taxable_ppta}$
2.72*XBASM	3.11*XBASM	$0.112*XBASM + 0.1* \text{il_taxable_ppta}$
3.11*XBASM	3.85*XBASM	$-0.199*XBASM + 0.2* \text{il_taxable_ppta}$
3.85*XBASM	4.80*XBASM	$0.186*XBASM + 0.1* \text{il_taxable_ppta}$
4.80*XBASM	7.88*XBASM	$0.619*XBASM + 0.01* \text{il_taxable_ppta}$
7.88*XBASM	12.21*XBASM	$1.407*XBASM - 0.09* \text{il_taxable_ppta}$
12.12*XBASM		$0.307*XBASM$

2.4.5 Tax base

The tax base (il_taxbase) is defined as taxable income minus the allowance for voluntary private pension and the basic allowance.



2.4.6 Tax schedule

The tax schedule for government tax (tinna_s), county council tax (tinrg_s), municipality tax (tinmu_s) and funeral tax (tinfu_s) applies to same tax base (il_taxbase).

The county council tax rate is different for different counties in Sweden. It varies between 9.42 % and 12.27 % of the tax base.

The municipality tax rate varies between 17.58 % and 23.79 % of the tax base.

The funeral tax rate varies between 0.07 % and 1.04 % of the tax base.

Since we do not have any information of the region persons are living in, those taxes are simulated according to the average value for Sweden, as reported in the following table.

Table 40. **Income tax rates – 2009-2012**

	Municipality tax	County council tax	Funeral tax
2009	20.72 %	10.86 %	0.22 %
2010	20.74 %	10.87 %	0.22 %
2011	20.73 %	10.88 %	0.22 %
2012	20.59 %	11.07 %	0.22 %

The government income tax schedule is based on three income bands as reported in the following table.

Table 41. **Government income tax schedule – 2009-2012**

Band	Tax rate	2009	2010	2011	2012
1 st	0 %	0 – 367,599	0-372,099	0-382,999	0-401,099
2 nd	20 %	367,600 – 526,199	372,100-532,699	383,000-548,299	401,100-574,299
3 rd	25 %	526,200	532,700	548,300	574,300

2.4.7 Tax credits

There are ten different non-refundable tax credits in the Swedish tax system (the final tax liability cannot be negative). Here we report on those we are able to simulate or impute. Other (non simulated) tax credits are for costs related to broadband, some environmental improvement in private houses, seafarer's income, damage of forest due to a heavy storm in 2005.

2.4.7.1 Tax credit for general social security contributions.

The general social security contribution (see 2.3.1 – tsee_s) is 100 % deductible from income tax.

2.4.7.2 Tax credit for negative capital income

This can be simulated for those who have a negative capital income (i.e. the interests paid minus the sum of income from rent and capital incomes, if the difference is positive) because of mortgage on their house. All negative capital income due to other forms of mortgage cannot be simulated. The annual amount of the tax credit (tintcmi_s) is:



$0.30 * \text{negative capital income}^{*12}$ if $\text{negative capital income}^{*12} < 100,000$

$0.30 * 100,000 + 0.21 * (\text{negative capital income}^{*12} - 100,000)$ if $\text{negative capital income}^{*12} \geq 100,000$

2.4.7.3 Earned Income Tax credit

In 2007 an Earned Income Tax credit was introduced. It has been enhanced three times, in 2008, 2009, and 2010. Depending on the age there are two different scales for the tax credit.

In both cases it is based on the income (tintc00_s) defined as follows:

2007: $\text{yem} + \text{yse} + \text{kfb} - \min(\text{xpp}, 0.5 * \text{XBASM})$

2008-2012: $\text{yem} + \text{yse} + \text{kfb} - \min(\text{xpp}, 12000)$

Table 42. Earned Income Tax credit 2009

Persons younger than 65 years		
Annual Income base for tax credit		
Lower level	Upper level	Tax credit
0	$0.91 * \text{XBASM}$	$(\text{tintc00}_s - \text{BA}) * \text{MT}$
$0.91 * \text{XBASM}$	$2.72 * \text{XBASM}$	$(0.91 * \text{XBASM} + 0.25 * (\text{tintc00}_s - 0.91 * \text{XBASM}) - \text{BA}) * \text{MT}$
$2.72 * \text{XBASM}$	$7 * \text{XBASM}$	$(1.363 * \text{XBASM} + 0.065 * (\text{tintc00}_s - 2.72 * \text{XBASM}) - \text{BA}) * \text{MT}$
$7 * \text{XBASM}$		$((1.642 * \text{XBASM}) - \text{BA}) * \text{MT}$

Persons 65 years and older		
Annual Income base for tax credit		
Lower level	Upper level	Tax credit
0	100,000 SEK	$0.2 * \text{tintc00}_s$
100,000 SEK	300,000 SEK	$15,000 + 0.05 * \text{tintc00}_s$
300,000 SEK		30,000

BA = Basic Allowance, see chapter 2.4.4.2



Table 43. Earned Income Tax credit – 2010-2012

Persons younger than 65 years		
Annual Income base for tax credit		
Lower level	Upper level	Tax credit
0	0.91*XBASM	$(\text{tintc00_s} - \text{BA}) * \text{MT}$
0.91*XBASM	2.72*XBASM	$(0.91 * \text{XBASM} + 0.304 * (\text{tintc00_s} - 0.91 * \text{XBASM}) - \text{BA}) * \text{MT}$
2.72*XBASM	7*XBASM	$(1.461 * \text{XBASM} + 0.095 * (\text{tintc00_s} - 2.72 * \text{XBASM}) - \text{BA}) * \text{MT}$
7*XBASM		$(1.868 * \text{XBASM}) - \text{BA}) * \text{MT}$

Persons 65 years and older		
Annual Income base for tax credit		
Lower level	Upper level	Tax credit
0	100,000 SEK	$0.2 * \text{tintc00_s}$
100,000 SEK	300,000 SEK	$15,000 + 0.05 * \text{tintc00_s}$
300,000 SEK		30,000

BA = Basic Allowance, see chapter 2.4.4.2

MT = Municipality tax rate and County council tax rate

Due to lack of data, two tax credits cannot be simulated. However they are presented below and an overview of their total amounts is reported in the Table 44 below.

2.4.7.9 Seafarer's income (2007-2012)

A tax reduction is given for persons with seafarer's income. The amount is from 9,000 SEK to 14,000 SEK per year depending on if the ship is sailing abroad or in Sweden.

2.4.7.10 Domestic and reconstruction services (2007-2012)

In 2007 a tax reduction for domestic services is introduced and in 2009 reconstruction services is also included. The tax reduction is 50 percent of the labour cost, maximum 50,000 SEK per year.

Table 44. Non-simulated tax credits 2009-2012, in millions SEK

Tax credit	2009	2010	2011	2012
Seafarer's income	-	-	-	-
Domestic and reconstruction services	10,355	13,609	15,231	15,623

Estimates for 2011 and 2012



2.5 Other taxes

2.5.1 Tax on capital income

The tax on capital is 30 % of the positive capital income, defined as income from capital and property income minus interests paid. This can partly be simulated as $0.30 \cdot \max((y_{iy} + y_{pr}) - x_{hcmomi}, 0)$. Other interests paid, in addition to the interests paid on mortgage (x_{hcmomi}), are not recorded in the data and they cannot be taken into account.

3 DATA

3.1 General description

The Swedish database is drawn from the UDB version of the European Statistics on Income and Living Conditions (EU-SILC). Every year a systematic sample is drawn from the register of total population (TPR). This is sorted by age and covers the entire population according to the national registration. Such sample is regarded as simple random sample. The SILC 2008 sample was drawn in November 2007 and consisted of four panels, panel 5 to 8. Panel 5 was originally drawn in 2005 and every year complemented with people who had grown into the population (new 16 aged and immigrants). Most of the respondents were answering for the 4th time. In the same manner panel 6 and panel 7 were originally drawn in 2006 and 2007 and complemented. Panel 8 was included for the first time 2007.

Table 45. EUROMOD database description

	Year 2008
EUROMOD database	SE_2008_a3
Original name	
Provider	EUROSTAT
Year of collection	2008
Period of collection	2008.01.01-2008.12.31
Income reference period	2007
Sampling	Systematic sampling from the register of total population
Unit of assessment	Households
Coverage	Private household
Sample size	7491 households, 18663 individuals
Response rate	73.31%

3.2 Sample quality and weights

3.2.1 Sample size and non-response

The EUROMOD sample consists of 7491 households and 18663 individuals.

The non-response rate is 26.69 %. Since data is a combination of interview data and register data the non-response rate for household and individuals are the same. If answers on the household composition have been given, then all economic data for the individual are collected through register data.

3.2.2 Weights

For the estimation procedure the sample from each panel is divided into 2 x 8 stratum by sex and age-groups. Post-stratification refers to sex, age 16-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84 and 84+ years.



Within each post strata the design-weights are computed as the inverse of the probability of inclusion after that the design-weights are adjusted according to the over-coverage. The final cross sectional weight are computed as the adjusted population-size in each post strata divided by the number of respondents for each panel and finally divided by 4.

Table 46. Descriptive Statistics of the Grossing-up weight (household level)

	SE_2008_a3
Number	7491
Mean	488.13
Median	460.31
Maximum	1993.92
Minimum	144.20
Max/Min	13.83
Decile 1	283.88
Decile 9	775.69
Dec 9 / Dec1	2.73

3.2.3 Item non-response and under-reporting

Household composition data is collected at the telephone interview, all income variables are collected through different Swedish data registers. On economic data there will not be any item non-response and no known underreporting. The underreporting which could be in the economic data is for ‘black’ income. On the data collected during the interview there is item non-response, for the item-non-response on this data imputation has been made. For some of the labour market variables the question has only been put to the reference person in the household which means that the use of those variables is not recommended (lfs, lindi and loc).

3.3 Imputations, data adjustment and assumptions

3.3.1 Time period

In the SILC user database, the income reference period is a 12-month period. Information on all income sources refers to the last income year (1 January 2007 – 31 December 2007). The variables are recorded at the time the person receives it, i.e. when the payment is done this means that a person could for example have been unemployed during the last part of December 2006 but receiving the payment in January 2007, this will then be part of the income for 2007.

The other variables refer to the time of the interview or a 12 months period prior to the interview.

Children born after the end of the income reference period (i.e. 31 December 2007) have been dropped from the dataset.

3.3.2 Gross incomes

The incomes used are gross incomes.

3.3.3 Imputed variables

EUSILC variable HY050g (Family/children related allowances) has been split into two components: child benefit (bch, simulated in EUROMOD) and parent’s allowance at birth (bpl, not simulated in EUROMOD) according to the rules about child benefits.

EUSILC variable PY140g (Education related allowances) has been split into two components: education related allowances (bed, non simulated in EUROMOD) and extra supplement of child



benefit for upper secondary school students (bchot, simulated in EUROMOD) according to the year of birth of the individual (i.e. after 1986 is considered as extra supplement).

3.4 Updating

The following indexes (year by year) are used in the updating of the Swedish data.

Table 47. Index used

Index	Income Source/index type	2007	2008	2009	2010	2011	2012
CPI	Consumer price index	1.022	1.035	0.997	1.011	1.030	1.012
XLON	Rise of hourly wage	1.031	1.044	1.030	1.015	1.029	1.034
XBAS	Change in base amount	1.015	1.017	1.044	0.991	1.009	1.028

Table 48. Updating factors

Index	Income Source	Variable
<i>XLON</i>	Income - Employment	yem
<i>CPI</i>	Kind - Fringe benefits	kfb
<i>CPI</i>	Income - Private pension	ypp
<i>Specific index</i>	Income - Self employment	yse
<i>XBAS</i>	Benefit - Education	bed
<i>XLON</i>	Benefit - Unemployment	bun
<i>XLON</i>	Benefit - Health (Sickness)	bhl
<i>XBAS</i>	Pension - Disability (Invalidity)	pdi
<i>XBAS</i>	Pension - Old Age	poa
<i>XBAS</i>	Pension - Survivors	psu
<i>Specific index</i>	Income - Investment	yi
	Income - Property	ypr
	Income - Property - Rent	yprrt
-	Income - Private Transfers	ypt
-	Tax - Property tax	tpr
-	Income - Other	yot
-	Asset - Financial Capital	afc
-	Expenditure - Maintenance Payments	xmp
-	Expenditure - Private Pension (voluntary)	xpp
<i>CPI</i>	Expenditure - Housing cost	xhc
<i>CPI</i>	Expenditure - Housing cost - Rent	xhert
<i>CPI</i>	Expenditure - Housing cost - Mortgage Interest	xhcmomi
<i>CPI</i>	Expenditure - Housing cost - Other	xchot
<i>XLON</i>	Benefit Parental allowance	bpl

4 VALIDATION

4.1 Aggregate Validation

In this section we present the validation results from our model. First we compare how well the survey represents aggregate data for the main income sources included in the model and not simulated. This is followed by the tables which show how 2007 income data are updated to match 2008-2012 actual data. After that we present the validation of the simulated instruments: income taxes (and its components), social insurance contributions, benefits (Child benefit, Housing Allowance, Housing Allowance for pensioners, and Social Assistance). We present figures related to both income aggregates and the numbers of receivers or payers (where available). Section 4.2 includes



distributional statistics, such as income deciles, inequality indices and poverty measures within socio-economic groups.

Usually the external source for macro validation comes from the registry with the estimates restricted to the sample of the survey (EU-SILC). Due to the lack of availability of estimates from the survey related to 2010, the external figures for 2010 source refer to the estimates from the register related to the persons for persons living at the end of 2010. No external statistics are available for 2011 and 2012.

4.1.1 Non simulated incomes

To check how well the underlying data (Swedish component of EU-SILC), represents actual aggregate data, we compare income components (wages and various benefits) between the survey and the administrative source (STAR-register – Statistics Sweden) which is the direct source of the survey as well.

As expected, given that the survey is a sample of the register, overall the survey matches quite well the administrative sources. However, the comparison needs to be done with caution because the units of analysis and the exact income concepts in the survey and in the administrative statistics are not always strictly comparable. This is the case of property income and investment income given that data are aggregated at household level in the survey: property income has been allocated to both partners (if present) and this results in an overestimation of the number of recipients in EUROMOD.

Table 49. EUROMOD validation: income sources, 2007

	Recipients (unit)			Expenditure/Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employment income	5,107,980	5,153,131	0.99	1,169,546	1,169,512	1.00
Self-employment income	899,227	910,904	0.99	47,060	47,069	1.00
Property income	100,595	64,997	1.55	1,118	1,118	1.00
Investment income	5,437,193	6,276,387	0.87	67,496	68,446	0.99
Private pensions	621,481	624,175	1.00	22,019	22,123	1.00
Private transfers	190,359	208,479	0.91	3,394	3,394	1.00

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).

Next we evaluate how well the 2007 income data are updated to match 2008-2012 actual data. Using the uprating factors of monetary values included in the model, we are able to capture quite well the aggregate amounts. The unchanged socio-economic structure of the data (i.e. we do not apply any re-weighting of the data) does not seem to create a major problem in the representation of the aggregate numbers of recipients of the main income and most discrepancies remain stable over time. Moreover, the aggregate amounts mirror the trend observed in the comparison of the number of recipients between EUROMOD and external source.



Table 50. EUROMOD validation: income sources, 2008

	Recipients (unit)			Expenditure/Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employment income	5,107,980	5,177,888	0.99	1,221,006	1,266,647	0.96
Self-employment income	899,227	1,069,176	0.84	43,107	55,576	0.78
Property income	100,595	63,195	1.59	1,224	1,330	0.92
Investment income	5,437,193	6,696,583	0.81	84,640	68,446	1.24
Private pensions	621,481	621,856	1.00	22,790	22,123	1.03
Private transfers	190,359	182,846	1.04	3,394	3,394	1.00

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).

Table 51. EUROMOD validation: income sources, 2009

	Recipients (unit)			Expenditure/Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employment income	5,107,980	5,196,955	0.98	1,257,261	1,296,890	0.97
Self-employment income	899,227	1,052,687	0.85	41,413	51,146	0.81
Property income	100,595	56,094	1.79	1,023	1,072	0.95
Investment income	5,437,193	6,078,029	0.89	53,524	67,208	0.80
Private pensions	621,481	685,142	0.91	22,724	26,583	0.85
Private transfers	190,359	196,905	0.97	3,394	3,082	1.10

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).

Table 52. EUROMOD validation: income sources, 2010

	Recipients (unit)			Expenditure/Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employment income	5,107,980	5,118,181	1.00	1,275,974	1,266,719	1.01
Self-employment income	899,227	746,844	1.20	52,425	48,635	1.08
Property income	100,595	60,483	1.66	1,126	1,374	0.82
Investment income	5,437,193	5,600,985	0.97	64,729	70,275	0.92
Private pensions	621,481	661,756	0.94	22,966	22,921	1.00
Private transfers	190,359	215,063	0.89	3,394	3,560	0.95

Notes: External source refers to the estimates from the register related to the persons living at the end of 2010.



Table 53. EUROMOD validation: income sources, 2011

	Recipients (unit)			Expenditure/Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employment income	5,107,980	n/a	n/a	1,313,519	n/a	n/a
Self-employment income	899,227	n/a	n/a	53,125	n/a	n/a
Property income	100,595	n/a	n/a	1,164	n/a	n/a
Investment income	5,437,193	n/a	n/a	81,670	n/a	n/a
Private pensions	621,481	n/a	n/a	23,661	n/a	n/a
Private transfers	190,359	n/a	n/a	3,394	n/a	n/a

Notes: n/a not available.

Table 54. EUROMOD validation: income sources, 2012

	Recipients (unit)			Expenditure/Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employment income	5,107,980	n/a	n/a	1,358,178	n/a	n/a
Self-employment income	899,227	n/a	n/a	53,125	n/a	n/a
Property income	100,595	n/a	n/a	1,147	n/a	n/a
Investment income	5,437,193	n/a	n/a	69,926	n/a	n/a
Private pensions	621,481	n/a	n/a	23,945	n/a	n/a
Private transfers	190,359	n/a	n/a	3,394	n/a	n/a

Notes: n/a not available.

4.1.2 Non simulated benefits

Tables 55-60 report the validation of benefits included in EUROMOD but not simulated. The aggregate number of recipients of survivor pensions is underestimated in 2007 and 2008. This might be due to the fact that this benefit is collected as such in the survey only for individuals aged 16+ and hence survivor pensions received by children are not recorded in this variable (they are recorded in the variable yot, Income received by children). In 2009 and 2010, the number of recipients of survivor pensions is much closer to the external statistics. The aggregate numbers of recipients of unemployment benefits decreases in 2008 and 2009 but increases in 2010. On the other hand, the aggregate amount matches rather well the external figures. Parent's allowances have been disaggregated from the EU-SILC variable HY050g and attributed to both parents (if present) and this results in an overestimation of the number of recipients.



Table 55. EUROMOD validation: benefits included and not simulated, 2007

	Recipients (unit)			Expenditure/Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Old age pensions	1,967,221	1,969,043	1.00	275,115	274,836	1.00
Survivor pensions	80,207	98,388	0.82	4,729	5,260	0.90
Disability pensions	548,275	571,474	0.96	56,016	56,921	0.98
Sickness benefits	1,300,611	1,300,608	1.00	31,103	31,102	1.00
Unemployment benefits	455,913	455,913	1.00	23,344	23,343	1.00
Education related allowances	392,910	410,588	0.96	18,279	18,778	0.97
Parents' allowances	843,431	649,157	1.30	21,749	22,518	0.97

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).

Over time the number of recipients of sickness benefits slightly decreases (according to the external sources) and the aggregate amount reported by EUROMOD overestimates to a large extent the one in the external statistics.

Table 56. EUROMOD validation: benefits included and not simulated, 2008

	Recipients (unit)			Expenditure/Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Old age pensions	1,967,221	2,075,408	0.95	279,792	274,836	1.02
Survivor pensions	80,207	93,380	0.86	4,809	5,260	0.91
Disability pensions	548,275	553,503	0.99	56,969	56,921	1.00
Sickness benefits	1,300,611	1,248,218	1.04	32,471	31,102	1.04
Unemployment benefits	455,913	371,347	1.23	24,371	23,343	1.04
Education related allowances	392,910	395,376	0.99	18,590	18,778	0.99
Parents' allowances	843,431	697,202	1.21	22,706	22,518	1.01

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).



Table 57. EUROMOD validation: benefits included and not simulated, 2009

	Recipients (unit)			Expenditure/Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Old age pensions	1,967,221	2,135,827	0.92	292,173	342,203	0.85
Survivor pensions	80,207	75,970	1.06	5,022	4,285	1.17
Disability pensions	548,275	491,646	1.12	59,490	50,200	1.19
Sickness benefits	1,300,611	1,244,211	1.05	33,435	23,176	1.44
Unemployment benefits	455,913	430,389	1.06	25,094	26,687	0.94
Education related allowances	392,910	501,223	0.78	19,413	21,813	0.89
Parents' allowances	843,431	749,186	1.13	23,381	26,009	0.90

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).

Table 58. EUROMOD validation: benefits included and not simulated, 2010

	Recipients (unit)			Expenditure/Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Old age pensions	1,967,221	2,156,507	0.91	289,421	332,034	0.87
Survivor pensions	80,207	82,152	0.98	4,974	3,808	1.31
Disability pensions	548,275	539,586	1.02	58,929	53,339	1.10
Sickness benefits	1,300,611	1,123,604	1.16	33,933	22,093	1.54
Unemployment benefits	455,913	541,867	0.84	25,468	32,612	0.78
Education related allowances	392,910	523,816	0.75	19,230	23,740	0.81
Parents' allowances	843,431	701,938	1.20	23,729	24,223	0.98

Notes: External source refers to the estimates from the register related to the persons living at the end of 2010.

Table 59. EUROMOD validation: benefits included and not simulated, 2011

	Recipients (unit)			Expenditure/Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Old age pensions	1,967,221	n/a	n/a	292,080	n/a	n/a
Survivor pensions	80,207	n/a	n/a	5,020	n/a	n/a
Disability pensions	548,275	n/a	n/a	59,471	n/a	n/a
Sickness benefits	1,300,611	n/a	n/a	34,931	n/a	n/a
Unemployment benefits	455,913	n/a	n/a	26,217	n/a	n/a
Education related allowances	392,910	n/a	n/a	19,406	n/a	n/a
Parents' allowances	843,431	n/a	n/a	24,427	n/a	n/a

Notes: n/a not available.



Table 60. EUROMOD validation: benefits included and not simulated, 2012

	Recipients (unit)			Expenditure/Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Old age pensions	1,967,221	n/a	n/a	300,258	n/a	n/a
Survivor pensions	80,207	n/a	n/a	5,161	n/a	n/a
Disability pensions	548,275	n/a	n/a	61,136	n/a	n/a
Sickness benefits	1,300,611	n/a	n/a	36,119	n/a	n/a
Unemployment benefits	455,913	n/a	n/a	27,109	n/a	n/a
Education related allowances	392,910	n/a	n/a	19,950	n/a	n/a
Parents' allowances	843,431	n/a	n/a	25,257	n/a	n/a

Notes: n/a not available.

4.1.3 Simulated income tax

We simulate the four components of the personal income tax: government tax, county council tax, municipality tax and funeral tax. The simulations represent the external statistics quite well in 2007 and the amounts are around 93% to 102% of the external statistics over the period 2008-2010. No external statistics are available for 2011-2012.

Tables 61-66 include the validation of the main components of the income tax. The tax credit for negative capital income is largely underestimated, both in terms of recipients and expenditure, given that in the data the only source of negative capital income are the interests paid on the mortgage on the main house and other forms of mortgages are not included. The tables report the validation of the Earned Income Tax Credit introduced in 2007 and enhanced three times, in 2008, 2009 and 2010. The simulation matches well the external statistics both in terms of aggregate number of individuals and amount. Moreover, the tables report the total number of tax payers and total revenue for the Income tax as a whole (given by the sum of the four components) as simulated by EUROMOD once we subtract the simulated tax credits. The number of individuals paying the tax on capital income is overestimated because the investment income in the data is aggregated at household level and we split it among the partners in the household.



Table 61. EUROMOD validation: income tax, 2007

	Taxpayers (unit)			Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Basic allowance	8,164,228	7,022,034	1.16	136,297	135,772	1.00
Allowance for voluntary Private Pension contributions	2,248,488	2,248,485	1.00	14,331	15,591	0.92
Municipal income tax and County council tax	6,688,545	6,666,715	1.00	482,684	479,375	1.01
Government income tax	1,374,823	1,354,843	1.01	42,445	41,562	1.02
Funeral tax	6,687,947	6,653,644	1.01	3,358	3,413	0.98
Tax credit for negative capital income	1,621,522	3,588,095	0.45	10,083	19,213	0.52
Earned income tax credit	4,765,230	4,705,848	1.01	42,539	41,483	1.03
Tax credit for Social Employee contributions	4,703,689	4,968,939	0.95	78,086	83,053	0.94
Income tax	6,498,609	---	---	398,241	---	---
Tax on capital income excluding Capital Gains	4,062,686	3,334,000	1.22	18,245	18,773	0.97

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).

Table 62. EUROMOD validation: income tax, 2008

	Taxpayers (unit)			Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Basic allowance	8,167,543	7,166,242	1.14	137,338	139,167	0.99
Allowance for voluntary Private Pension contributions	2,248,488	2,339,775	0.96	11,975	13,600	0.88
Municipal income tax and County council tax	6,695,457	6,814,687	0.98	499,252	517,826	0.96
Government income tax	1,382,805	1,454,000	0.95	44,267	49,316	0.90
Funeral tax	6,695,457	6,791,042	0.99	3,487	3,663	0.95
Tax credit for negative capital income	1,577,874	3,808,195	0.41	10,175	26,081	0.39
Earned income tax credit	4,771,657	4,815,762	0.99	54,871	55,413	0.99
Tax credit for Social Employee contributions	4,718,080	5,051,611	0.93	81,622	88,502	0.92
Income tax	6,465,223	---	---	400,916	---	---
Tax on capital income excluding Capital Gains	4,106,335	3,538,000	1.16	23,081	20,874	1.11

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).



Table 63. EUROMOD validation: income tax, 2009

	Taxpayers (unit)			Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Basic allowance	8,167,543	7,246,906	1.13	144,257	152,766	0.94
Allowance for voluntary Private Pension contributions	2,248,488	2,352,061	0.96	11,975	13,727	0.87
Municipal income tax and County council tax	6,689,652	6,894,844	0.97	515,555	535,078	0.96
Government income tax	1,053,180	1,127,815	0.93	38,319	40,921	0.94
Funeral tax	6,689,382	6,880,315	0.97	3,592	3,800	0.95
Tax credit for negative capital income	1,670,757	3,880,335	0.43	10,727	20,660	0.52
Earned income tax credit	4,929,832	4,953,654	1.00	67,951	68,750	0.99
Tax credit for Social Employee contributions	4,716,612	---	---	84,693	91,654	0.92
Income tax	6,450,765	---	---	394,723	---	---
Tax on capital income excluding Capital Gains	4,013,451	3,126,000	1.28	14,277	18,844	0.76

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).

Table 64. EUROMOD validation: income tax, 2010

	Taxpayers (unit)			Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Basic allowance	8,167,543	7,229,788	1.13	141,167	161,701	0.87
Allowance for voluntary Private Pension contributions	2,248,488	2,105,803	1.07	11,975	13,286	0.90
Municipal income tax and County council tax	6,697,876	6,843,706	0.98	519,406	519,492	1.00
Government income tax	1,074,513	1,055,137	1.02	39,504	42,129	0.94
Funeral tax	6,697,426	6,809,093	0.98	3,629	3,594	1.01
Tax credit for negative capital income	1,638,602	3,768,130	0.43	10,619	17,246	0.62
Earned income tax credit	4,943,074	4,782,808	1.03	79,318	76,499	1.04
Tax credit for Social Employee contributions	4,728,954	---	---	85,751	89,493	0.96
Income tax	6,452,838	---	---	389,477	---	---
Tax on capital income excluding Capital Gains	4,045,606	2,879,000	1.41	17,426	18,216	0.96

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).



Table 65. EUROMOD validation: income tax, 2011

	Taxpayers (unit)			Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Basic allowance	8,167,543	n/a	n/a	141,414	n/a	n/a
Allowance for voluntary Private Pension contributions	2,248,488	n/a	n/a	11,975	n/a	n/a
Municipal income tax and County council tax	6,699,533	n/a	n/a	524,578	n/a	n/a
Government income tax	1,064,125	n/a	n/a	40,341	n/a	n/a
Funeral tax	6,699,533	n/a	n/a	3,686	n/a	n/a
Tax credit for negative capital income	1,593,233	n/a	n/a	10,664	n/a	n/a
Earned income tax credit	4,947,149	n/a	n/a	80,773	n/a	n/a
Tax credit for Social Employee contributions	4,734,423	n/a	n/a	88,031	n/a	n/a
Income tax	6,457,425	n/a	n/a	394,723	n/a	n/a
Tax on capital income excluding Capital Gains	4,090,976	n/a	n/a	22,177	n/a	n/a

Notes: n/a not available.

Table 66. EUROMOD validation: income tax, 2012

	Taxpayers (unit)			Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Basic allowance	8,167,543	n/a	n/a	145,096	n/a	n/a
Allowance for voluntary Private Pension contributions	2,248,488	n/a	n/a	11,975	n/a	n/a
Municipal income tax and County council tax	6,699,621	n/a	n/a	533,236	n/a	n/a
Government income tax	1,012,217	n/a	n/a	40,243	n/a	n/a
Funeral tax	6,699,443	n/a	n/a	3,803	n/a	n/a
Tax credit for negative capital income	1,632,412	n/a	n/a	11,020	n/a	n/a
Earned income tax credit	4,947,308	n/a	n/a	83,153	n/a	n/a
Tax credit for Social Employee contributions	4,738,862	n/a	n/a	91,318	n/a	n/a
Income tax	6,436,779	n/a	n/a	389,258	n/a	n/a
Tax on capital income excluding Capital Gains	4,051,796	n/a	n/a	18,847	n/a	n/a

Notes: n/a not available.



4.1.4 Simulated social contributions

The following tables report the validation of the social insurance contributions for employees, employers and self-employed individuals.

Employee social insurance contributions are slightly undersimulated both in terms of contributors (2007 and 2008) and revenue.

Table 67. EUROMOD validation: employee social insurance contributions, 2007 -2012

	Contributors (unit)			Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
2007	4,703,689	4,968,939	0.95	78,086	83,053	0.94
2008	4,718,080	5,051,611	0.93	81,622	88,502	0.92
2009	4,716,612	---	---	84,693	91,654	0.92
2010	4,728,954	---	---	85,751	89,493	0.96
2011	4,734,423	---	---	88,031	n/a	n/a
2012	4,738,862	---	---	91,318	n/a	n/a

Notes: External source for year 2007-2009 refers to the estimates from the register restricted to the sample of the survey (EU-SILC). External source for year 2010 refers to the estimates from the register related to the persons living at the end of 2010. n/a not available.

Employers social insurance contributions, are only validated in terms of revenue due to a lack in external statistics to validate the number of contributors. The simulations match well the external statistics in 2007-2008 and only a small oversimulation is observed in 2009 and 2010.

Table 68. EUROMOD validation: employers social insurance contributions, 2007

	Contributors (unit)		Revenue (SEK - millions)		
	EUROMOD	External source	EUROMOD	External source	Ratio
Work injury insurance	4,878,826	7,992	7,844	1.02	
Life insurance	4,878,826	19,979	19,611	1.02	
Labour market contribution	4,878,826	52,298	48,471	1.08	
Parental leave programme	4,878,826	25,855	25,356	1.02	
Ordinary wage tax and Special wage tax	4,976,124	52,523	51,207	1.03	
Retirement benefit programme	4,953,251	120,643	120,882	1.00	
Reduction	876,303	4,538	---	---	
Sickness insurance	4,878,826	103,185	100,993	1.02	

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).



Table 69. EUROMOD validation: employers social insurance contributions, 2008

	Contributors (unit)		Revenue (SEK - millions)		Ratio
	EUROMOD	EUROMOD	External source		
Work injury insurance	4,883,809	8,342	8,139	1.02	
Life insurance	4,883,809	20,856	20,351	1.02	
Labour market contribution	4,883,809	29,811	29,012	1.03	
Parental leave programme	4,883,809	26,990	26,331	1.03	
Ordinary wage tax and Special wage tax	4,883,809	91,888	88,982	1.03	
Retirement benefit programme	4,976,731	126,037	127,873	0.99	
Reduction	878,059	9,475	---	---	
Sickness insurance	4,883,809	94,587	92,340	1.02	

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).

Table 70. EUROMOD validation: employers social insurance contributions, 2009

	Contributors (unit)		Revenue (SEK - millions)		Ratio
	EUROMOD	EUROMOD	External source		
Work injury insurance	4,884,116	8,587	7,964	1.08	
Life insurance	4,884,116	21,466	19,905	1.08	
Labour market contribution	4,884,116	30,684	28,325	1.08	
Parental leave programme	4,884,116	27,780	25,764	1.08	
Ordinary wage tax and Special wage tax	4,884,116	94,578	87,178	1.08	
Retirement benefit programme	4,992,288	129,805	128,751	1.01	
Reduction	878,059	13,973	---	---	
Sickness insurance	4,884,116	84,729	78,631	1.08	

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).

Table 71. EUROMOD validation: employers social insurance contributions, 2010

	Contributors (unit)		Revenue (SEK - millions)		Ratio
	EUROMOD	EUROMOD	External source		
Work injury insurance	4,884,938	8,714	8,102	1.08	
Life insurance	4,884,938	21,785	20,253	1.08	
Labour market contribution	4,884,938	59,588	55,414	1.08	
Parental leave programme	4,884,938	28,192	26,217	1.08	
Ordinary wage tax and Special wage tax	4,884,938	77,272	71,855	1.08	
Retirement benefit programme	5,001,179	131,774	131,884	1.00	
Reduction	878,881	14,181	---	---	
Sickness insurance	4,884,938	76,247	70,902	1.08	

Notes: External source refers to the estimates from the register related to the persons living at the end of 2010.



Table 72. EUROMOD validation: employers social insurance contributions, 2011

	Contributors (unit)		Revenue (SEK - millions)	
	EUROMOD	EUROMOD	External source	Ratio
Work injury insurance	4,886,491	8,970	n/a	n/a
Life insurance	4,886,491	15,434	n/a	n/a
Labour market contribution	4,886,491	38,388	n/a	n/a
Parental leave programme	4,886,491	29,022	n/a	n/a
Ordinary wage tax and Special wage tax	4,886,491	121,760	n/a	n/a
Retirement benefit programme	5,015,988	135,685	n/a	n/a
Reduction	879,479	14,599	n/a	n/a
Sickness insurance	4,886,490	66,223	n/a	n/a

Notes: n/a not available.

Table 73. EUROMOD validation: employers social insurance contributions, 2012

	Contributors (unit)		Revenue (SEK - millions)	
	EUROMOD	EUROMOD	External source	Ratio
Work injury insurance	4,887,488	4,091	n/a	n/a
Life insurance	4,887,488	15,955	n/a	n/a
Labour market contribution	4,887,488	39,683	n/a	n/a
Parental leave programme	4,887,488	35,455	n/a	n/a
Ordinary wage tax and Special wage tax	4,887,488	125,594	n/a	n/a
Retirement benefit programme	5,022,414	140,270	n/a	n/a
Reduction	879,479	15,094	n/a	n/a
Sickness insurance	4,887,488	68,456	n/a	n/a

Notes: n/a not available.

Due to the difficult identification of those subject to the payment of self-employment contributions (actually implemented looking at the status of being officially self employed, proxied by the variable $lse = 1$), we undersimulate the total number of contributors. However, we overall simulate quite well the total amount of contributions paid of the different components of the self employed contributions, with the exception of ordinary wage and special wage tax (undersimulated) and the sickness insurance (oversimulated). The same pattern is observed over the years considered, but most amounts are oversimulated in 2010.



Table 74. EUROMOD validation: Self employed social insurance contributions, 2007

	Contributors (unit)			Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Work injury insurance	225,935	312,339	0.72	282	264	1.07
Life insurance	225,935	312,339	0.72	704	660	1.07
Labour market contribution	225,935	312,339	0.72	791	741	1.07
Parental leave programme	225,935	312,339	0.72	911	854	1.07
Ordinary wage tax and Special wage tax	228,304	---	---	2,575	2,946	0.87
Retirement benefit programme	230,216	329,193	0.70	4,349	4,167	1.04
Sickness insurance	225,935	312,339	0.72	3,981	3,394	1.17

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).

Table 75. EUROMOD validation: Self employed social insurance contributions, 2008

	Contributors (unit)			Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Work injury insurance	220,771	323,684	0.68	252	269	0.94
Life insurance	220,771	323,684	0.68	631	674	0.94
Labour market contribution	220,771	323,684	0.68	186	198	0.94
Parental leave programme	220,771	323,684	0.68	817	873	0.94
Ordinary wage tax and Special wage tax	220,771	---	---	2,780	3,910	0.71
Retirement benefit programme	224,486	347,756	0.65	3,896	4,380	0.89
Sickness insurance	220,771	323,684	0.68	2,943	2,907	1.01

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).

Table 76. EUROMOD validation: Self employed social insurance contributions, 2009

	Contributors (unit)			Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Work injury insurance	219,486	283,532	0.77	241	241	1.00
Life insurance	219,486	283,532	0.77	603	604	1.00
Labour market contribution	219,486	283,532	0.77	178	178	1.00
Parental leave programme	219,486	283,532	0.77	781	782	1.00
Ordinary wage tax and Special wage tax	219,486	---	---	2,658	3,590	0.74
Retirement benefit programme	222,701	317,139	0.70	3,710	3,985	0.93
Sickness insurance	219,486	283,532	0.77	2,460	2,447	1.01

Notes: External source refers to the estimates from the register restricted to the sample of the survey (EU-SILC).



Table 77. EUROMOD validation: Self employed social insurance contributions, 2010

	Contributors (unit)			Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Work injury insurance	225,935	290,754	0.78	314	269	1.17
Life insurance	225,935	290,749	0.78	785	672	1.17
Labour market contribution	225,935	290,755	0.78	974	834	1.17
Parental leave programme	225,935	290,755	0.78	1,015	870	1.17
Ordinary wage tax and Special wage tax	225,935	---	---	2,783	2,805	0.99
Retirement benefit programme	231,593	329,247	0.70	4,892	4,541	1.08
Sickness insurance	225,935	290,754	0.78	2,958	2,525	1.17

Notes: External source refers to the estimates from the register related to the persons living at the end of 2010.

Table 78. EUROMOD validation: Self employed social insurance contributions, 2011

	Contributors (unit)			Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Work injury insurance	225,935	n/a	n/a	318	n/a	n/a
Life insurance	225,935	n/a	n/a	547	n/a	n/a
Labour market contribution	225,935	n/a	n/a	173	n/a	n/a
Parental leave programme	225,935	n/a	n/a	1,029	n/a	n/a
Ordinary wage tax and Special wage tax	225,935	n/a	n/a	4,316	n/a	n/a
Retirement benefit programme	231,959	n/a	n/a	4,963	n/a	n/a
Sickness insurance	225,935	n/a	n/a	2,390	n/a	n/a

Notes: n/a not available.

Table 79. EUROMOD validation: Self employed social insurance contributions, 2012

	Contributors (unit)			Revenue (SEK - millions)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Work injury insurance	224,822	n/a	n/a	140	n/a	n/a
Life insurance	224,822	n/a	n/a	547	n/a	n/a
Labour market contribution	224,822	n/a	n/a	173	n/a	n/a
Parental leave programme	224,822	n/a	n/a	1,215	n/a	n/a
Ordinary wage tax and Special wage tax	224,822	n/a	n/a	4,303	n/a	n/a
Retirement benefit programme	230,846	n/a	n/a	4,958	n/a	n/a
Sickness insurance	224,822	n/a	n/a	2,387	n/a	n/a

Notes: n/a not available



4.1.5 Simulated social benefits

Over the years considered, we simulate Child benefit, Housing allowance, Housing allowance for pensioners and Social Assistance. In the following tables we report the external statistics from both the register restricted to the sample of the survey and the register related to the persons living at the end of the year. We do this in order to *i*) provide more external information given that the sample of the survey might not capture well the recipients of these benefits and to *ii*) provide a preliminary indication of the validation of the simulated benefits for 2010 for which we have just some limited information not related to the sample of the survey. No external statistics are available yet for 2011 and 2012.

The validation of the Child Benefit (received by all children aged <16) and the total expenditure of the Child Benefit and Educational support (received by children aged 16+ in upper secondary school), show that the simulation matches quite well the external statistics. As expected, Housing allowance, Housing allowance for pensioners and Social Assistance are oversimulated both in terms of recipients and expenditure. The main reasons are *i*) non complete take-up of the benefits and *ii*) approximation, due to the data available, of the means test². Without taking into account the take-up behaviour, our estimates are close to the ones obtained with the National microsimulation model FASIT.

Table 80. EUROMOD validation: benefits simulated, 2007

	Recipients (unit)					Expenditure (SEK - millions)				
	EUROMOD	External source (survey sample)	Ratio	External source	Ratio	EUROMOD	External source (survey sample)	Ratio	External source	Ratio
Child benefit	1,035,617	1,051,671	0.98	---	---	24,401	23,230	1.05	---	---
Child benefit and Educational support	1,201,882	---	---	---	---	27,718	27,363	1.01	27,063	1.02
Housing allowance	321,438	253,268	1.27	---	---	5,121	2,958	1.73	3,571	1.43
Housing allowance for pensioners	446,812	326,606	1.37	---	---	10,979	7,828	1.40	11,562	0.95
Social Assistance	192,329	138,995	1.38	---	---	8,780	5,803	1.51	9,165	0.96

Notes: “External source (survey sample)” refers to the estimates from the register restricted to the sample of the survey (EU-SILC). “External source” refers to the estimates from the register related to the persons living at the end of 2007.

² In particular the variable containing Mortgage interest payments (hy100g) presents important jumps over time in SILC.



Table 81. EUROMOD validation: benefits simulated, 2008

	Recipients (unit)					Expenditure (SEK - millions)				
	EUROMOD	External source (survey sample)	Ratio	External source	Ratio	EUROMOD	External source (survey sample)	Ratio	External source	Ratio
Child benefit	1,035,617	---	---	1,021,000	1.01	24,401	22,613	1.08	---	---
Child benefit and Educational support	1,201,882	---	---	---	---	27,718	27,665	1.00	27,024	1.03
Housing allowance	312,019	204,343	1.53	---	---	5,017	2,360	2.13	3,456	1.45
Housing allowance for pensioners	482,084	342,199	1.41	---	---	11,812	8,339	1.42	11,665	1.01
Social Assistance	192,451	107,489	1.79	---	---	9,085	5,001	1.82	9,807	0.93

Notes: “External source (survey sample)” refers to the estimates from the register restricted to the sample of the survey (EU-SILC). “External source” refers to the estimates from the register related to the persons living at the end of 2008.

Table 82. EUROMOD validation: benefits simulated, 2009

	Recipients (unit)					Expenditure (SEK - millions)				
	EUROMOD	External source (survey sample)	Ratio	External source	Ratio	EUROMOD	External source (survey sample)	Ratio	External source	Ratio
Child benefit	1,035,617	---	---	---	---	24,401	21,551	1.13	---	---
Child benefit and Educational support	1,201,882	---	---	---	---	27,718	27,656	1.00	27,009	1.03
Housing allowance	299,109	185,257	1.61	---	---	4,844	2,514	1.93	3,575	1.36
Housing allowance for pensioners	472,578	323,354	1.46	---	---	11,543	8,129	1.42	11,039	1.05
Social Assistance	191,450	143,397	1.34	---	---	9,214	6,273	1.47	11,416	0.81

Notes: “External source (survey sample)” refers to the estimates from the register restricted to the sample of the survey (EU-SILC). “External source” refers to the estimates from the register related to the persons living at the end of 2009.



Table 83. EUROMOD validation: benefits simulated, 2010

	Recipients (unit)					Expenditure (SEK - millions)				
	EUROMOD	External source (survey sample)	Ratio	External source	Ratio	EUROMOD	External source (survey sample)	Ratio	External source	Ratio
Child benefit	1,035,617	---	---	---	---	25,109	---	---	---	---
Child benefit and Educational support	1,201,882	---	---	---	---	28,438	---	---	27,353	1.04
Housing allowance	287,759	---	---	---	---	4,686	---	---	3,681	1.27
Housing allowance for pensioners	483,965	---	---	---	---	12,121	---	---	11,432	1.06
Social Assistance	186,266	---	---	---	---	9,083	---	---	11,968	0.76

Notes: “External source (survey sample)” refers to the estimates from the register restricted to the sample of the survey (EU-SILC). “External source” refers to the estimates from the register related to the persons living at the end of 2010.

Table 84. EUROMOD validation: benefits simulated, 2011

	Recipients (unit)					Expenditure (SEK - millions)				
	EUROMOD	External source (survey sample)	Ratio	External source	Ratio	EUROMOD	External source (survey sample)	Ratio	External source	Ratio
Child benefit	1,035,617	---	---	---	---	25,109	---	---	---	---
Child benefit and Educational support	1,201,882	---	---	---	---	28,438	---	---	---	---
Housing allowance	277,629	---	---	---	---	4,596	---	---	---	---
Housing allowance for pensioners	478,932	---	---	---	---	12,283	---	---	---	---
Social Assistance	188,286	---	---	---	---	9,300	---	---	---	---

Notes: “External source (survey sample)” refers to the estimates from the register restricted to the sample of the survey (EU-SILC). “External source” refers to the estimates from the register related to the persons living at the end of 2011.



Table 85. EUROMOD validation: benefits simulated, 2012

	Recipients (unit)					Expenditure (SEK - millions)				
	EUROMOD	External source (survey sample)	Ratio	External source	Ratio	EUROMOD	External source (survey sample)	Ratio	External source	Ratio
Child benefit	1,035,617	---	---	---	---	25,109	---	---	---	---
Child benefit and Educational support	1,201,882	---	---	---	---	28,438	---	---	---	---
Housing allowance	326,475	---	---	---	---	6,431	---	---	---	---
Housing allowance for pensioners	483,715	---	---	---	---	12,732	---	---	---	---
Social Assistance	182,270	---	---	---	---	9,221	---	---	---	---

Notes: “External source (survey sample)” refers to the estimates from the register restricted to the sample of the survey (EU-SILC). “External source” refers to the estimates from the register related to the persons living at the end of 2012.



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 Poverty

The overall relative poverty rate based on disposable income simulated in EUROMOD approximates quite well the one based on disposable income reported in EU-SILC. The differences are larger with lower poverty lines and related to the elderly poverty rates which are affected by the oversimulation of the Housing allowance for pensioners and Social Assistance resulting in lower poverty rates simulated by EUROMOD.³

Table 86. EUROMOD validation: poverty rates at different poverty lines, 2007

Percentage of individuals below:	EUROMOD	SILC	Ratio
All			
40%	0.02	0.036	0.52
50%	0.06	0.064	0.87
60%	0.10	0.122	0.85
70%	0.20	0.205	0.98
Children (< 18)			
40%	0.02	0.031	0.65
50%	0.06	0.064	1.01
60%	0.12	0.125	0.94
70%	0.20	0.202	1.01
Elderly (>=65)			
40%	0.00	0.022	0.10
50%	0.02	0.054	0.29
60%	0.07	0.163	0.46
70%	0.31	0.363	0.86
Females			
40%	0.02	0.035	0.56
50%	0.05	0.066	0.83
60%	0.10	0.131	0.80
70%	0.22	0.225	0.97
Males			
40%	0.02	0.036	0.48
50%	0.06	0.062	0.91
60%	0.10	0.114	0.91
70%	0.18	0.185	0.98

Notes: Computed for individuals according to their household disposable income (HDI) equivalised by the “modified OECD” equivalence scale. HDI is either simulated in EUROMOD or reported in EU-SILC.

³ When self-reported Housing allowance and Social assistance are used instead of the simulated amounts, the difference between EUROMOD and SILC poverty rates for the elderly are considerably reduced (e.g. 0.13 instead of 0.007 at 60% of the median).



Without considering any change in the structure of the population, EUROMOD simulates a slightly increase in the poverty rates over the years considered. Note that the changes are larger at 60% of the median and for the elderly. This might reflect that the indices are sensitive to the choice of poverty line. In fact, estimates reported by Eurostat based on EU-SILC (60% of median poverty line) show notable jumps in particular for the elderly poverty rates (from 9.9% based on EU-SILC 2007 to 15.0 based on EU-SILC 2008) which might reveal that the estimates from the survey are affected by sampling and weighting issues over years.

Table 87. EUROMOD validation: poverty rates at different poverty lines, 2007-2012

Percentage of individuals below:		EUROMOD					
		2007	2008	2009	2010	2011	2012
All							
	40%	0.019	0.020	0.021	0.023	0.024	0.024
	50%	0.056	0.060	0.061	0.062	0.062	0.062
	60%	0.104	0.113	0.115	0.118	0.118	0.118
	70%	0.200	0.210	0.211	0.211	0.211	0.213
Children (< 18)							
	40%	0.020	0.022	0.024	0.026	0.026	0.025
	50%	0.065	0.071	0.074	0.072	0.075	0.073
	60%	0.118	0.125	0.129	0.130	0.132	0.130
	70%	0.204	0.211	0.213	0.210	0.218	0.215
Elderly (>=65)							
	40%	0.002	0.003	0.003	0.003	0.003	0.003
	50%	0.016	0.017	0.019	0.021	0.017	0.018
	60%	0.075	0.108	0.105	0.121	0.106	0.107
	70%	0.314	0.349	0.355	0.362	0.338	0.351
Females							
	40%	0.020	0.021	0.022	0.023	0.024	0.024
	50%	0.054	0.058	0.059	0.060	0.061	0.061
	60%	0.105	0.118	0.120	0.126	0.125	0.124
	70%	0.219	0.230	0.232	0.232	0.233	0.233
Males							
	40%	0.017	0.019	0.021	0.022	0.023	0.024
	50%	0.057	0.061	0.064	0.064	0.064	0.064
	60%	0.103	0.109	0.110	0.111	0.112	0.111
	70%	0.181	0.190	0.190	0.189	0.189	0.192

Notes: Computed for individuals according to their household disposable income (HDI) equivalised by the “modified OECD” equivalence scale.

4.2.2 Income inequality

Tables 88 and 89 show the main inequality indices from EUROMOD and SILC. First of all, the Gini index for Original Income is reported from EUROMOD: it is around 0.43 in the years considered. Gini coefficient for Disposable income is just slightly underestimated in EUROMOD, in line with the results about poverty. Overall, disposable equivalised income



(median) at different income deciles simulated by EUROMOD matches quite well the median equivalised income reported in SILC. This is also the case for the mean and median income simulated by EUROMOD.

Table 88. EUROMOD validation: income inequality, 2007

	EUROMOD	SILC	Ratio
Gini Coefficient Original Income	0.429	---	---
Gini Coefficient Disposable Income	0.227	0.242	0.941
Median income per decile			
1	7565.35	7562.46	1.00
2	10153.31	10043.17	1.01
3	11735.95	11797.89	0.99
4	13271.96	13330.75	1.00
5	14824.35	14893.22	1.00
6	16296.23	16419.49	0.99
7	17942.83	18087.70	0.99
8	19924.00	20050.50	0.99
9	22563.75	22717.95	0.99
10	28550.05	28904.17	0.99
Mean income (unequalised)	11616.06	11564.86	1.00
Mean income (equalised)	16616.68	16622.22	1.00
Median income (equalised)	15529.51	15675.11	0.99

Notes: Computed for individuals according to their household disposable income (HDI) equalised by the “modified OECD” equivalence scale. HDI is either simulated in EUROMOD or reported in EU-SILC.

Table 89. EUROMOD validation: income inequality, 2007 – 2012

	EUROMOD					
	2007	2008	2009	2010	2011	2012
Gini Coefficient Original Income	0.429	0.431	0.430	0.429	0.430	0.430
Gini Coefficient Disposable Income	0.227	0.233	0.229	0.231	0.234	0.232
Median income per decile						
1	7565.35	7782.55	7953.28	8165.13	8374.160	8661.378
2	10153.31	10478.98	10812.55	11014.08	11353.328	11791.600
3	11735.95	12166.84	12534.33	12933.13	13325.566	13854.760
4	13271.96	13869.88	14314.11	14712.46	15173.672	15759.440
5	14824.35	15547.30	16032.09	16493.94	17049.484	17694.572
6	16296.23	17136.96	17690.97	18208.20	18755.947	19523.539
7	17942.83	18876.64	19548.76	20109.59	20703.424	21563.467
8	19924.00	20995.86	21741.33	22321.20	23047.051	23973.414
9	22563.75	23836.48	24635.28	25314.71	26219.221	27235.758
10	28550.05	30191.38	31004.09	31978.30	33095.281	34431.770
Mean income (unequalised)	11616.06	12221.54	12529.16	12895.92	13352.589	13849.718
Mean income (equalised)	16616.68	17489.26	17938.19	18467.00	19111.408	19829.587
Median income (equalised)	15529.51	16330.85	16859.31	17325.77	17872.09	18582.39

Notes: Computed for individuals according to their household disposable income (HDI) equalised by the “modified OECD” equivalence scale.



4.3 Summary of “health warnings”

This final section summarises the main findings in terms of particular aspects of the Swedish part of EUROMOD that should be borne in mind when planning appropriate uses of the model and in interpreting the results. In particular:

- Some aggregated variables available in the survey which are very difficult to split without having access to the original source of data (in particular, parents’ allowance at birth, income from capital and property income)
- The lack of information related to negative capital income (with the exception of the interests paid on the mortgage for the main house) and other expenditures affects the simulation of some tax credits
- The identification of those subject to self-employment social contributions is problematic as well as the correct definition of the tax base of the self-employment social contributions
- The assumption of 100% take-up of means-test benefit overestimates both recipients and amount of these benefits.
- The poverty rates simulated by EUROMOD show regular trend over time for the overall population and sub-groups as well, while poverty rates using subsequent versions of EU-SILC data show notable (and suspicious) jumps from one year to the other.

5 REFERENCES

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Handledning för beskattning av inkomst vid 2010 års taxering Del 1, Del2, Del 3