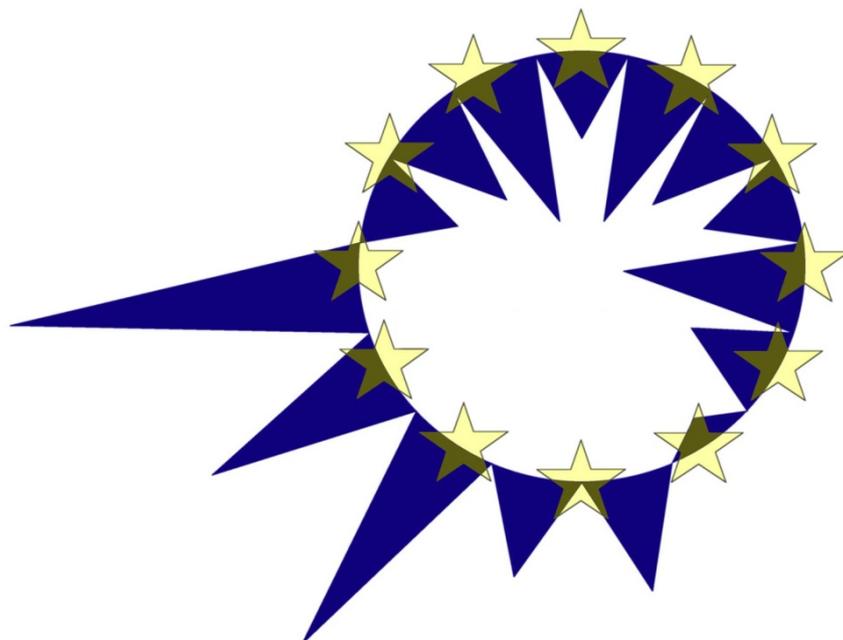# EUROMOD

COUNTRY REPORT

FRANCE

2006 -2010

Vanessa Denis and Alain Trannoy

March 2013

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 France. This work was carried out by the EUROMOD core developer team, based mainly in ISER at the University of Essex, in collaboration with a national team.

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The results presented in this report are derived using EUROMOD version 6.0++. EUROMOD is continually being improved and the results presented here may not match those that would be obtained with later versions of EUROMOD.

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

CONTENTS

1. BASIC INFORMATION

1.1 Basic figures

Table 1.1 Basic figures

	Pop. (m.)	pop. < 15 (%)	pop. ≥ 65 (%)	Life expect. (years)	Fertility rate	Unemp rate	GDP per head (PPP)	Currency Name	exch. rate [1]
2006	63.23	18.6	16.4	80.9	1.998	9.2	25600	Euro	n/a
2007	63.64	18.5	16.3	81.2	1.978	8.4	26900	Euro	n/a
2008	64.00	18.5	16.4	81.3	2.007	7.8	26700	Euro	n/a
2009	64.35	18.5	16.5	81.5	2.004	9.5	25600	Euro	n/a
2010	64.66	18.5	16.6	81.7	2.030	9.7	26500	Euro	n/a

[1] Euro exchange rate on 30th of June.
Source: Eurostat (2013); http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database#

1.2 The tax-benefit system

Table 1.2 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
2006	50.3	44.4	52.7	22.0
2007	49.8	43.7	52.6	21.8
2008	49.9	43.5	52.7	22.2
2009	49.2	42.5	56.77	23.9
2010	49.4	42.9	56.55	23.9

Source: [1]OECD (2013); [2] Eurostat (2013); http://www.oecd-ilibrary.org/taxation/total-tax-revenue_20758510-table2; http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database

Table 1.3 Social protection expenditure by function (as % of total social protection expenditure)

	Sickness/ health care	Disability	Old age	Survivors	Family/ children	Unemployment	Housing	Social exclusion
2006	27.8	6.0	35.4	6.0	8.4	6.6	2.5	1.9
2007	27.7	5.9	36.2	5.9	8.3	6.2	2.4	1.9
2008	27.6	5.9	36.9	5.9	8.2	5.9	2.5	1.8
2009	27.4	5.8	36.8	5.7	8.1	6.4	2.5	2.2
2010	27.4	5.8	36.9	5.7	7.9	6.5	2.4	2.3

Source: Eurostat (2013); http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database

Table 1.4 Taxation (as % of total tax receipts)

	Personal income tax	Corporate income tax	Social security contributions		Taxes on goods and services	Other taxes
			Employees*	Employers		
2006	17.5	6.7	11.9	25.0	24.9	3.2
2007	17.1	6.8	12.0	25.1	24.8	3.3
2008	17.4	6.7	12	25.3	24.6	3.2
2009	17.3	3.5	12.7	26.7	25.1	3.5
2010	17.0	5.0	12.4	26.3	25.0	2.4

* Includes self-employed
Source: OECD (2013); http://stats.oecd.org/Index.aspx?DataSetCode=REV

1.2.1 Basic information about the tax-benefit system

The tax-benefit system in France is mainly a national system where people are taxed in the same way whatever the region they live. There are however exceptions for local taxes as the land tax (*taxe foncière*) and the tax on occupied housing (*taxe d'habitation*) which are defined at the regional level.

For local taxes, the rates are set every year by the local authorities.

The fiscal year runs from 1st of January to the 31ST of December. The tax rules usually change in November each year defining the tax policy of the next year.

The state pension age in 2006 was 60. To receive a full-pension the state pension age was 65.

Recent reforms in 2011 have increased the state pension age to respectively 62 and 67 for the full-pension. The amount pension depends on the number of quarters worked.

The minimum school leaving age is 16.

The conditions to be considered as a social dependent child are:

- To be aged strictly under 20 and to earn less than 55% of the minimum wage
- To be aged under 20 and be disabled

These conditions are used for the calculation of the social benefits.

For both benefit and tax purposes, lone parents are the parents of resident dependent children aged under 18, who

- Do not cohabit with others adults who are not dependant. (disabled)
- Cohabit with adults with whom he could not marry (mother, brother, cousin...)

The income tax system is a jointly system. It is based on a tax group: the "foyer fiscal". The spouses are assessed together. Spouses are either married or have signed a contract of civil partnership (*PACS*).

This tax group consists of one taxpayer plus the persons who are "fiscally" dependent like dependent children, dependent parents.

Children are considered to be fiscally dependent if:

- They are aged under 18 (automatically)

- They are aged strictly under 21 (and they want to be declared with his parents)
- They are aged strictly under 25 and they are students (and want to be declared with his parents)
- They are disabled (automatically whatever is age).

Other adults can be dependent if they are disabled.

All incomes of people on the tax group are combined to calculate the income tax.

In France, there is a system of "*quotient familial*" which is applied before the calculation of the income tax.

The family ratio (*quotient familial*) gives a weight for each person of the tax units.

The family ratio is applied on the total income of the tax group before being subjected to the tax schedule.

Taxpayers have to fill around May in a tax return the total of the revenue of the previous year.

There are two different ways to pay the income tax:

- Evaluated monthly withholding from the amount paid the previous year. The difference between the amount actually paid and the amount payable is adjusted in September.

- 3 payments in the year evaluated from the amount paid the previous year ("Tiers payant"). The third payment is reassessed in September depending on the amount effectively due for the year.

Most of benefits in France are indexing every year to take account of inflation (particularly for social minima).

In the same way, tax brackets and the various amounts involved in tax computation are re-valued to take account of inflation.

Most benefits are paid monthly. Assessed income is previous income (usually quarterly or yearly).

A minimum wage is in place. Values for the 2006-2010 period are shown in Table 5 below.

Table 1.5 Minimum wage

	2006	**2007**	**2008**	**2009**	**2010**
Minimum wage	1 254.28	1 280.07	1 308.88	1 321.02	1 343.77

Notes : euros per month, gross minimum wage
Source: Insee, www.insee.fr/fr/themes/tableau.asp?ref_id=NATnon04145

1.3 Social Benefits

Family Allowance (Allocations Familiales AF): Family allowance is the main children benefit in France. It is granted to household with two or more dependent children. The amount varies with the number of children and their age. There is no condition on the household income.

Mean-tested Young children allowances (Allocation pour jeunes enfants APJE and Prestation d'accueil des jeunes enfants PAJE): These two mean-tested benefits give a complement benefit for

families with children under 3. Until 2007, Family with children under 3 and born before 2004 are eligible to APJE which was progressively replaced by the PAJE (for child born after the 1st of January 2004).

Parental education allowance (Allocation Parentale d'éducation APE) : is a non mean-tested benefit which is given after the birth of the second child and until his 3 years if the person in charge of him stops or reduces his professional activity to raise this child. The allowance was replaced after 2004 by the PAJE with the complement for free choice of activity. For child born after 2004, APE was replaced by the supplement for free choice of activity (PAJE).

Large family benefit (Complément familial): This mean-tested allowance is targeted to family with at least three dependent children aged 3 and over.

Mean-tested education benefit (Allocation de rentrée scolaire ARS): is an annual lump-sum allowance paid for each dependent child aged between 6 and 18. There is an income test. It is an allowance for school children paid in September.

Family support allowance (Allocation de soutien Familial ASF): is not mean-tested. The benefit is given to child under 20 who is not raised by both his parents.

Special education allowance (Allocation d'Education de l'Enfant Handicapé AEEH) : A family is entitled to the allowance if it contains a child under 20 has disability at least 79% or disability between 50% and 80% while attending special school or if his condition requires the use of special education. The benefit amount is increased for lone parents.

Disability benefit (Allocation aux adultes hadicapés AAH): is an allowance for disabled working age adults who cannot work because of disability. There are lower and upper age limits. Persons have to suffer from permanent disability of at least 80% or between 50% and 79% and have difficulties in finding substantial and sustainable employment. It is subject to an income test.

Mean-tested lone parent benefits (Allocation parents isolés API): is a mean-tested benefit for lone parents with children under 3. It was replaced from June 2009 by the RSA.

Mean-tested minimum income (Revenu minimum d'insertion RMI): The minimum income (RMI) is a grant for persons aged between 25 and 65 without resources or with resources below a ceiling set by decree and who are not students. Exception exists for people aged below 25 who have dependent children. It was created to prevent social exclusion for workers trying to reenter the labour market. It was replaced on 1 June 2009 by the Solidarity labor income (RSA). The amount is equal to the difference between the maximum amount of the RMI calculated according to the composition of the household and all family income. The maximum monthly RMI depends on the number of dependent children

Solidarity Labour Income (Revenu de solidarité active RSA): RSA is a benefit to guarantee minimum income for its beneficiaries, whether or not they are able to work. It was introduced on the1st of June 2009. The RSA replaces the minimum income (RMI), the single parent allowance (API), and some lump-sum aids like the grant for temporary return to work. Its aim is to remove the threshold effects, namely a person with social minimum resuming paid work at the minimum wage does not see her income rise. The RSA is an income supplement for working poor and a social minimum for those who do not work.

Return to work allowance (Prime de retour à l'emploi): A financial benefit of re-employment of 1,000 € is allocated under certain conditions to the beneficiaries of the RSA who find a job. Since 1 October 2006, any beneficiaries of the RMI or API, which takes a job with more than 78 hours per month and who is engaged for 4 consecutive months, can receive this bonus of 1,000 euros the end of the 4th month.

Solidarity allowance for the elderly (Allocation de solidarité aux personnes agées ASPA) : provides a minimum pension for persons aged 65 and over with limited resources. It varies according to household income.

Since 1st of January 2006, the minimum pension for elderly (Minimum vieillesse MV) was replaced by the solidarity allowance for the elderly (Allocation de solidarité aux personnes agées ASPA). ASPA replaces a dozen benefits merging into a single allowance (like allowance for elderly employed persons, allowance for elderly non-employed persons, allowance for mothers etc.).

Survivor Minimum Pension (Allocation veuvage): is a minimum pension limited in time (2 years) paid to a spouse of a previously insured person. Benefits are paid to widowed persons, less than 55 years old with resources under a income threshold.

Housing benefit (Aide personnalisée au logement APL): is an aid granted to persons whose principal residence meets certain conditions, to help reduce expenses related to their principal primary residence. It applies only to tenants living in subsidized housing (HLM..) or owners who have to repay certain types of loans (state-subsidized loan). The amount depends on the resources and the rent paid or loan repayment.

Housing benefit (Allocation logement AL): applies to persons not eligible to the APL. This allowance is divided into Allocation de logement familial ALF and Allocation au logement social ALS. ALF is given for tenants and owners if they are eligible to others benefits like Family allowance, Family support allowance. ALS is granted only for the tenants and modulated according to resources of the household and the number of dependent persons.

Contributory Pensions: The pension system in France is based on a PAYG system-current contributions are used to pay pensions for retirees. It is managed by a number of organizations known as pension funds or pension insurance funds, with two components: the basic pension and supplementary pension. Retirees receive a pension which is proportional to the amount of contributions made by them during their career.

Unemployment Benefit: the unemployment compensation system consists of two regimes: the unemployment insurance (RAC) and the National Solidarity Plan (RSN). The RAC is funded by contributions from employees and employers. RSN allows compensating the unemployed who have exhausted their rights to unemployment insurance. The insurance agreement in force at the time of job loss defines the maximum duration of benefits and the amount of the allowance based on past wages.

Sickness Benefit: The Health insurance (l'Assurance Maladie) is one of the four branches of the Social Security (the French social protection system). It manages, at the national level, the disease and accident branches and includes the three main insurance schemes (general, agricultural and independent). It provides protection against five risks: sickness, maternity, disability, death, accidents / illnesses. Its funding is mainly provided by social security contributions on wages (employee and employer charges) as well as social contributions (CSG). Universal health coverage (CMU) offers a basic health insurance for everyone (especially for people who do not meet the criteria for entitlement to Social Security) and supplemental health coverage for people whose incomes are lower.

- *Scope and scale*

Table 1.6 Social benefits: number of recipients

	2004	2005	2006	2007	2008	2009
Family Benefit						
Family Allowance AF	4,061,650	4,337,015	4,353,763	4,638,726	4,658,612	4,682,468
Family Complement CF	791,628	812,392	796,457	813,807	820,893	822,327
Mean-tested education related Family benefit ARS	2,674,881	2,712,786	2,667,995	2,797,804	2,899,364	2,861,844
PAJE	726,318	1,378,634	1,948,142	2,125,535	2,215,765	2,266,845
Including mean-tested bonus for childbirth	619,428	52,289	52,388	53,202	52,861	53,765
Including mean-tested benefit for children under 3	368,097	1,232,064	1,749,620	1,833,882	1,874,864	1,870,213
APE	-	180,321	220,070	194	129	0
Lone Parent						
API	174,472	181,060	189,876	204,304	199,500	29,763
ASF	565,794	591,137	592,370	711,786	705,104	735,916
Housing						
ALF	1,078,549	1,098,266	1,088,707	1,216,984	1,301,125	1,307,006
ALS	2,046,613	2,064,372	2,014,880	2,091,313	2,215,148	2,234,923
APL	2,484,430	2,466,157	2,385,445	2,397,632	2,517,212	2,516,425
Disability						
AEH	115,959	126,418	142,115	145,469	153,043	160,316
AAH	726,967	741,665	745,136	781,972	817,851	851,316
Unemployment	-	-	-			
ARE	2,257,147	2,035,453	1,840,837	1,717,952	1,828,757	2,106,669
ASS	364,300	334,260	357,560	314,398	288,583	308,465
RMI	1,061,005	1,111,374	1,101,372	1,151,180	1,120,527	139,332
Old-age						
Minimum pension for elderly	-	609,400	598,500	586,700	575,200	581,700
Pension	10,400,000	10,700,000	11,100,000	11,500,000	11,900,000	12,200,000

Source: INSEE www.insee.fr/fr/themes/theme.asp?theme=4&sous_theme=6&nivgeo=0&type=2
Pole emploi http://www.pole-emploi.org/communication/les-allocataires-en-2009-
@/communication/coarticle.jspz?id=6752

Table 1.7 Social benefit: expenditure

	2005	2006	2007	2008	2009	2010
Family Benefits	**22,454**	**22,979**	**23,347**	**23,595**	**24,064**	**23,865**
Family Allowance AF	11,952	12,122	12,300	12,342	12,535	12,354
Family Complement CF	1,595	1,597	1,585	1,595	1,629	1,631
Mean-tested education related Family benefit ARS	1,381	1,390	1,381	1,487	1,495	1,510
Family support allowance ASF	1,071	1,099	1,181	1,163	1,257	1,255
PAJE (prime + base)	3,716	4,354	4,601	4,751	4,890	4,911
PAJE (APE)	2,739	2,417	2,299	2,257	2,258	2,204
Social minima : RSA (=API+RMI)+AAH +ASI						
API	**970**	**1,064**	**1,075**	**1,024**	**534**	**-**
AAH	**5,140**	**5,230**	**5,505**	**5,773**	**6,180**	**6,610**
RMI	**5,300**	**5,400**	**5,240**	**5,160**	**5,830**	**-**
ASI	**296**	**303**	**303**	**295**	**277**	**-**
RSA						**6,600**
Housing Benefit (ALF, ALS, APL, etc.)	**13,797**	**14,136**	**14,236**	**15,192**	**15,192**	**15,192**
ALS				**4,658**	**4,628**	**4,915**
APL				**6,374**	**6,449**	**6,869**
ALF	**3,495**	**3,616**	**3,702**	**3,860**	**3,981**	**4,151**
Pension	**195,000**	**206,000**	**217,000**	**228,000**	**-**	**-**
Unemployment	**30,000**	**27,000**	**26,000**	**26,000**	**-**	**-**
ARE		**20,970**	**19,640**	**19,582**	**23,761**	**25,047**
ASS	**1,958**	**2,064**	**1,918**	**1,664**	**1,809**	**1,897**

Notes : million euros

Source: Comptabilité nationale, www.insee.fr, juillet 2010, Tableaux 3.101-3.601
Prestations familiales: Rapport de la Commission des comptes de la sécurité sociale, Septembre 2010 (p.179), Octobre 2009 (p.195),
Allocations logement: Rapport de la Commission des comptes du logement - Edition 2010 (Tableaux 341-343)
Pension and unemployment : DGI

- *Not strictly benefits*

Student grants (Bourse étudiante): The grant is non-taxable and means-tested on parental income. Student must be under 28 years on 1 October of the academic year, and be in education to receive grant. The aid is then awarded based on three criterias: household income tax, the number of children in the family and the remoteness of the place of study.

1.4 Social contributions

General Social Security Contribution (CSG): The general social security contribution is a levy with a social purpose. The CSG is allocated to the social security budget, and specifically to the national family allowance fund, the old-age solidarity fund and compulsory health insurance schemes. The contribution is levied on individual members of a French compulsory health insurance scheme.

Social security debt repayment contribution (CRDS) : The CRDS is intended to clear the deficits of the social security system. Like the CSG, it is payable by individuals who are domiciled in France for tax purposes and who contribute to a French compulsory health insurance scheme.

2% Social contribution and other additional contributions: Individuals are liable to a 2% social contribution, introduced in 1998, on income from personal assets and investment income. The proceeds are allocated to the old-age solidarity fund, the national retirement pension fund and the pension reserve fund.

An additional 0.3% contribution on income from personal assets and investment income, allocated to the national solidarity fund for autonomy (CNSA), was introduced in 2004.

Since 2009, a new 1.1% additional contribution to the 2% social contribution on income from personal assets and investment income was created, intended to fund the earned-income supplement (revenu de solidarité active, RSA).

The base of collection methods for the 2% contribution and the 0.3% and 1.1% additional contributions are similar to those for the CSG relating to the same income.

These contributions are not deductible from the income tax base.

- *Scope and scale*

Table 1.8 Social contributions: revenue

	2005	2006	2007	2008	2009	2010
Total of social contributions	**312.31**	**328.41**	**339.73**	**349.82**	**351.81**	**357.08**
Employer social contributions	221.96	232.50	240.45	248.53	249.86	253.61
Including private sector	147.01	155.29	160.40	165.94	164.08	166.54
Including public sector	74.95	77.20	80.06	82.59	85.78	87.07
Employee social contributions	70.14	74.14	77.06	77.68	77.72	78.88
Self Employee social contributions	20.21	21.78	22.22	23.61	24.23	24.59
CSG+CRDS	82.84	81.81	85.46	88.71	87.18	89.12

Notes: billion euros
Source: 2005-2009: Comptabilité nationale, www.insee.fr, juillet 2010, Tableaux 3.101-3.601 et TEE

1.5   Taxes

Personal Income Tax (Impot sur le revenu des personnes physique IRPP) :
Personal income tax is in principle a comprehensive tax levied on an individual's total income in a given year. Unless otherwise provided, all incomes, regardless of origin, are aggregated to give an overall net income to which a single tax scale is applied.

The scale has progressive income bands However, there are many provisions in method for calculating income tax that allow taxation to be adjusted to personal circumstance. Personal income tax is assessed annually on a tax unit's taxable income in the previous calendar year.

The system of taxation is based on the family quotient: the sum of all household incomes are added together and then divided by the number of shares before being submitted to the tax schedule.

Value Added Tax (Taxe sur la valeur ajoutée TVA): There are 3 main rates: the standard rate of 19.6% (which applies to all taxable transactions for which no other rate exists), the rate of 5.5% (it applies to certain products or goods like food, non-alcoholic beverages etc.), the specific rate of 2.1% (it essentially concerns certain medicines and certain cultural products).

Excise Duty (Droit d'accises): They are charged on alcohol and alcoholic beverages, tobacco and fuel (TIPP).

Wealth tax (*impôt de solidarité sur la fortune* , ISF): is an annual progressive tax payable by individuals on account of their ownership of personal assets, the net value of which exceeds a certain amount (790,000 Euros at 1 January 2009). The tax is assessed on the

household level, which comprises spouses, cohabiting partners, partners of a PACS and minor children).

Inheritance tax (*Droit de successions*): It is charged using a progressive tax schedule. There are many exemptions and deductions related to the type of relationship with the previous owner (spouse, children) and the nature of the donation or bequest.

Housing Tax (Taxe d'habitation TH): Residential premises and their dependencies are liable to housing tax. The tax is payable by any person who, on 1 January of the year of taxation, has taxable premises at their disposal, whatever their status (owner, tenant, free occupier). Housing tax is assessed on the value of residential premises resulting from valuations by the authorities. The amount of tax is calculated by multiplying the tax base by the rates voted by each beneficiary local authority for the year in question

Land Tax (Taxe Foncière TF): is levied annually on land situated in France. Taxable property includes permanent constructions perpetually attached to the ground such as premises intended to accommodate people (residential properties) or business assets (workshops, sheds) etc.
The tax base is the cadastral income, equal to 50% of a theoretical value, regularly updated by the authorities.
The amount of tax is calculated by multiplying the tax base by the rates voted by each beneficiary local authority for the year in question. The tax is payable by the owner of the property at 1 January of the year of taxation

Waste Tax (Taxe sur les ordures ménagères): Communes that collect household waste may introduce a household waste collection tax. When responsibility for waste disposal has been transferred to a public establishment for intercommunal cooperation, it may levy a tax provided that it collects the waste. The tax is assessed on the cadastral income used as the base for property tax on developed land.

Cap Direct Taxes (Bouclier Fiscal): The "tax shield" is a device cap direct taxes since 2007 (for 2007 policy on 2006 incomes), direct taxes paid by a taxpayer may not exceed 60 % of its revenues.
Taxes covered by the cap are: income tax, the ISF, the Housing tax and Land tax payable in the principal residence.

Since October 2007, the ceiling is set at 50% on the amount of income tax, **social contributions, the CSG, CRDS**, the ISF, the Housing tax and Land tax payable in the principal residence.

- *Scope and scale*

Table 1.9 Taxes: taxpayers

	2005	2006	2007
Number of tax units (Personal Income IRPP)	35,106	35,634	36,036
Personal Income Taxpayers	18,889	19,094	19,717
Non-taxable	16,216	16,540	16,319

Notes: thousands
Source: Insee, Direction générale des Finances Publiques.

Table 1. Taxes: revenue

	2005	**2006**	**2007**	**2008**	**2009**	**2010**
Direct Tax						
Corporate Income Tax	40.17	51.64	54.57	52.43	23.05	35.00
Personal Income Tax	161.82	165.94	168.47	175.37	167.63	171.86
including IRPP	136.84	140.11	140.66	148.11	140.28	143.92
including contributions on capital income						
	49.40	52.40	48.60	50.90	45.80	47.36
ISF (Wealth Tax)	82.84	81.81	85.46	88.71	87.18	89.12
Local Tax						
TH (Housing tax)	15.98	17.53	18.91	19.37	19.86	20.28
TF (Land Tax)	40.93	41.93	44.52	44.77	46.51	46.68
Inheritance tax	3.00	3.70	4.40	4.20	3.60	3.68
Indirect Tax						
VAT (plus Excise Duties)	191.91	199.49	204.58	205.56	197.26	197.98

Notes: billion euros
Source: 2005-2009: Comptabilité nationale, www.insee.fr, juillet 2010, Tableaux 3.101-3.601 et TEE

2. SIMULATION OF TAXES AND BENEFITS IN EUROMOD

2.1 Scope of simulation

Not the entire tax-benefit system in France is simulated in EUROMOD. In some cases, adequate data to feed into the simulations is not available. Some examples include lack of information on the contribution history to simulate long-term contributory benefits such as pensions, lack of information on wealth to simulate property taxes etc. As a result, some instruments are not simulated. Instead, the values reported by responded households are taken directly from the underlying microdata. Information about which tax-benefit instruments are simulated and which not, along with information about why some instruments could not be simulated is displayed in tables 2.1 and 2.2.

Table 2.1 Simulation of benefits in EUROMOD

	Variable name(s)	Treatment in EUROMOD					Why not fully simulated?
		2006	2007	2008	2009	2010	
Family allowance (AF)	bch00_s	S	S	S	S	S	
Means-tested allowances for young children (PAJE)	bchyc_s	S	S	S	S	S	
Free choice of activity-PAJE	bchcc_s	S	S	S	S	S	
Large family benefit (CF)	bchlg_s	S	S	S	S	S	
Means-tested education benefit (ARS)	bched_s	S	S	S	S	S	
Family support allowance (ASF)	bchor_s	S	S	S	S	S	Benefit can only be simulated for widows/widowers with underage children; children where one parent has deserted them, as well as children where both parents have died/abandoned the child cannot be identified in the data
Special education allowance (AEEH)	bchot	IA	IA	IA	IA	IA	No information on the disability status of children; included in other benefits for children
Disability benefit (AHA)	bdi_s	S	S	S	S	S	
Means-tested lone parent benefit (API)	bchlp_s	S	S	S	-	-	
Means-tested minimum income (RMI)	bsa00_s	S	S	S	-	-	
Solidarity labour income (RSA)	bsa00_s	-	-	-	S	S	
Return to work allowance	bsaot	IA	IA	IA	IA	IA	No information about previous status before work; no information about continuous employment
Solidarity allowance for the elderly (ASPA)	bsaoa_s	PS	PS	PS	PS	PS	Eligibility is based on observed receipt in the data; although eligibility can be simulated fully, non take-up of the benefit leads to severe overestimation
Survivor minimum pension (AV)	bsuwd	I	I	I	I	I	Simulated but turned off in the baseline; no information about when a person became widowed
Housing benefit (APL)	bhoot	IA	IA	IA	IA	IA	No information on subsidized loans; no information on eligible subsidized tenancies;
Housing benefit (AL)	bhotn_s	S	S	S	S	S	Benefit simulated for rent paying tenants only; benefits paid for owners are included in bchoot
Housing benefit (AL)	bhoot	IA	IA	IA	IA	IA	Benefits for homeowners cannot be simulated; they are included alongside other housing benefits
Contributory unemployment benefit (ARE)	bunct_s	PS	PS	PS	PS	PS	No information on contribution history; eligibility approximated by receipt in the data
Means-tested unemployment benefit (ASS)	bunmt_s	I	I	I	I	I	Simulated but turned off in the baseline; no information on when entitlement to the unemployment contributory benefit expires

Contributory pensions	poa	I	I	I	I	I	No information on contribution history and on past wages
Sickness benefits (AM)	bhl	I	I	I	I	I	No information on days of sickness; no information on previous contribution history
Disability pension	pdi00	I	I	I	I	I	No information on degree of disability; no information on contribution history
Survivor pensions	psu	I	I	I	I	I	No information about contribution history

Table 2.2 Simulation of benefits in EUROMOD

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 2.3 Simulation of taxes and social contributions in EUROMOD

	Variable name(s)	Treatment in EUROMOD					Why not fully simulated?
		2006	2007	2008	2009	2010	
Personal income tax (IRPP)	tin_s	S	S	S	S	S	Some tax allowances and tax credits cannot be simulated due to absence of relevant information in the data
Generalised social insurance contributions (CSG)	tscxc_s	S	S	S	S	S	
Insurance contributions for the repayment of the deficit (CRDS)	tscdf_s	S	S	S	S	S	
Social insurance contributions paid on capital income	tsckt_s	S	S	S	S	S	
Social insurance contributions paid by employees	tscee_s	S	S	S	S	S	Only the general 'regime' is simulated; it is not possible to identify employees belonging to the various 'regimes'
Social insurance contributions paid by employers	tscer_s	S	S	S	S	S	Only the general 'regime' is simulated; it is not possible to identify employees belonging to the various 'regimes'
Social insurance contributions paid by the self-employed	tscse_s	S	S	S	S	S	

Notes: "-" policy did not exist in that year; "E" policy is *excluded* from the model's scope as it is neither included in the microdata nor simulated by EUROMOD; "PS" policy is *partially simulated* as some of its relevant rules are not simulated; "S" policy is *simulated* although some minor or very specific rules may not be simulated.

- ***Structural changes between 2006 and 2007***

There were no structural changes between 2006 and 2007.

- ***Structural changes between 2007 and 2008***

In 2008, the means-tested education related family benefit has been differentiated according to the age of the child.

- *Structural changes between 2008 and 2009*

In 2009, the lone parent means-tested benefit (API) and minimum guaranteed income benefit (RMI) were replaced with a single means-tested benefit (RSA) that is also designed to provide income support to individuals with low work incomes.

- *Structural changes between 2009 and 2010*

There were no structural changes between 2009 and 2010.

2.2   Order of simulation and interdependencies

- *Order of simulation in 2006-2010*

The order in which the components of the tax benefit system in France are simulated is shown in Table 13 below. The order in which simulations take place is largely determined by the existing interactions within the system. For example, net taxable income which served to determine eligibility for many means-tested benefits is simulated before these benefits. Contributory unemployment benefits which are liable to income taxation are simulated before income tax, etc.

Table 2.4 EUROMOD Spine: order of simulation, 2006-2010

Policy	Description	Main output
uprate_fr	Uprating of input data	
constdef_fr	Definition of constants used in the model	
ildef_fr	Definition of standardized income lists	
tudef_fr	Definition of assessment units used in the model	
yse_fr	Recoding of negative values of self-employment income	yse
yem_fr	Minimum wage	yem
bunct_fr	Unemployment insurance benefit (Allocation de retour à l'emploi ARE)	bunct_s
bch00_fr	Universal child benefit (Allocation Familiale AF)	bch00_s
tscee_fr	Employee social insurance contributions	tscee_s
tscer_fr	Employer social insurance contributions	tscer_s
tscse_fr	Self-employed social insurance contributions	tscse_s
tsckt_fr	Social insurance contributions paid on capital income	tsckt_s
bsuwd_fr	Minimum survivor pension (Allocation veuvage AV)	bsuwd_s
tinty_fr	Net taxable income	il_rniy
tscxc_fr	Generalized social insurance contributions (Contribution Sociale Généralisée CSG)	tscxc_s
tinkt_s	Personal income tax when using flat rate taxation of capital income (Prélèvement forfaitaire libératoire PFL)	temp_tingt1
tin_s	Personal income tax when using the progressive tax schedule only and optimization of gross tax	temp_tingt2; tingt_s
tintcee_fr	Low earner refundable tax credit (Prime Pour L'Emploi PPE) & net tax	tintcee_s; tin_s
bdi_fr	Means-tested disability benefit (Allocation aux adultes handicapés AAH)	bdi_s
bunmt_fr	Unemployment assistance benefit (Allocation de solidarité spécifique ASS)	bunmt_s
bchyc_fr	Means-tested beenfit for young children (Plan d´Accompagnement du Jeune Enfant PAJE)	bchyc_s
bchba_fr	Means-tested birth grant (Prime de naissance PN)	bchba_s
bchcc_fr	Parental leave supplement (Complément de libre choix d'activité CLCA)	bchcc_s
bched_fr	Means-tested education grant (Allocation de rentrée scolaire ARS)	bched_s
bchlg_fr	Means-tested benefit for large families (Complément familial CF)	bchlg_s
bchor_fr	Non means-tested benefit for orphans (Allocation de soutien familial ASF)	bchor_s
bhotn_fr	Means-tested housing benefits (Allocation Logement AL)	bhotn_s
bsaoa_fr	Means-tested benefit for the elderly (Allocation de solidarité aux personnes agées ASPA)	bsaoa_s
bchlp_fr	Means-tested benefit for lone parents (Allocation parents isolés API)	bchlp_s
bsa00_fr	Minimum guaranteed income (Revenu minimum d'insertion RMI/Revenue de solidarité active RSA)	bsa00_s
tscdf_fr	Contribution for the deficit repayment (Contribution pour le Remboursement de la Dette Sociale CRDS)_	tscdf_s
output_std_fr	Standard output file at the individual level	
output_std_hh_fr	Standard output file at the household level	

2.3 Social benefits

2.3.1 Family Allowance (Allocation Familiale AF)

- *Definitions*

Dependent Children: are considered as dependent the children aged strictly under 20 and earning less than 55% of the minimum wage.

- *Eligibility conditions*

The benefit is received by the households with two or more dependent children. In case of legal separation or divorce of the parents the beneficiary should be the parent that is in charge of the child.

- *Income test*

There is no income test for this benefit.

- *Benefit amount*

The monthly amount depends on the number of dependent children in the household:

Monthly amount:	2006	2007	2008	2009	2010
2 dependent children	117.72	119.72	120.92	124.54	124.54
3 dependent children	268.54	273.11	275.84	284.12	284.12
Each child after the 3rd	150.83	153.39	154.92	159.57	159.57
Increase for child between 11 and 16	33.11	33.67	34.01	35.53	35.53
Increase for child over 16	58.86	59.86	60.46	62.27	62.27
Amount for children aged 20 (before the 21st birthday)				78.36	78.75

If there are only two children in the household, the increases for child between 11 and 16 and for child over 16 is not paid for the first child.

Families with three children are entitled to a supplementary amount for children who turn 20 but are aged less than 21. The fixed amount paid to families of 3+ children is paid under two conditions:

- One of the children is 20 and lives at home, and
- The family has received benefits for at least three children in the month before the 20th birthday.

- *Compatibilities*

This benefit is compatible with national or regional lump-sum child benefits.

- *Taxation and income testing*

Not taxable and not included in the income test of other benefits, but subjected to CRDS.

- *EUROMOD notes*

The benefit is simulated based on the age of children at the end of the income reference period. No benefit is simulated for children who reach the age threshold during the income reference period as their month of birth is unknown. Similarly, the age-based increase is simulated for the entire year for

children who turn 11 and 16 respectively in the income reference period. The supplement for children aged 20 is simulated for the entire year whenever a person aged 20 (who is not head or partner) is living with at least two dependent children.

2.3.2 Mean-tested Young children allowance (Allocation pour jeunes enfants APJE & Plan d´Accompagnement du Jeune Enfant PAJE)

Mean-tested Young children allowance contains:

- The PAJE (old APJE) (allocation de base): mean-tested benefit for children under 3.

- The baby bonus: mean-tested bonus for childbirth.

- The supplement of free choice of custody: for family with children born after 2004 and aged less than 6 when parents have an activity, under income threshold.

- The supplement for free choice of activity: this allowance replaces the Parent education allowance APE for child born after 2004.

- *Eligibility conditions*

APJE: The benefit is received by the households with children under 3 born **before 2004** (for each child).

PAJE: The benefit is received by the households with children under 3 born **after 2004** (for each child).

- *Definitions*

Dependent Children: are considered as dependent the children aged strictly under 20 and earning less than 55% of the minimum wage. The assessment unit includes parents (married or cohabiting) and their dependent children.

- *Income test*

Family income must be below for the AJPE (child born before the 1ˢᵗ of January 2004):

Annual Amount	2006
Couple with one revenue	
One dependent Child	18,563
Two dependent Children	22,276
Three dependent Children	26,731
Each Child after the 3rd	4,455
Couple with two revenues	
One dependent Child	24,532
Two dependent Children	28,245
Three dependent Children	32,700
Each Child after the 3rd	4,455
Lone parent	
One dependent Child	30,501
Two dependent Children	34,214
Three dependent Children	38,669
Each Child after the 3rd	4,455

The Family income corresponds to the net taxable income of the household (see tax income part), i.e all taxable incomes with certain deductions (deductions of 10% for work expensive "*abattements*", deductible CSG, alimony...)

Concerning the PAJE (Child born after the 1ˢᵗ of January 2004), Family income must be below:

Yearly Amount	2006	2007	2008	2009	2010
One earner couples					
One dependent Child	25,430	32,328	32,328	32,813	33 731
Two dependent Children	30,516	38,794	38,794	39,376	40 477
Three dependent Children	36,619	46,553	46,553	47,251	48 573
Each Child after the 3rd	6,103	7,759	7,759	7,875	8 096
Two earner couples or lone parents					
One dependent Child	33,606	42,722	42,722	43,363	44 576
Two dependent Children	38,692	49,188	49,188	49,926	51 322
Three dependent Children	44,795	56,947	56,947	57,801	59 418
Each Child after the 3rd	6,103	7,759	7,759	7,759	8 096

- *Benefit amount*

The monthly amount per family (and not per child excepted for multiple births) is (the same amount for the APJE and PAJE):

	2006	2007	2008	2009	2010
Monthly Amount	169.04	171.92	173.63	178.83	178.83

- *Compatibilities*

This benefit is compatible with national or regional lump-sum child benefits, excepted with the Family Complement and ASF.

- *Taxation and income testing*

Not taxable and not included in the income test of other benefits, but subjected to CRDS.

- *EUROMOD notes*

Only PAJE (which has higher income thresholds) is simulated. The income test is calculated based on yearly net taxable income during the income reference period (rather than past taxable income). The simulation is based on the age of children at the end of the income reference period. Consequently, no benefit is simulated for children turning three during the income reference period. Conversely, the benefit is simulated for the entire year for children born during the income reference period.

2.3.3   Baby bonus (Prime de naissance PN)

- *Definitions*

Dependent Children: are considered as dependent the children aged strictly under 20 and earning less than 55% of the minimum wage.

- *Eligibility conditions*

Have a child born in the year, or have adopted a child.

- *Income test*

Annual family net taxable income must be below:

Couple with one revenue	2006	2007	2008	2009	2010
One dependent Child	25,430	32,328	32,328	32,813	33 731
Two dependent Children	30,516	38,794	38,794	39,376	40 477
Three dependent Children	36,619	46,553	46,553	47,251	48 573
Each Child after the 3rd	6,103	7,759	7,759	7,875	8 096
Couple with two revenues or lone parents					
One dependent Child	33,606	42,722	42,722	43,363	44 576
Two dependent Children	38,692	49,188	49,188	49,926	51 322
Three dependent Children	44,795	56,947	56,947	57,801	59 418
Each Child after the 3rd	6,103	7,759	7,759	7,759	8 096

- *Benefit amount*

The lump-sum is for each child born in the year:

	2006	2007	2008	2009	2010
Childbirth	845.18	859.29	867.88	893.92	893.92
Adoption	1 690.36	1 719.04	1736.23	1788.32	1788.32

- *Compatibilities*

This benefit is compatible with national or regional lump-sum child benefits.

- *Taxation and income testing*

Not taxable and not included in the income test of other benefits, but subjected to CRDS.

- *EUROMOD notes*

No information exists in the data about adoptions. Only the benefit for childbirth is simulated. The income test is based on current yearly net taxable income rather the previous taxable income.

2.3.4 Supplement for free choice of activity (Complément de libre choix d'activité CLCA)

- *Definitions*

Children are considered as dependent persons if they are aged under 20 and earning less than 55% of the minimum wage.

- *Eligibility conditions*

  - Have at least one child under 3 years of age
  - Stop or partially stop work to take care of the child. The beneficiary must have made social security contributions for 8 quarters out of the previous two years if it is the first child, of the previous 4 years if it is the second child or of the previous 5 years if it is the 3rd + child.

- *Income test*

The benefit is not means-tested.

- *Benefit amount*

If there is one child, the benefit is paid for 6 months from the birth/end of maternity leave. If there are two or more children, the benefit is paid from the birth/end of maternity leave until the month before the 3rd birthday of the youngest.

	2006	2007	2008	2009	2010
Non-receipt of PAJE base amount					
Full rate (stop working completely)	521,85	530.72	536.03	554.88	554.88
Reduce work to < 50%	396.82	403.56	407.6	421.93	421.93
Reduce work to 50-80%	300.08	305.17	308.23	319.07	319.07
Receipt of PAJE base amount					
Full rate (stop working completely)	353.67	359.67	363.27	376.05	376.05
Reduce work to < 50%	228.63	232.52	234.83	243.09	243.09
Reduce work to 50-80%	131.88	134.13	135.46	140.23	140.23

If there are three children and the youngest was born after 01/07/2007, the family can opt for the optional complement for free choice of activity (COLCA) instead of the CLCA if one parent stops work completely for up to one year after the birth. This is paid for a maximum of 12 months after the birth of the youngest child subject to the same contribution requirements as the CLCA at the following rate:

Optional free choice of activity	2006	2007	2008	2009	2010
Non-receipt of PAJE base amount	746.26	758.95	766,53	793.5	793.5
Receipt of PAJE base amount	578.08	587.9	593,77	614.66	614.66

- *Compatibilities*

This benefit is not compatible with paid holidays, maternity/paternity/adoption leave, sick leave or unemployment benefit.

- *Taxation and income testing*

Not taxable and not included in the income test of other benefits, but subject to CRDS.

- *EUROMOD notes*

Detailed information on contribution history is not available. Eligibility is based on fulfilling the contributory requirement of 2 years of contributions during the entire work history. Thus, the difference in contribution requirements between children of different birth orders is not simulated. Amounts are simulated based on eatnings and current working hours. Entitlement to the out of work amount is based on absence of earnings during the entire income reference period. Reduced amounts corresponding to reduced working time are based on current (rather than contemporaneous) working hours. When only one child is present, the benefit is simulated for 6 months during the income reference period conditional on the child being aged 0 (i.e. it is assumed the benefit is paid in the first year after birth) and no entitlement of children aged 1 & 2 is simulated when only one child is present. It is assumed a parent always takes up the optional CLCA if entitled. In practice, this means this benefit is simulated for all entitled parents (i.e. parents who fulfil the contribution requirements and stop working) whose third child is aged 0. It is assumed this benefit is not paid for children aged 1 and 2. The simulation is based on the ages of the children at the end of the income reference period, i.e. benefits received for only part of the year (before a child turns 3 or 1) are not simulated. Only the incompatibility with unemployment benefit is simulated. Since the other benefits are short term ones and no information about their receipt within the year is available, other incompatibilities are not simulated.

2.3.5 Mean-tested education related family benefit (Allocation de rentrée scolaire ARS)

- *Definitions*

Dependent Children: are considered as dependent the children aged strictly under 20 and earning less than 55% of the minimum wage.

- *Eligibility conditions*

Have at least one child aged 6 to 18 who is at school. The child must not earn more 55% of the SMIC.

- *Income test*

The income test depends on the number of dependent children:

Euros per year	2006	2007	2008	2009	2010
One dependent Child	17,299	21,991	21,991	22,321	22,946
Two dependent Children	21,291	27,066	27,066	27,472	28,241
Three dependent Children	25,283	32,141	32,141	32,623	33,536
Each Child after the 3rd	3,992	5,075	5,075	5,151	5,295

The income used here is the net taxable income.

- *Benefit amount*

The benefit is paid by child. The yearly amount depends on the children age from 2008:

Yearly Amount	2006	2007	2008	2009	2010
	269.35	273.92			
6 to 10 years			273.92	282.16	282.16
11 to 14 years			289	297.70	297.70
15 to 18 years			299.08	308.04	308.04

- *Compatibilities*

This benefit is compatible with national or regional lump-sum child benefits.

- *Taxation and income testing*

Not taxable and not included in the income test of other benefits, but subject to CRDS.

- *EUROMOD Notes:*

The simulation is based on current rather than previous taxable income. It used ages of children at the end of the income reference period rather than at the start of the school year.

2.3.6 Family support benefit (Allocation de soutien familial ASF)

- *Definitions*

Children are considered as dependent persons if they are aged under 20 and earning less than 55% of the minimum wage.

- *Eligibility conditions*

Must be a lone parent or other (e.g. grandparent) where the other parent (or both) is deceased or has abandoned the child and does not pay alimony.

- *Income test*

This benefit is not means tested

- *Benefit amount*

The monthly amount is::

Benefit amount	2006	2007	2008	2009	2010
Child living with lone parent	82,36	83,76	85,02	87,14	87,14
Child living with no parents	109,81	111,68	113,36	116,18	116,18

- *Compatibilities*

This benefit is compatible with national or regional lump-sum child benefits.

- *Taxation and income testing*

Not taxable and not included in the income test of other benefits, but subjected to CRDS.

- *EUROMOD notes*

The benefit is simulated only for children of widows/widowers. It is not possible to identify children whose parents have abandoned them. Likewise it is not possible to identify children whose both parents are deceased.

2.3.7   Family Complement (Complément familial CF):

- *Definitions*

Dependent Children: are considered as dependent the children aged strictly under 21 and earning less than 55% of the minimum wage. Children under 21 who are themselves parents may be considered dependent if not receiving family allowances.

- *Eligibility conditions*

Have at least 3 children all aged 3 years and more. The amount is the same for all families regardless of the number of dependent children.

The child must not earn more 55% of the SMIC.

- *Income test*

The income test depends on the number of parents who work from 2008:

Yearly Income	2006	2007	2008	2009	2010
One earner couples	26,285	26,731	33,98133,598	34,489	35,457
Increase for each dependent Child	4381	4,455	5,663	5,748	5,909
Two earner couples or lone parents	32154	32,700	41,569	42,191	43,375
Increase for each dependent Child	4381	4,455	5,663	5,748	5,909

The income used here is the net taxable income.

- *Benefit amount*

The monthly amount is per household:

2006	2007	2008	2009	2010
153.22	155.82	157.38	162.1	162.1

- *Compatibilities*

This benefit is compatible with national or regional lump-sum child benefits except with the APE and PAJE (basic allowance). If the household is eligible to PAJE or APE, the CF is not paid.

- *Taxation and income testing*

Not taxable and not included in the income test of other benefits, but subject to CRDS.

- *EUROMOD notes*

The simulation of the income test is based on current rather than previous net taxable income. The age condition relating to the definition of a child is implemented using the age at the end of the income reference period, i.e. children who turn 21 during the year are not considered to be dependent children. Thus, any partial year entitlements on account of such children are not simulated.

2.3.8 Disabled benefit (Allocation aux adultes handicapés AAH):

- *Definitions*

Adult: To be aged over 20 and less than 60.

Dependent children: aged strictly under 20 and earning less than 55% of the minimum wage

- *Eligibility conditions*

To be disabled with a permanent disability of at least 80% or to be between 50 and 80% disabled and to be unemployable (for medical reasons). The income test is carried out using total couple income; the limit of income test includes dependent children.

- *Income test*

Annual income	2006	2007	2008	2009	2010
Single	7,323.36	7,455.24	7,537.2	8,003.52	8,179.56
Couple	14,646.72	14,910.48	15,074.4	16,007.04	16,359.12
For each child	3,661.68	3,727.62	3,768.60	4,001	4,089.78

- *Benefit amount*

The benefit is differential:

$$AAH = Min(Annual\ Income\ threshold - Family\ income,\ Minimum\ Income)$$

Family income is defined as the monthly net taxable income, used for the establishment the income tax.

The monthly Minimum Income is:

2006	2007	2008	2009	2010
610.28	621.27	628.1	681.63	681.63

There are additional amounts which are allowed with an increasing level of disability. All cannot be simulated.

But there is the increase for independent living (Majoration pour la vie autonome) which is due for disabled who receive AAH at a full rate or AAH as a complement of old age or invalidity (i.e. who do not work). The monthly benefit is:

2006	2007	2008	2009	2010
101.8	103.63	104.77	104.77	104.77

- *Compatibilities*

This benefit is compatible with national or regional lump-sum child benefits excepted with AEEH.

- *Taxation and income testing*

Not taxable and not included in the income test of other benefits. **Not subjected** to CRDS.

- *EUROMOD notes*

No information on the degree of disability exists in the data. The benefit is simulated for all individuals who fulfil the income criterion and report themselves as being disabled (pl030=6). The income test is simulated on current rather than previous taxable income. The increase for independent living is simulated for individuals receiving AAH at the full rate, as well as for individual reporting zero earnings. No other additional amounts are simulated.

2.3.9 Survivor Minimum Pension (Allocation veuvage - AV):

- *Eligibility conditions*

Widow/er not remarried aged under 51 (55 after 2009). This pension is paid during 2 years.

- *Income test*

The monthly widow/er income must be below:

2006	2007	2008	2009	2010
674.21	686.34	693.87	706.41	712.76

The income taken into account includes for the calculation the net taxable income of the widow/er (ie earned income, pensions, unemployment benefit, self-employment and capital income, all in gross term) plus family benefits and AAH.

- *Benefit amount*

The monthly benefit given is:

2006	2007	2008	2009	2010
539.37	549.07	555.1	565.13	570.21

- *Compatibilities*

This benefit is compatible with national or regional benefits.

- *Taxation and income testing*

Taxable like pension income for personal income tax but **not subjected** to CRDS and CSG.

- *EUROMOD notes*

The simulation of this benefit is turned off and the original variable in the dataset used instead in the baseline. There is no information in the input dataset about the year a person has become widowed. As a result, the benefit is simulated for all widows/widowers who pass the income test. The income test is simulated using current rather than past taxable income. Since this benefit is part of taxable income, the original rather than the simulated AAH is used in the income test (As AAH depends on taxable income).

2.3.10 Mean-tested lone parents benefits (Allocation parents isolés API):

- *Definitions*

Dependent Children: are considered as dependent the children aged strictly under 20 and earning less than 55% of the minimum wage.

Lone Parents: are the parents of resident dependent children aged under 18, who

- Do not cohabit with others adults who are not dependant.
- Cohabit with adults with whom he/she could not marry (mother, brother, cousin...)

- *Eligibility conditions*

Entitlement to this benefit is restricted to lone pregnant persons and lone parents raising young children. The benefit is paid until the youngest child becomes three years old.

- *Benefit amount*

The monthly amount per family is calculates according to the following formula:

API =Minimum income - [(family quarterly income / 3) + housing package]

Family quarterly income includes:

- quarterly net taxable income

- all quarterly social minima (RMI, RSA), and family benefits-AF and CF only

A family includes the partner and any dependent children.

The minimum income and the housing package depend on family composition:

	2006		2007		2008	
	Minimum Income	housing package	Minimum Income	housing package	Minimum Income	housing package
Pregnant without child	551.81	50.32	561.18	52.9	566.79	53.75
One dependent child	735.75	100.61	748.24	105.81	755.72	107.5
Two dependent children	919.69	124.52	935.3	130.94	944.65	133.03
Increase for each Child after the 3rd	183.94		187.06		188.93	

The housing package is only deductible when the family receives housing benefits (AL).

- *Compatibilities*

This benefit is compatible with national or regional lump-sum child benefits.

- *Taxation and income testing*

Not taxable and not included in the income test of other benefits but **not subjected** to CRDS.

From June 2009, API was included in the RSA.

- *EUROMOD notes*

No benefit is simulated for pregnant women. To simulate the benefit, age at the end of the income reference period is used. As a result, no benefit is simulated for children who turn three during the income reference period and who thus may be entitlement to the benefit for part of the year. The income test is simulated based on current yearly taxable income rather than previous quarterly taxable income. Thus shorter within year periods of eligibility may be missed. When a family receives housing benefits, the lower between the actual benefits and the housing package is deducted. Lone parents are identified as parents of dependent children without a partner in the dataset.

2.3.11 Mean-tested minimum income (Revenu minimum d'insertion RMI):

- *Definitions*

Dependent Children: Children under 20. Children over 20 years and under 25 living at home may be considered dependent in the RMI sense provided his own income is very low (55% SMIC)..

- *Eligibility conditions*

Have more than 25, or less than 25 with dependent child, and to be aged strictly under 65 (or not qualify for
Minimum Pension for the Elderly (ASPA)).

- *Benefit amount*

The monthly amount is per household:

Minimum income– [(Family quarterly income /3) + housing package)]

The housing package is a lump-sum subtracted only for people who received the housing benefits (AL).

Family quarterly income includes :

- the quarterly net taxable income

- all quarterly social minima (RMI, RSA), and family benefits (AF and CF only)

The minimum income and the housing package depend on family composition:

	2006		2007		2008	
	Minimum income	Housing Package	Minimum income	Housing Package	Minimum income	Housing Package
Single						
Without dependent child	433.06	51.97	440.86	52.9	447.91	53,75
One dependent Child	649.59	103.93	661.29	105.81	671.87	107,50
Two dependent children	779.51	128.62	793.55	130.94	806.24	133,03
Each child after the 2nd	173.22	128.62	176.34	130.94	179.16	133,03
Couple						
Without dependent child	649.59	103.93	661.29	105.81	671.87	107,50
One dependent Child	779.51	128.62	793.55	130.94	806.24	133,03
Two dependent children	909.43	128.62	925.81	130.94	940.61	133,03
Each child after the 2nd	173.22	128.62	176.34	130.94	179.16	133,03

- *Compatibilities*

This benefit is compatible with national or regional lump-sum child benefits.

- *Taxation and income testing*

Not taxable and not included in the income test of other benefits and **not subjected** to CRDS.

In June 2009, RMI has been replaced with Solidarity Labour Income (RSA).

- *EUROMOD notes*

Children aged less than 25, earning less than 55% of SMIC and living with other adults are always considered as dependent. The income test is simulated using current yearly taxable income rather than previous quarterly income. Thus, shorter periods of eligibility may be missed. RMI is simulated in 2006, 2007 and 2008. Only RSA (see below) is simulated in 2009. When a household receives housing

benefits, the lower between the actual benefits and the housing package is deducted. A random non-take up of approximately 40% is also simulated.

2.3.12 Solidarity Labour Income (Revenue de solidarité active RSA):

This benefit was introduced in 2009.

The RSA aims to ensure a minimum income per month. The amount of the benefit is equal to the difference between the maximum RSA (lump sum + 62% of household income from work) and resources (including the package of housing assistance).

The lump-sum is determined by the household composition, and the number of dependent children. The RSA is increased for those who meet the conditions for the previous Mean-tested lone parents benefits (API).

$$RSA = RMI + API$$

RSA is a benefit very similar to RMI. The most important difference lies in the fact that RMI was a benefit designed for the unemployed who exhausted their benefits/ were not seeking work. In contrast, unemployed persons receiving benefits as well as low-paid earners are entitled to RSA[1].

- *Definitions*

Dependent Children: Children under 20. Children over 20 years and under 25 living at home may be considered dependent in the sense RSA provided their own income is very low (below 55% SMIC)..

- *Eligibility conditions*

Be aged over 25 or be a parent of a dependent child and to be aged strictly below 65 (or be exempted from
Minimum Pension for the Elderly).

- *Benefit amount*

RSA = (Minimum income + **62% Family quarterly working income/3**) - (Family quarterly income/3 + housing package)

Family working income is earnings after social insurance contributions and before taxes.

The housing package is a lump-sum subtracted only for people who received the AL. As in the case of RMI, the family quarterly income includes:

- quarterly net taxable income

- all quarterly social minima (RMI, RSA), and family benefits (AF and CF only)

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[1] Before the RMI was made for people without job and who did not receive unemployment benefit because they were inactive and who were not looking for a job. With the RSA, people who receive unemployment benefits could be eligible to RSA. It is also an extension for the "poor" workers. The aim of the RSA is to provide a complement for unemployed who come back to work or for worker with small wages.

The minimum income applicable to a family depends on its composition as follows:

Lone parents with children aged below 3:

	2009		2010	
	Minimum Income	housing package	Minimum Income	housing package
Pregnant without child	583.8	54.56	590.81	55.21
One dependent child	778.4	109.11	787.75	110.42
Two dependent children	913.43	135.03	984.69	136.65
Each Child after the 3rd	135.03		184;04	

All other persons:

	2009		2010	
	Minimum income	Housing Package	Minimum income	Housing Package
Single				
Without dependent child	454.63	54.56	460.09	55.21
One dependent Child	681.85	109.11	690.14	110.42
Two dependent children	818.34	135.03	828.17	136.65
Each child after the 2nd	181.85	135.03	184.04	136.65
Couple				
Without dependent child	681.85	109.11	690.14	55.21
One dependent Child	818.34	135.03	110.42	110.42
Two dependent children	954.73	135.03	966.2	136.65
Each child after the 2nd	181.85	135.03	184.04	136.65

- *Compatibilities*

This benefit is compatible with national or regional lump-sum child benefits.

- *Taxation and income testing*

The RSA is not taxable and not included in the income test of other benefits. However, a share of this benefit is deduced from the PPE (Prime pour l'emploi) - a fully refundable tax credit- the following year.

- *EUROMOD notes*

Children aged less than 25, earning less than 55% of SMIC and living with other adults are always considered as dependent. The income test is simulated using current yearly taxable income rather than previous quarterly income. Thus, shorter periods of eligibility may be missed. Similarly, work income is based on the averaged yearly earnings. When a household receives housing benefits, the lower between the actual benefits and the housing package is deducted. Lone parents are identified as parents of dependent children without a partner in the dataset. Non-take-up is simulated for this benefit based on external information. The non take-up is different according to the labour market status of the family. A non take-up rate of 64% is simulated for families where at least one individual reports earnings and a non take up rate of 38% is simulated for families where no earnings are reported. The simulated non take-up is random.

2.3.13   Solidarity allowance for the elderly (Allocation de solidarité aux personnes agées ASPA):

- *Eligibility conditions*

Persons aged 65 and over with limited resources and retired (not working).

- *Benefit amount*

The benefit is differential at the couple level:

ASPA= Monthly Maximum amount – Quarterly Family income/3

Family quarterly income does not include family benefits or housing benefits (i.e. it includes quarterly net taxable income + AAH)

The maximum income depends on the family situation:

	2006	2007	2008	2009	2010
Single	610.29	621.27	628.1	677.13	708.95
Couple	1094.8	1114.51	1126.77	1147.14	1147.14

The couple amount is applied if at least one person is aged 65 or over.

Compatibilities

This benefit is compatible with national or regional benefits.

- *Taxation and income testing*

Not taxable and not included in the income test of other benefits and not subject to CRDS.

- *EUROMOD notes*

Eligibility for this benefit is restricted to individuals reporting receipt in the data. While it is technically possible to fully simulate the benefit, doing so results in substantial overstimulation of both number of recipients and amounts. The income test is carried out using current yearly income rather than previous quarterly income. The age condition is simulated using age at the end of the income reference period. Thus, a full year worth of benefits is simulated for individuals turning 65 during the income reference period who in reality, would have been entitled only during part of the reference year.

2.3.14   Housing Benefits (Allocation Logement APL and AL)

- *Definitions*

Dependent Children: are considered as dependent the children aged strictly under 21 and earning less than 55% of the minimum wage.

Dependent persons : all the dependent children and disabled close family (parents, grandparents, sisters, brothers…) or parents and grandparents over 65 living in the household who earned less than 55% of the minimum wage.

The unit of assessment is the entire household.

- *Eligibility conditions*

Be a renter and have paid rent.

- *Benefit amount*

The general formula giving the amount of housing benefit is as follows (the same for APL and AL:

$$\text{AL or APL} = L+C-Pp$$

L: real rent in the limit of a certain ceiling
C: lump-sum charge
Pp: minimal personal participation

The system presented is the "general" system applied in the rental sector. We do not take into account the specificities of the calculation on residential homes ("Logement-foyer"), roommates or specific loans.

(1) Real Rent (L):

The real rent is taken into account up to the limit of a monthly ceiling depending on the number of dependent persons and of geographical zone. Older children are not considered dependent persons but their incomes are included in the assessed household income/

Year	2006			2007			2008			2009		
Geographical Zone	I	II	III	I	II	III	I	II	III	I	II	III
Single person	255.68	222.83	208.26	262.84	229.07	214.09	270.09	235.39	220.62	278.06	242.33	227.13
Couple without dependent person	308.37	272.74	253.19	317	280.38	260.28	325.75	288.12	267.46	335.36	296.62	275.35
Lone parent or Couple with one dependent person	348.52	306.91	283.87	358.28	315.5	291.82	368.17	324.21	299.87	379.03	333.77	308.72
Lone parent or Couple with two dependent persons	399.07	351.57	324.56	410.24	361.41	333.65	421.56	371.39	342.85	434	382.34	352.97
Increase for each dependent person	50.54	44.66	40.69	51.96	45.91	41.83	53.39	47.18	42.98	54.97	48.47	44.25

Year	2010		
Geographical Zone	I	II	III
Single person	278.95	243.11	227.86
Couple without dependent person	336.43	297.57	276.23
Lone parent or Couple with one dependent person	380.24	334.84	309.71
Lone parent or Couple with two dependent persons	435.39	383.57	354.10
Increase for each dependent person	55.15	48.73	44.39

The zone depends on the geographical area:

Zone I : Paris region "Ile de France"
Zone II: cities with more than 100 000 inhabitants and Corsica
Zone III: all others cities.

(2) Lump-sum charge (C):

The monthly amount depends on the number of dependent persons:

	2006	2007	2008	2009	2010
Single person or Couple without dependent person	46.97	47.82	49.14	50.59	50.75
Single person or Couple with one dependent person	57.60	58.64	60.26	62.04	62.24
Increase for each dependent person	10.63	10.82	11.12	11.45	11.49

(3) Minimal personal participation (Pp):

Pp is computed as follow:

$$Pp = P0 + Tp*Rp$$

P0 : minimal participation
Tp: Personal participation rate
Rp : Resources

- *P0 minimal participation:*

$$P0 = [8.5\%*(L+C)]$$

The P0 amount is capped at 29 euros in 2006 (30 in 2007 and 31 for 2008 and 2009)

- *Tp Personal participation rate:*

Tp is computed as:

$$Tp=Tf+Tl$$

Tf is given by:

	2006	2007	2008	2009	2010
Single person	3.54%	3.54%	2.83%	2.83%	2.83%
Couple without dependent person	3.94%	3.94%	3.15%	3.15%	3.15%
Lone parent or Couple with one dependent person	3.38%	3.38%	2.70%	2.70%	2.70%
Lone parent or Couple with two dependent persons	2.97%	2.97%	2.38%	2.38%	2.38%
Lone parent or Couple with three dependent persons	2.51%	2.51%	2.01%	2.01%	2.01%
Lone parent or Couple with four dependent persons	2.31%	2.31%	1.85%	1.85%	1.85%
Lone parent or Couple with five dependent persons	2.24%	2.24%	1.79%	1.79%	1.79%
Increase for each dependent person	-0.07%	-0.07%	-0.06%	-0.06%	-0.06%

Tl:
Tl is computes as follow:

$$Rl= L / Rent\ Baseline.$$

The rent baseline is:

	2006	2007	2008	2009	2010
Single person	222.83	229.07	235.39	242.33	243.11
Couple without dependent person	272.74	280.38	288.12	296.62	297.57
Lone parent or Couple with one dependent person	306.91	315.5	324.21	333.77	334.84
Lone parent or Couple with two dependent persons	351.57	361.41	371.39	382.34	383.57
Increase for each dependent person	44.66	45.91	47.18	48.47	48.73

Finally, Tl is obtained by the value of Rl as follow:

$$Tl = Rate * Rl - Rate\ Min$$

With :

RL	2006		2007		2008		2009		2010	
	Rate	Rate Min	Rate	Rate Min	Rate	Rate Min	Rate	Rate Min	Rate	Rate Min
0 to 45%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
45% to 75%	56%	25.20%	56%	25.20%	45%	20.25%	45%	20.25%	45%	20.25%
More than 75%	85%	46.95%	85%	46.95%	68%	37.5%	68%	37.5%	68%	37.5%

- *Rp Resources:*

Rp is defined as the difference between the family income and a lump-sum R0.

R0 is given by (yearly amounts):

	2006	2007	2008	2009	2010
Single person	3,177	3,234	4,116	4,190	4,257
Couple without dependent person	4,549	4,631	5,893	5,999	6,095
Lone parent or Couple with one dependent person	5,427	5,525	7,030	7,156	7,171
Lone parent or Couple with two dependent persons	5,528	5,627	7,161	7,292	7,416
Increase for each dependent person	187	190	242	247	262

The family income is the "**Revenu Brut global" used in the income tax.**

- *Compatibilities*

This benefit is compatible with national or regional benefits.

- *Taxation and income testing*

Not taxable and not included in the income test of other benefits but subject to CRDS.

- *EUROMOD notes:*

Only the general benefit for tenants paying rent is simulated. Benefits for home owners/ tenants in free accommodation are not simulated due to absence of required information in the dataset. The three zones upon which the benefit depends are imputed based on geographical region (db040) and population density (db100). The income used in the income test is yearly rather than quarterly. Also rent paid is calculated using a monthly average of rent paid throughout the entire year.

2.3.15 Unemployment Benefit (Allocation de retour à l'emploi ARE)

- *Eligibility conditions*

Individuals are eligible to unemployment benefit if they have been been in activity at least 6 months during the last 22 months (before 2009) or at least 4 months during the last 28 months (after 2009). To be eligible, the individual must also not have voluntarily quit his job and be must be actively looking for work.

- *Income test*

There is no income test for this benefit. The benefit amount depends on the salaries earned during the last 12 months.

- *Benefit amount*

    The benefit amount depends on:

- the sum of gross earned income received during the last 12 months before the last day worked

- the mode of activity : full-time or part-time.

The calculation of this amount is based on the gross daily reference wage ("Salaire journalier de reference" SJR) with:

    SJR= sum of gross earned income during the last 12 months before the last day worked /

    (365- days of absence or without a contract)

The daily benefit is the maximum between:

40.4% * SJR + Fixed allocation and

57.4% * SJR

For part-time workers, we compute the reduction factor as:

RF= (number of hours worked in part-time work) / (legally number of hour)

Parameters:	2005	2006	2007	2008	2009	2010
Fixed allocation	10,25*RF	10.46*RF	10.66*RF	10,93*RF	11,04*RF	11,17*RF
Minimum Benefit	25,01*RF	25.51*RF	26.01*RF	26.66*RF	26,93*RF	27,25*RF

In every case, the daily benefit cannot be lower than the minimum benefit mentioned in the table below (25.01 euros for 2005) and cannot be higher than 75% of the SJR.

The monthly benefit is the daily benefit multiplied by the number of days in the month.

The benefit duration before 2009 depends on the number of months worked and on the age:

	Before 50	Over 50
At least 6 months during the last 22 months	7 months	7 months
At least 12 months during the last 20 months	12 months	12 months
At least 16 months during the last 26 months	23 months	23 months
At least 27 months during the last 36 months	-	36 months

Since 2009, the benefit duration is based on the rule "one day worked, one day of compensation". The only condition is to have worked at least 4 months in the last 28 months. The maximum duration is 24 months for people under 50 and 36 over 50.

- *Taxation and income testing*

Taxable and included in the income test of other benefits, subject to CRDS and CSG.

- *EUROMOD notes:*

No information exists in the dataset on contribution history. As a result, simulation of eligibility approximates to a large extent observed receipt in the data. The age condition is simulated using age at the end of the income reference period. Thus, individuals who have turned 65 during the period and might have been entitled to the benefit for part of the year are considered ineligible. Previous earnings have been imputed from the observed amount of the received benefit by inverting the benefit rules. The difference between full-time and part-time workers is not simulated as the number of hours worked in the previous year is not observable in the data. All entitled individuals are considered to have worked full time. If the upper limit of the benefit (75% of SJR) is lower than the minimum benefit, the upper limit is enforced based on the assumption that such a situation may arise only for part-time workers for whom the minimum benefit is not properly simulated (i.e. it is oversimulated). Duration of the benefit is simulated assuming the same number of months has been worked in each year as in the current year. Duration of benefit receipt is simulated to be at least the number of months in receipt observed in the data.

2.3.16 Unemployment assitance Benefit (Allocation de solidarité spécifique ASS)

- *Eligibility conditions*

Are eligible to unemployment assistance people who have exhausted their rights to unemployment insurance, who have been in activity at least 5 years during the last 10 years, aged under 60 and actively looking for a job.

- *Income test*

The income taken into account for the income test is the couple's global gross revenue.

The monthly income should be under:

Monthly income	
Single	70 times the daily amount
Couple	110 the daily amount

The computation method equally depends on the same couple income. The benefit is either a lump-sum (full rate) or either calculated differentially. The thresholds are:

Monthly income	**Full Rate**
Single	Under 40 times the daily amount
Couple	Under 80 the daily amount

- *Benefit amount*

The daily benefit amount is :

	2006	**2007**	**2008**	**2009**	**2010**
Daily amount	14.25	14.51	14.74	14.96	15.14

The monthly amount is obtained by multiplying the daily amount by 30.

If the couple income is below the full rate threshold (ie 40 times the daily amount for a single person, 80 times for a couple), the monthly benefit is the daily amount multiplying by 30.

If the couple income is over this threshold the monthly assistance is :

$$30*\text{daily amount} - (\text{Couple income} - \text{Full rate threshold})$$

- *Compatibilities*

This benefit is not compatible with unemployment benefit ARE and RSA.

- *Taxation and income testing*

Taxable and included in the income test of other benefits. Subjected to CRDS.[2]

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[2] **Simulation assumption**: ASS is taxable and at the same time its income test depends on taxes. In order to deal with this circularity, taxes (including income tax and CRDS) are calculated using the data variable and not the simulated variable. The simulated variable is calculated after taxes are computed.

- *EUROMOD notes:*

This benefit is simulated but turned off in the baseline. There is no detailed information about contribution history in the data. The condition of 5 years worked in the last 10 is approximated by checking that the individual has worked at least 5 years throughout his entire work career. It is assumed that all potential recipients are actively looking for work. The exhaustion of contributory unemployment benefits (ARE) is checked by comparing months in unemployment with the imputed/ simulated number of months receiving ARE. The income test is simulated based on current yearly income. Due to time period mismatched, the simulated benefit does not approximate well observed receipt in the data. As such, its simulation is turned off in the baseline.

2.4 Social contributions

Discrepancies exist in regimes of social security depending on employment status of individuals and sometimes on the sector they work.
There are 4 main different social systems in France:
- The regime general for employees
- The regime of self-employed (TNS) runs by independent groups (RAM – CAMPI)
- The agricultural system managed by Mutuelle Sociale Agricole (MSA)
- The local plan Alsace Moselle
- Some specific schemes (SNCF, EDF…)

The most important regime ("régime général") covers employees against the financial consequences of different risks (illness, accident) or situations (family, old age, widowhood). These systems are financed by contributions from both employees and employers (sometimes either one or the other) on wages and related income.

2.4.1 Employee social contributions

Employee social contributions are mainly aimed to finance the Social Security system (Sécurité Sociale)Different types of contributions are paid by employee on the whole gross income:

- Employee contributions to health insurance and widowhood
- Employee contributions to old age
- Employee contributions to unemployment insurance
The different rates depend on the employment status and on the regime.

The different employee social contributions are resumed below:

	Base	2006	2007	2008	2009	2010
Sickness	whole income	0.75%	0.75%	0.75%	0.75%	0.75%
Old Age	Income Group A	6.65%	6.65%	6.65%	6.65%	6.65%
	whole income	0.10%	0.10%	0.10%	0.10%	0.10%
Complementary Pension for non white collars	Income Group 1	3.00%	3.00%	3.00%	3.00%	3.00%
	Income Group 2	8.00%	8.00%	8.00%	8.00%	8.00%
Complementary Pension for white collars	Income Group A	3.00%	3.00%	3.00%	3.00%	3.00%
	Income Group B	7.70%	7.70%	7.70%	7.70%	7.70%
AGFF (Old Age)	Income Group A	0.80%	0.80%	0.80%	0.80%	0.80%
Non White Collars	Income Group 2	0.90%	0.90%	0.90%	0.90%	0.90%
White Collars	Income Group B	0.90%	0.90%	0.90%	0.90%	0.90%
Unemployment Insurance	Income Group A+B	2.44%	2.40%	2.40%	2.40%	2.40%
APEC (White Collars Unemployment)	Income Group B	0.02%	0.02%	0.02%	0.02%	0.02%
	Annual Lump-sum (euros)	*7.46*	*7.72*	*7.99*	*8.23*	*8.31*
Outstanding Contribution (CET) (complementary pension)	Income Group A+B+C	0.13%	0.13%	0.13%	0.13%	0.13%

The income considered on the base column is the gross income on the payroll for all jobs, part time or full-time, occasional or not.

The monthly different ceilings of income groups are:

	2006	2007	2008	2009	2010
Income Group A	0 to 2,589	0 to 2,682	0 to 2,773	0 to 2,859	0 to 2,946
Income Group B	2,589 to 10,356	2,682 to 10,728	2,773 to 11,092	2,859 to 11,436	2,946 to 11,784
Income Group C	10,356 to 20,712	10,728 to 21,457	11,092 to 22,184	11,436 to 22,872	11,784 to 23,568
Income Group 1	0 to 2,589	0 to 2,682	0 to 2,773	0 to 2,859	0 to 2,946
Income Group 2	2,589 to 7,767	2,682 to 8,046	2,589 to 8,319	2,859 to 8,577	2,946 to 8,838

- *EUROMOD notes*

There is not enough information in the dataset to identify to which specific contribution regime an individual contributes. As a result, only the 'regime general' is simulated for all employees. The simulation of the contributions takes into account the number of months an individual has been working during the income reference period recorded in the data but does not take into account any variation in earnings that may have occurred throughout the year. White collar workers have been approximated based on occupation (senior officials and managers and professionals).

2.4.2   Employer social contributions

Like employee, employer is liable for social contributions on medical insurance, pensions, unemployment insurance and additional contributions such as Family contributions and housing.

The rates apply to compute employer social contributions are:

	Base	2006	2007	2008	2009	2010
Sickness	whole income	12.80%	12.80%	12.80%	12.80%	12.80%
Family Benefits	whole income	5.40%	5.40%	5.40%	5.40%	5.40%
Housing	Income Group A	0.10%	0.10%	0.10%	0.10%	0.10%
Old Age	Income Group A	8.30%	8.30%	8.30%	8.30%	8.30%
	whole income	1.60%	1.60%	1.60%	1.60%	1.60%
	whole income	0.40%	0.40%	0.40%	0.40%	0.40%
Complementary Pension for non white collars	Income Group 1	4.50%	4.50%	4.50%	4.50%	4.50%
	Income Group 2	12.00%	12.00%	12.00%	12.00%	12.00%
Complementary Pension for white collars	Income Group A	4.50%	4.50%	4.50%	4.50%	4.50%
	Income Group B	12.60%	12.60%	12.60%	12.60%	12.60%
AGFF (Old Age)						
	Income Group A	1.20%	1.20%	1.20%	1.20%	1.20%
Non White Collars	Income Group 2	1.30%	1.30%	1.30%	1.30%	1.30%
White Collars	Income Group B	1.30%	1.30%	1.30%	1.30%	1.30%
White Collars Contingency	Income Group A	1.50%	1.50%	1.50%	1.50%	1.50%
Unemployment Insurance	Income Group A+B	4.04%	4.00%	4.00%	4.00%	4.00%
APEC (White Collars Unemployment)	Income Group B	0.04%	0.04%	0.04%	0.04%	0.04%
	Annual Lump-sum (euros)	11.18	11.59	11.98	12.35	12.46
Outstanding Contribution (CET)(complementary pension)	Income Group A+B+C	0.22%	0.22%	0.22%	0.22%	
Apprenticeship tax	whole income	0.68%	0.68%	0.68%	0.68%	

The definitions of income groups are the same as employee social contribution mentioned is the previous section.

Likewise, the income base refers to gross employment income.

- *EUROMOD notes*

There is not enough information in the dataset to identify to which specific contribution regime an individual contributes. As a result, only the 'regime general' is simulated for all employees. The simulation of the contributions takes into account the number of months an individual has been working during the income reference period recorded in the data but does not take into account any

variation in earnings that may have occurred throughout the year. White collar workers have been approximated based on occupation (senior officials and managers and professionals).

2.4.3 Self-employed social contributions

For self-employment, the social contributions rates are (depending on the type of self-employment):

	Artisan	Industry and Trader	Farmer
Family Benefits	5.4%	5.4%	5.4%
Sickness	0.6% of r<PSS + 5.9% of r<5*PSS, minimum payment calculated on 0.4*PSS	0.6% of r<PSS + 5.9% of r<5*PSS, minimum payment calculated on 0.4*PSS	10.84%
Supplementary sickness	0.7% of r < 5*PSS, minimum payment calculated on 0.4*PSS	0.7% of r < 5*PSS, calculated on 0.4*PSS	
Pension	16.65% if r<PSS	16.65% if r<PSS	14.37% if r<PSS
			1.64% if r>=PSS
Complementary Pension (compulsory)	7.1% if r<PSS	6.5% if r<3PSS	2.97%
	7.6% if PPS<= r<4PSS		
Professional training contribution	0.24% if r<PSS	0.15% if r<PSS	
Invalidity + death insurance	1.8% if r<PSS	1.3% if r<PSS	

Note: r=gross self-employment income

PSS is the annual Social Security ceiling ("plafond de la sécurité sociale") :

	2006	2007	2008	2009	2010
Annual PSS	31,068	32,184	33,276	34,308	34,620

The rates for professionals are not reported here because there are many professional categories, not subjected to the same system. We can assume that it is the same system than Industry and Trader (the only difference is the pension and complementary pension which is a lump sum depending on the professional class).

The base is the gross self-employment income i.e. gross profit.

- *EUROMOD notes*

The three types of self-employment have been approximated based on industry (Agriculture vs. non agriculture) and occupation (non –agricultural craft and trade workers are assumed to be artisans; the

rest are assumed to be contribute to the industry & trade regime). Contributions are simulated based on the current yearly self-employment income.

2.4.4 General Social contribution (Contribution Sociale Généralisée CSG)

CSG applies to :

- Employement income

- Self-employment income

- Pension Income

- Unemployment Benefit

- Capital income

- Sickness Benefit (only the daily allowances but not the reimbursement for medical procedures)

-

The tax base is the gross income after a reduction of 3% for professional expenses (on Employment Income, Pension Income and Unemployment Benefit but not on Capital Income and Sickness benefits).

Benefits such as ASPA or RMI (RSA) and more general minimum incomes (such as AAH and AV), all the family benefits and all the housing benefits are excluded from the base for CSG.

The tax rate depends on the income source as follows:

	CSG	Deductible CSG
Employment Income	7.5	5.1
Pension Income	6.6	3.8
Unemployment Income	6.2	4.2
Sickness Benefit	6.2	3.8
Capital Income	8.2	5.8

A fraction of paid CSG is deductible for purposes of income tax.

The different rates of CSG have not been modified since 2006.

Certain persons are exempted from CSG. It is the case of pension incomes that fall below an income threshold.

The threshold depends on the tax unit (Quotient Familial). Income refers to the household net taxable income:

Annual Tax Base	2006	2007	2008	2009	2010
1 share	7,165	7,417	9,437	9,560	9,837
Each 0.5 share	1,464	1,981	2,520	2,553	2,627

If pensioners exceed the ceiling above but the income tax is less than 61 Euros, the CSG rate is decrease to 3.8% and totally deductible of income for the tax income calculation. Otherwise the CSG is paid at a rate of 6.6%. If a pensioner has several types of incomes only the pension incomes are exempted from CSG but the income threshold takes into account all his types of income

- *EUROMOD notes*

CSG is simulated on current yearly incomes. The full exception from CSG for pensioners with low incomes is simulated. However, entitlement to the lower CSG rate that is fully deductible for income tax purposes is not simulated.

2.4.5 Social security debt repayment contribution (CRDS)

Like CSG, CRDS is levied on different income categories:

- Employment income

- Self Employment income

- Pension income

- RSA

- Unemployment income

- Family benefits (AF, ARS, CF, PAJE)

- Capital income.

- Housing benefits

- Sickness Benefits (only the daily allowances but not the reimbursement for medical procedures)

Unlike CSG, family benefits are subjected to taxation.
The rate applied is the same for all these categories and amounts to 0.5%
CRDS applies globally on the same basis as CSG, paid on gross income after a reduction of 3%
(except for capital income and sickness benefits).
The CRDS is not deductible for tax purposes.

- *EUROMOD notes*

CRDS is simulated using observed incomes (where they are not simulated in the model) and simulated benefits. The simulation is done using current yearly incomes.

2.4.6 Social contribution on capital income

Others additional social contributions apply on capital (investment & property) incomes as:
- The 2% social contribution : rate of 2% on gross income
- The additional contribution : rate of 0.3% on gross income
- From 2009, a 1.1% contribution is taken on capital income to finance the RSA.

These contributions are not deductible for tax purposes.

- *EUROMOD notes*

These contributions are simulated using observed investment and property income. Current yearly income is used.

2.5   Personal income tax

2.5.1   Tax unit

Personal income tax (IRPP):

The tax unit for income taxation is neither individual nor based on the household. It is known as "Foyer fiscal" which is a sub-group of the household. It consists of one taxpayer plus the persons who fiscally depend on him.

Are grouped in a same unit the spouses (if they are married or have signed a contract of civil partnership (PACS)) and all the dependent children / persons.

Have to be considered as dependent children:

- Children under 18 (automatically)

- Children strictly under 21 (and they agree to be declared with his parents)

- Children strictly under 25 and student (and they agree to be declared with his parents)

- Disable Children (automatically whatever is age).

Other adults can be dependent if they are disabled.

2.5.2   Exemptions

All the Family benefits, social minima (RMI, RSA) and social assistance benefits (AAH) are exempted from taxation.

The only taxable benefit is the survivor pension which has to be considered as pension (AV).

As mentioned in the social contribution part, a share of the CSG can be deducted from income before taxation.

Not all the sickness benefits are taxable. These benefits are composed of cash benefits for the maintenance of an earned income called daily allowances (in case of sick leave, Injury on Duty Leave or maternity leave) and of by the reimbursement of medical, surgical or maternity procedures.

Only the daily allowances are taxable except in case of workplace accidents and benefits paid to people with a disease with prolonged treatment and therapy particularly costly. This amount is added with the earned income.

2.5.3   Tax base

To calculate the tax base called Net taxable income ("Revenu net imposable"), intermediate incomes have to be calculated.

« Revenu Brut global »

The tax base differs according to the income category.

The existing classes are:

- Earned income, pensions (with the exception of ASPA, AAH) and unemployment benefit (C1)
- Self-employment (C2)
- Capital income (C3)

For each class, the non deductible CSG is added to gross income minus the social insurance contributions (as mentioned in the previous section on social contribution).

There are deductions ("*abattement*") for certain categories of income as category C1 (earned income, pension and unemployment).
The reduction amounts to 10% with ceiling deductions (for each earner/ pensioner/ UB recipient):

Yearly Amounts		Income 2005 Taxation 2006	Income 2006 Taxation 2007	Income 2007 Taxation 2008	Income 2008 Taxation 2009	Income 2009 Taxation 2010	Income 2010 Taxation 2011
Earned income	Minimum	382	389	401	413	415	421
	Maximum	12862	13,093	13,501	13,893	13,948	14,157
Unemployment Benefit	Minimum	839	854	880	906	910	924
	Maximum	12862	13,093	13,501	13,893	13,948	14,157
Pension	Minimum	340	352	357	367	368	374
	Maximum	3325	3,446	3,491	3,592	3,606	3,660

The « **Revenu Brut global** » is equal to the sum of all the income classes for all the persons of the tax unit:

SUM (

C1-deduction

+ C2

+ C3

+ Non deductible CSG and CRDS (on C1, C2 et C3))

« Revenu Net global RNG »

From the « Revenu Brut global" we obtain the "Revenu Net global" by removing certain charges (as alimony, investments in particular sector, hospitality expenditures for people over 75 …)

Revenu Net global =Revenu Brut Global - Particular charges (cannot be simulated)

For alimony paid for minor children or ascendants, the deductible amount is not limited and totally deductible.

For alimony paid for adult children (who are declared with his parent), the deductible amount is capped at :

	Income 2005 Taxation 2006	Income 2006 Taxation 2007	Income 2007 Taxation 2008	Income 2008 Taxation 2009	Income 2009 Taxation 2010	Income 2010 Taxation 2011
Complementary reduction	4489	5495	5568	5729	5753	5698

A fixed amount can be deduced without proof for ascendant or major children living in the household:

	Income 2005 Taxation 2006	Income 2006 Taxation 2007	Income 2007 Taxation 2008	Income 2008 Taxation 2009	Income 2009 Taxation 2010	Income 2010 Taxation 2011
Deductible charge	3106	3162	3203	3296	3309	3359

Net taxable Income ("Revenu net imposable")

Net taxable income = "Revenu Net global" – special deductions (disabled people…)

Special Deductions:

For each person 65 and over or disabled in the tax unit, the amount deduction depends on "Revenu Net Global" (RNG) threshold as follow:

2006		2007		2008		2009		2010	
Deduction	RNG	Deduction	RNG	Deduction	RNG	Deduction	RNG	Deduction	RNG
1,706	<10,500	2,202	<13,550	2,266	<13,950	2,276	<14,010	2,312	<14,220
853	<16,950	1,101	<21,860	1,133	<22,500	1,138	<22,590	1,156	<22,930

Family ratio:

To take into account the family size, the taxation system gives a weight to each member of the family, and add them together to compute the Family Ratio ("Quotient Familial" QF).

Person in the Tax unit	Weight
Taxpayer	1
His partner (if married, "PACS")	1
First Child	0.5
Second Child	0.5
Each Child after the Second	1

Supplement weights can be added in specific cases:

- Widow/er with at least one dependent child : +1

- Each Disabled people / Child: +0.5

- Lone parent : +0.5 (if not a widow/er)

QF is the total weight obtained for each tax unit.

Tax Base

The amount which is submitted to the tax schedule is the net taxable income divided by the QF.

Tax Base = Net Taxable Income / QF.

Capital Income:

The prélèvement forfaitaire libératoire (PFL) is a levy that a taxpayer may choose to pay instead of a progressive tax on income from its investments. Its rate does not depend on taxpayer's total income.

	2006	2007	2008	2009	2010
All capital income	16%	16%	18%	18%	18%

2.5.4   Tax schedule

The tax schedule is progressive, as shown in the table below. Income brackets apply to annual income.

2006		2007		2008		2009		2010	
Income Bracket	**Marginal Tax rate**	**Income Bracket**	**Marginal Tax rate**	**Income Bracket**	**Marginal Tax rate**	**Income Bracket**	**Marginal Tax rate**	**Income Bracket**	**Marginal Tax rate**
0 to 5,614	0,00 %	0 to 5,687	0,00 %	0 to 5,852	0,00 %	0 to 5 875	0,00 %	0 to 5,963	0,00 %
5,614 to 11,198	5,50 %	5,688 to 11,344	5,50 %	5,852 to 11,673	5,50 %	5,875 to 11,720	5,50 %	5,963 to 11,896	5,50 %
11,199 to 24,872	14,00 %	11,344 to 25,195	14,00 %	11,673 to 25,926	14,00 %	11,720 to 26,030	14,00 %	11,896 to 26,420	14,00 %
24,873 to 66,679	30,00 %	25,195 to 67,546	30,00 %	25,926 to 69,505	30,00 %	26,030 to 69,783	30,00 %	26,420 to 70,830	30,00 %
Over 66,679	40,00 %	Over 67,546	40,00 %	Over 69,505	40,00 %	Over 69,783	40,00 %	Over 70,830	41,00 %

The tax amount obtained is then multiplied by QF to give the total tax for the tax unit.

Limit on Tax reduction due to Family Ratio ("Plafonnement du quotient familial):

There are corrections to make on the "gross tax" above. The aim is to limit the benefits of dependent children's weight (or dependent adults).

Tax cuts for these additional weights are capped at:

	2006	2007	2008	2009	2010
The two first 0.5 for lone parent	3,800	3,852	3,964	3,980	4,040
Each 0.5 after the second for lone parent	2,200	2,227	2,292	2,301	2336
Each 0.5	2,200	2,227	2,292	2,301	2336

For this, we must recalculate the tax with a new QF:

- 1 for single
- 2 for couples (married or who have signed a PACS)

and subtracting the caps of the table above:

$$\text{Imax} = \text{"new tax" calculated} - \text{ceiling}$$

The tax to pay is therefore the maximum between the "normal" tax liability and "Imax".

Complementary reduction (reduction complémentaire):

If the tax to pay was corrected because of Limit on Tax reduction due to Family Ratio, the income tax is reduced for disabled people. The amount of tax is reduced by the following amounts for each disabled person:

Yearly amounts	Income 2005 Taxation 2006	Income 2006 Taxation 2007	Income 2007 Taxation 2008	Income 2008 Taxation 2009	Income 2009 Taxation 2010	Income 2010 Taxation 2011
Complementary reduction	600	620	622	622	630	651

Tax rebate ("Décôte"):

A (non-refundable) tax rebate is given to any tax unit whose tax to pay is under:

	Income 2005 Taxation 2006	Income 2006 Taxation 2007	Income 2007 Taxation 2008	Income 2008 Taxation 2009	Income 2009 Taxation 2010	Income 2010 Taxation 2011
Tax rebate	800	828	838	862	866	878

This rebate is the difference between this amount and the tax to pay divided by 2.

After all of this, we obtain the gross tax to pay.

2.5.5   Tax credits

The final tax payable is the gross tax minus:

- Tax reductions

- Tax credits

- Employment Bonus (Prime pour l'emploi PPE)

Tax reductions:

Reductions are allowed for charitable spending, school fees for dependent children, specific investments.

Tax credits:

The main tax credits are:

- Tax credits allowed for investment to green (purchase of a clean vehicle, solar panels..).

- Tax credit for interest paid on the loan for acquisition of housing. Since May 2007, people who bought their principal residence can deduct from their income tax during 5 years a certain percentage of interest on the loan. This percentage decreases each year

- Tax credit for childcare fees. Households employing people for the custody of their child can deduct 50% of the amount paid.

- Tax credit for home service employment (tutoring, homemaker…)

All these tax credits are deduced to the tax to pay with a ratio depending on the type and with threshold.

PPE :

The PPE is an individual tax credit established in order to encourage the return to employment and improve earnings that comes from working.

The amount depends on:

- The earned income (employee and self-employment)

- The tax unit income

- The number of hours worked

To be eligible to the PPE, the household "Revenu Brut Global", equally called here Income Tax Reference ("Revenu fiscal de reference"), has to be below:

Yearly amounts	Income 2005 Taxation 2006	Income 2006 Taxation 2007	Income 2007 Taxation 2008	Income 2008 Taxation 2009	Income 2009 Taxation 2010	Income 2010 Taxation 2011
Single Person	12606	16,042	16,251	16,251	16,251	16,251
Couple	25211	32,081	32,498	32,498	32,498	32,498
Increase for each dependent child	3483	4,432	4,490	4,490	4,490	4,490

The PPE is also based on the individual earned income, corresponding to employment income and self-employment income.

For part-time workers, this earned income is converted to full-time equivalent.

The conversion coefficient is defined as: 1820/ yearly number of hours worked for employees or 360/yearly number of days worked for self-employees.

We obtain the earned income full-time equivalent as earned income * conversion coefficient.

To be compared, the self-employment income is multiplied by 1.1111.

The individual earned income threshold is:

Yearly amounts	Income 2005 Taxation 2006	Income 2006 Taxation 2007	Income 2007 Taxation 2008	Income 2008 Taxation 2009	Income 2009 Taxation 2010	Income 2010 Taxation 2011
Minimum income	3570	3,695	3,743	3,743	3,743	3,743
Single person or Couple with two earned revenues	16659	17,227	17,451	17,451	17,451	17,451
Couple with one earned revenue or Lone parent	25376	26,231	26,572	26,572	26,572	26,572

Note that to be considered as in activity, the earned income has to be higher than the minimum income above.

The PPE is measured by the following formulas:

Household situation	Earned income	PPE in full-time equivalent Formula	Increase per household
Single person or Couple with two earned revenues	$M \leq R \leq P0$	**R*7.7%**	ME*number of dependent children
	$P0 < R \leq P1$	**(P1-R)*19.3%**	ME*number of dependent children
Couple with one earned revenue	$M \leq R \leq P0$	**R*7.7% + MF**	ME*number of dependent children
	$P0 < R \leq P1$	**(P1-R)*19.3% + MF**	ME*number of dependent children
	$P1 < R \leq P2$	**MF**	ME
	$P2 < R \leq P3$	**(P3-R)*5.1%**	ME
Lone Parent	$M \leq R \leq P0$	**R*7.7%**	ML*first dependent child + ME*number of children after the first
	$P0 < R \leq P1$	**(P1-R)*19.3%**	ML*first dependent child + ME*number of children after the first
	$P1 < R \leq P3$	**0**	72

With :

Parameters (yearly amounts)	Income 2005 Taxation 2006	Income 2006 Taxation 2007	Income 2007 Taxation 2008	Income 2008 Taxation 2009	Income 2009 Taxation 2010	Income 2010 Taxation 2011
M	3570	3,695	3,743	3,743	3,743	3,743
P0	11899	12,315	12,475	12,475	12,475	12,475
P1	16659	17,227	17,451	17,451	17,451	17,451
P2	23798	24,630	24,950	24,950	24,950	24,950
P3	25376	26,231	26,572	26,572	26,572	26,572
ML	35	36	36	36	36	36
MF	81	82	83	83	83	83
ME	70	72	72	72	72	72

We obtain here the individual **PPE in full-time equivalent**.

To compute the final individual PPE, the PPE in full-time equivalent is divided by the conversion coefficient.

There are two cases for part-time workers:

- If the conversion coefficient is higher than 2, the PPE is increased by 85% :

    *Individual PPE = the PPE in full-time equivalent / conversion coefficient *1.85*

- If the conversion coefficient between 1 and 2, the PPE is computed as:

    *Individual PPE = the PPE in full-time equivalent / conversion coefficient *0.15*

    *+the PPE in full-time equivalent*0.85*

The household PPE is the sum of all the individual PPE increased by the amounts allowed as mentioned in the previous table. The PPE is not payable below 30 Euros.

The income tax may be negative because of various tax credits. Indeed, if the amount of tax credits is greater than the amount of tax due, the difference is refunded to the taxpayer.

The tax is not payable if less than 61 Euros.

Cap on Direct Taxes (Bouclier Fiscal) :

The "tax shield" is a device cap direct taxes since 2007, direct taxes paid by a taxpayer may not exceed 60 % of its revenues.

The 60% relates to:

- Income tax

- ISF

- Housing Tax

- Land tax payable for principal residence

- *EUROMOD notes*

All children under 21 and all students under 25 co-residing with their parents are assumed to be declared on their parents' tax return. No account can be taken of children under 21 /students under 25 who are not co-residing with their parents, as they are not observed in the data. All alimonies paid are assumed to be paid for underage children and thus, they are considered to be fully deductible from the tax base. All children aged 18 and above and dependent adults are assumed to entitle the taxpayer to the specific allowance that may be claimed on their behalf. Disability is based on observed status in the data (pl030=6). In the case of capital income, an optimization is simulated. Both flat rate taxation and inclusion into total income subject to progressive taxation are simulated and the option which yields the lower tax liability is chosen.

No tax reductions and no tax credits are simulated with the exception of the employment bonus. The employment bonus (PPE) is simulated based on current rather than previous year's income. If an individual has both employment and self-employment income, the conversion factor is calculated by summing the partial income source specific factors. Persons who are married but whose partner is missing from the data are considered to be part of a two earner couple. The cap on direct taxes is not simulated due to absence of information on the tax liability under the wealth tax (ISF).

3. DATA

3.1 General description

The French database corresponds to the French part of the European Union Statistics on Income and Living Conditions (EU-SILC) provided by Eurostat. This is a rotating panel survey (9 rotational groups), representative of the French population in private households (all persons aged 16 and over within the household are eligible for the operation), excluding French Overseas Departments and territories.

A random selection of 16,000 households is carried on the master sample from the 1999 census. The sample is stratified to be representative of the French population at the national level.

The survey takes place in the second quarter of the year following the income reference year (from May 14 to June 23 2007).

The French survey used to build the French EU-SILC part is conducted by INSEE (named Statistiques sur les ressources et les conditions de vie (SRCV))

The unit of assessment is the sociological household, defined as the persons living at the same dwelling.

More information on technical issues: http://www.cmh.ens.fr/greco/enquetes/XML/lil-0458.xml

http://circa.europa.eu/Public/irc/dsis/eusilc/library?l=/quality_assessment/quality_reports/fr/2007_intermediate/_EN_1.0_&a=d

Table 3.1 EUROMOD database description

EUROMOD database	FR_2007_a3
Original name	EU-SILC 2007
Provider	Eurostat
Year of collection	2007
Period of collection	May to June 2007
Income reference period	Year 2006
Sampling	Three stage random sampling
Unit of assessment	HH[1]
Coverage	Private households[2]
Sample size	25,907 IND
	10,498 HH

Notes:

[1] One person living alone or a group of people living at the same apartment (address) and sharing expenditures (housekeeping concept). If more than one household was found in a dwelling unit, all hh in selected dwellings were included as eligible for the survey (2% of households in EUSILC are concerned).

[2] Households living at private residential addresses excluding French Overseas Departments and territories.

- The French database is a sample of household created by three stage random sampling.

- The sampling unit was the dwelling, i.e. all persons with usual residence in that dwelling (their only place of residence or their main place of residence) were included in the survey. This includes also foreign nationals and sub-tenants living in the selected dwelling.

Household members at the date of the interview include persons temporarily away if the period of actual or foreseen absence is shorter than 6 months and the person has no other private address. For persons studying away from home, the period of absence may be longer than 6 months, provided that the person has no private address and retains financial ties to other household members.

3.2   Sample quality and weights

3.2.1   Non-response

The fieldwork revealed that among the total of 12,735 dwellings in the sample there were 399 dwellings (0.6 %) that were unoccupied, could not be located or ineligible because the households had moved. Since there was no substitution for these ineligible units, the survey was conducted in 12,336.

The total household response rate was 85.6% (respectively 30.9% and 10.7% for new households and re-interviewed). This rate decreases significantly with the number of years interviewed.

Participation in this survey is voluntary, there is no duty imposed on households to provide the required information. The household must be informed about the content of the survey and that

participation is voluntary and left to their decision. The main reasons for refusal reported from the field are privacy reasons (Refusal to cooperate around 6% and other privacy reasons 2.5%).

3.2.2   Weights

The dataset uses a few types of cross-sectional survey weights, such as (UDB description):
- the household cross-sectional weights (variable DB090) – these weight have been calibrated with the target population of private households and corrected for household non-response.
- the personal cross-sectional weights for all household members of all ages (variable RB050) is used to draw inference on individual basic demographic variables for the population of all individuals living in private households. Because all the current members of any selected household are surveyed, the personal weights RB050 are equal to the corresponding household cross-sectional weight DB090.
- the personal cross-sectional weights for all household members aged 16 and over (target variable PB040) is used to draw inference on the variables included in the personal questionnaire. These weights had to be corrected for individual non-response.

Table 3.2 Descriptive Statistics of the Grossing-up weight

Number	25,907
Mean	2,302.787
Median	1,845.274
Maximum	32,031.14
Minimum	402.56
Max/Min	79.57
Decile 1	903.9493
Decile 9	4,324.627
Dec 9 / Dec1	4.78

French EU-SILC sample statistics has been projected to a reference population of 59,658,314 individuals in 26,306,368 households.

3.2.3   Item non-response and under-reporting

There are no households in the survey that are treated as non-respondent households. Moreover, there are no non-respondent individuals. Consequently, no adjustments have been made to account for non-response to the personal questionnaire.

3.3   Data adjustment

Adjustments to variables are kept to a minimum. There is some minor data cleaning that is done to make sure that the households and relationships of individuals within households, are coherent (for example, that young children are not living alone or family relations are coherent).

In order to guarantee consistency between demographic variables and income variables which refer to the previous year (and on which EUROMOD simulation are based), all children born between the end of the income reference period and the data of interview have been dropped from the sample (104 observations deleted).

3.4   Imputations and assumptions

3.4.1   Time period

The EU-SILC information on demographic variables refers to the time of data collection (May-June, 2007).

However, some information also indicates the status quo at the end of the income reference period (2006). For example, there are two age variables: one of them indicating age at the time of the survey implementation and one at the end of 2006. Similar situation is observed for some socio-economic and labour variables.

For example, variable rb210 (basic activity status) refers to the data collection time, while variable pl070 indicates number of month in full time work during the income reference period (the calendar year of 2006). If possible, the corresponding demographic, labour and socio-economic information in the EUROMOD dataset was based on the EU-SILC variables referring to the income reference period.

The EU-SILC UDB information on incomes refers to the calendar year of 2006, based on a 12-month receipt period. All monetary incomes in the EUROMOD database are converted into monthly terms. In the EUROMOD calculations it is implicitly assumed that income is received at the same rate throughout the year.

3.4.2   Gross incomes

The EU-SILC survey contains information on both gross and net monetary incomes, if applicable. The survey also contains flag variables, which indicate if the observation has been collected either in gross or net form.
In most of cases, the incomes are collected in net terms (excepted for work income which is collected net + CSG and CRDS non deductible).
The gross incomes were recalculated by INSEE by adding the social contributions CSG, CRDS and Employee social contributions (if applicable for work income). These contributions are estimated using inversion of the tax rules.
More information in the Country Quality Report :
http://circa.europa.eu/Public/irc/dsis/eusilc/library?l=/quality_assessment/quality_reports/fr/2007_intermediate/_EN_1.0_&a=d

3.4.3   Other imputed variables

A number of variables necessary for the simulation of tax-benefit system in France are not available in the EU-SILC UDB and, as such, have been fully imputed in the EUROMOD dataset. A list of these variables and the way they have been derived follows:

1) The unemployment benefit in the UDB has been disaggregated into a contributory unemployment benefit (corresponding to ARE) and a means-tested unemployment benefit (corresponding to ASS). The disaggregation has been performed based on benefit rules and average daily benefit amounts derived from the National SILC (SRCV)

2) The aggregate family benefits variable existent in UDB has been split into several components. The universal child benefit (AF) has been separated from the aggregate variable based on benefit rules. Similarly, means-tested child benefits (CF, ARS, PAJE, API) have been disaggregated based on benefit rules and based on the relationship between gross incomes and net taxable incomes derived from SRCV. Residual amounts have been included in a separate variable-other child benefits.

3) Means-tested disability benefits (AAH) have been separated from contributory disability pensions based on the observed amounts of the aggregate variable and policy rules.

4) Means-tested survivor minimum pension (AV) has been separated from contributory survivor benefits by applying benefit rules.

5) Social exclusion benefits have been split into the main social assistance benefit (RMI) and the rest by simulating benefit rules. Any residual amounts are saved in a separate variable-other social assistance benefits.

6) Old-age pensions have been split into contributory pensions and a means-tested benefit for the elderly (ASPA). The splitting has been done based on benefit eligibility rules relating to age and income as well as on the observed amount in the datatset.

7) Employment income during the previous year –for individuals receiving unemployment insurance benefits- has been imputed by inverting benefit rules.

8) The geographical zone variable used in the calculation of the housing benefit (AL) has been imputed based in the region (NUTS 2 level db040) and urbanization (DB100).

3.5   Updating

EUROMOD currently permits the simulation of 5 policy years, i.e. 2006-2010. Currently, all the simulations are done using one datatset, namely FR-SILC 2007 which contains 2006 incomes. Thus the data year and policy years are aligned only in 2006. To correct for the time inconsistency between data and the other polocy years, a set of uprating factors is used. These factors typically correct for changes in the average incomes between the data year and the policy year. Separate factors are used for most income components. Where a factor for a particular type of income coutd not be computed, the average change in the harmonized consumer price index (provided by EUROSTAT) was used. No attempt has been made to correct for demographic and other population changes between the data year and the policy year.

Table 3.3 Updating factors

Income component	2007/2006	2008/2006	2009/2006	2010/2006	Source
default	1.01609	1.04818	1.04926	1.06751	Eurostat - Harmonized Indices of Consumer Prices (HICP)
Employment income(yem)	1.01609	1.04818	1.04926	1.06751	OECD- Labour / Earnings / ; - Average Annual Wages : Current prices in NCU
Self-employment income (yse)	1.0400	1.0556	1.0144	1.0321	INSEE: Fiches thématiques sur les revenus - Les revenus et le patrimoine des ménages - Insee Références - Édition 2011 (Revenus issus de la production des entrepreneurs individuels) ; http://www.insee.fr/fr/ffc/docs_ffc/ref/revpmen11h.pdf
Investment income (yiy)	1.0550	1.1014	1.0133	1.0343	INSEE: Fiches thématiques sur les revenus - Les revenus et le patrimoine des ménages - Insee Références - Édition 2011 (Revenus de la propriété reçus diminués des revenus versés) ; http://www.insee.fr/fr/ffc/docs_ffc/ref/revpmen11h.pdf
Property income (ypr)	1.0129	1.0382	1.0480	1.0564	INSEE: Indicateurs de conjoncture/ Indice de référence des loyers http://www.insee.fr/fr/themes/info-rapide.asp?id=35&date=20110114http://www.insee.fr/fr/indicateurs/ind35/archives/Irl_2009.pdf
Private pensions (ypp)	1.01609	1.04818	1.04926	1.06751	Eurostat - Harmonized Indices of Consumer Prices (HICP)
Income received by children under 16 (yot)	1.01609	1.04818	1.04926	1.06751	Eurostat - Harmonized Indices of Consumer Prices (HICP)
Household transfers received (ypt)	1.01609	1.04818	1.04926	1.06751	Eurostat - Harmonized Indices of Consumer Prices (HICP)
Educational allowances (bed)	1.01609	1.04818	1.04926	1.06751	Eurostat - Harmonized Indices of Consumer Prices (HICP)
Imputed previous wage (yivwg)	1.04000	1.07640	1.08609	1.11976	Eurostat - Labour market / Labour costs ; - Labour cost index - Annual data ; - UNIT: PCH_PRE - Percentage change on previous period
Old-age pensions (poa)	1.01288	1.03816	1.04797	1.05639	INSEE / Revenus et Salaires / Retraites; - Montants des pensions moyennes brutes : Average Gross Pension; http://www.insee.fr/fr/themes/tableau.asp?reg_id=0&ref_id=NATTEF04571
Contributory unemployment benefit (bunct)	1.03500	1.04850	1.06210	1.09390	DARES / Pole Emploi; www.pole-emploi.org/.../note_salaires_et_taux5758026306355192594.doc
Means-tested unemployment benefit (bunmt)	1.03500	1.04850	1.06210	1.09390	DARES / Pole Emploi; www.pole-emploi.org/.../note_salaires_et_taux5758026306355192594.doc
Universal child benefit (bch00)	1.017	1.0272	1.0579	1.0579	Based on policy rules
Means-tested benefit for young children (bchyc)	1.017	1.0272	1.0579	1.0579	Based on policy rules
Means-tested education benefit (bched)	1.017	1.0272	1.0579	1.0579	Based on policy rules

Means-tested benefit for large families (bchlg)	1.017	1.0272	1.0579	1.0579	Based on policy rules
Means-tested benefit for lone parents (bchlp)	1.017	1.0272	1.0579	1.0579	Based on policy rules
Other child benefits (bchot)	1.017	1.0272	1.0579	1.0579	Based on policy rules
Rent expenditures (xhcrt)	1.01288	1.03816	1.04797	1.05639	INSEE: Indicateurs de conjoncture/ Indice de référence des loyers http://www.insee.fr/fr/themes/info-rapide.asp?id=35&date=20110114http://www.insee.fr/fr/indicateurs/ind35/archives/Irl_2009.pdf;
Other housing related expenditures (xhcot)	1.01715	1.08612	1.04346	1.09091	"Based on the the change in the ration between total energy and other charges & number of main residences:; http://www.statistiques.developpement-durable.gouv.fr/publications/p/references/comptes-logement-edition-2012-partie.html; http://www.insee.fr/fr/themes/tableau.asp?reg_id=0&ref_id=NATnon05236";
Mortgage interest expenses (xhcmomi)	1.01609	1.04818	1.04926	1.06751	Eurostat - Harmonized Indices of Consumer Prices (HICP)
Household disposable income (yds)	1.00993	1.02190	1.02336	1.02832	INSEE / Revenus et Salaires / Revenus - Niveaux de vie - Patrimoine; - Revenu disponible par ménage (moyenne et médiane) : Average disposable income; http://www.insee.fr/fr/themes/tableau.asp?reg_id=0&ref_id=natsos04202;
Tax on properties (tpr)	1.02891	1.06414	1.13447		Based on average annual tax ; Direction Générale des Impôts ; http://www.impots.gouv.fr/portal/dgi/public/statistiques.impot?espId=-4&pageId=stat_publications&sfid=4501
Minimum guaranteed income (bsa00)	1.01741	1.03429	1.04981	1.06242	Based on the change in the maximum amount for a single person
Other means-tested benefits (bsaot)	1.00951	1.02508	1.04290	1.04957	Weighted average of departamental social aid benefits ; DREES; http://www.sante.gouv.fr/IMG/pdf/er792.pdf
Means tested disability benefit (bdi)	1.01801	1.02920	1.11691	1.11691	Based on changes in the maximum amount of AAH
Means-tested survivor benefit (bsuwd)	1.01798	1.02916	1.04776	1.05718	Based on changes in the monthly AV benefit
Sickness benefit (bhl)	1.02608	1.04975	1.06717	1.08932	OECD- Labour / Earnings /
Survivor pensions (psu)	1.03003	1.07006	1.08826		INSEE / Revenus et Salaires / Retraites
Disability pensions (pdi00)	1.03003	1.07006	1.08826		INSEE / Revenus et Salaires / Retraites
Housing benefits for tenants (bhotn)	1.028	1.05637	1.08751	1.09101	Based on change in the base rent for single person;
Other housing benefits (bhoot)	1.028	1.05637	1.08751	1.09101	Based on change in the base rent for single person;

Maintenance payments (xmp)	1.01609	1.04818	1.04926	1.06751	Eurostat - Harmonized Indices of Consumer Prices (HICP)
In-kind fringe benefits (kfb)	1.02608	1.04975	1.06717	1.08932	OECD- Labour / Earnings /
Imputed rent (kivho)	1.01288	1.03816	1.04797	1.05639	INSEE: Indicateurs de conjoncture/ Indice de référence des loyers http://www.insee.fr/fr/themes/info-rapide.asp?id=35&date=20110114http://www.insee.fr/fr/indicateurs/ind35/archives/Irl_2009.pdf
Financial capital (afc)	1.055	1.10142	1.01331		NSEE: Fiches thématiques sur les revenus - Les revenus et le patrimoine des ménages - Insee Références - Édition 2011 (Revenus de la propriété reçus diminués des revenus versés) ; http://www.insee.fr/fr/ffc/docs_ffc/ref/revpmen11h.pdf
Contributions to private pension plans (xpp)	1.01609	1.04818	1.04926	1.06751	Eurostat - Harmonized Indices of Consumer Prices (HICP)
Tax adjustments (tad)	1.01609	1.04818	1.04926	1.06751	Eurostat - Harmonized Indices of Consumer Prices (HICP)
Taxes and social insurance contributions (tis)	1.01609	1.04818	1.04926	1.06751	Eurostat - Harmonized Indices of Consumer Prices (HICP)
Previous employment income (yempv)	1.03428	1.06126	1.08574	1.10376	Based on change in average annual earnings (2005 base); Source: OECD/ Labour / Earnings / - Average Annual Wages : Current prices in NCUhttp://stats.oecd.org/Index.aspx?QueryId=25148
Means-tested old-age benefit (bsaoa)	1.01799	1.02918	1.10952	1.16166	Based on the increase in the maximum benefit for a single person (benefit rules)

Notes:

4. VALIDATION

4.1 Aggregate Validation

The definition of disposable income used in EUROMOD differs slightly from the concept of disposable income calculated in SILC. More specifically, in EUROMOD we add income from private pension plans and since all taxes and benefits are calculated 'exactly' via simulation we disregard tax adjustment repayments. We also do not add the value of the company car to the final household disposable income.

Table 4.1 Components of disposable income

	EUROMOD [2006-2010]	EU-SILC [2007]
	ils_dispy	HY020
Employee cash or near cash income	+	+
Employer's social insurance contribution	0	0
Contributions to individual private pension plans	0	0
Cash benefits or losses from self-employment	+	+
Pension from individual private plans	+	0
Unemployment benefits	+	+
Old-age benefits	+	+
Survivor' benefits	+	+
Sickness benefits	+	+
Disability benefits	+	+
Education-related allowances	+	+
Income from rental of a property or land	+	+
Family/children related allowances	+	+
Social exclusion not elsewhere classified	+	+
Housing allowances	+	+
Regular inter-household cash transfer received	+	+
Interests, dividends, etc.	+	+
Income received by people aged under 16	+	+
Regular taxes on wealth	-	-
Regular inter-household cash transfer paid	-	-
Tax on income and social contributions	-	-
Repayments/receipts for tax adjustment	0	+
Company car	0	+

Notes: a value of 0 is used to denote that the respective income concept does not enter the calculation of household disposable income;

4.1.1   Validation of incomes inputted into the simulation

A comparison of the number of employed and unemployed derived from the underlying EUROMOD microdata with external benchmark is presented in Table 4.2. The match is reasonably good during 2006-the year of the data and slightly worse in 2007 and 2008, especially in the case of the unemployed. No adjustments are made in EUROMOD to population characteristics other than income and so employment and unemployment changes taking place after 2006 are not reflected in EUROMOD data.

	EUROMOD	EU-SILC

Table 4.2 Number of employed & unemployed (in thousands)

	Input dataset (I)	External Source (II)					Ratio (I/II)				
	2006	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Number of employed	24168.38	25116.70	25556.80	25895.30	25651.80	25692.30	0.96	0.95	0.93	0.94	0.94
Number of unemployed	2861.42	2608.00	2382.00	2231.00	2758.00	2841.00	1.10	1.20	1.28	1.04	1.01

Notes: Number of employed and unemployed computed based on months in employment/unemployment. Numbers computed as averages of monthly data over the year.
Sources: EUROMOD 6.0++ ; external statistics- LFS, Eurostat Database, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database

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

	Input database (I)	External Source (III)					Ratio (I/III)				
	2006	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Original income											
Employment income	25412.6	23793.9	24130.3	23966.7	2744.8	23859.5	1.07	1.05	1.06	1.07	1.07
Self-employment income	2157.7	2336.0	2355.2	2371.1	2376.6	2382.2	0.92	0.92	0.91	0.91	0.91

Notes: In EUROMOD-number of employees and self-employed are computed as total number of individual who have received any employment /respectively self-employment over the year; the external statistics represent the number of individuals in employment/self-employment on the 31st of December of the corresponding year.
Sources: EUROMOD 6.0++ and INSEE-Emploi salarié et non salarié au 31 décembre
 http://www.insee.fr/fr/themes/tableau.asp?ref_id=natnon03146

Table 4.3 displays the number of recipients of employment and self-employment income both in EUROMOD and in external administrative data. Note that the concepts used in EUROMOD and in external statistics are slightly different. In EUROMOD, the number of employees/ self-employed is computed as the sum of all individuals who receive some employment/ self-employment income over the year. Instead, the external data refer to the numbers recorded at a given point in time, i.e. on the 31st of December of the corresponding year. As such, one should expect slightly higher figures in EUROMOD compared to administrative statistics. Indeed, this is the case with employment income – which is recorded to be approximately 5-7 ppt higher in EUROMOD. The opposite is true however in the case of self-employment income, i.e. self-employment income as recorded in administrative statistics is higher than the one recorded in EUROMOD, suggesting that self-employment income may be underreported in SILC.

Table 4.4 repeats the same comparisons, but using amounts instead of number of recipients. Average gross employment income in EUROMOD is about a third lower compared to the external benchmark. One possible explanation is the fact that the external data refers to average wages computed on a full-

time basis whereas EUROMOD uses all employees (both part-time and full-time as well as persons with partial spells of non-employment) to determine the average. Nonetheless, not only average employment income but also total employment income is underestimated in SILC compared to external statistics, suggesting possible income underreporting in SILC or possibly the inability of SILC to capture high income earners. Total self-employment income in SILC is relatively close to the external figure. Both investment and property income appear to be underestimated in SILC compared to external administrative data.

Table 4.4 Market Income-Aggregate amounts (in million Euros)

	Input (I)	External source (III)	Ratio (I/III)	Uprated input (I)				External source (III)				Ratio(I/III)			
	2006	2006	2006	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Original income															
Employment income -mean	21854.27	32098	0.68	22424.2	22941.6	23322.2	23806.3	32935	33695	34254	34965	0.68	0.68	0.68	0.68
Employment income -total	555374.6	692256	0.80	569857	583007	592679	604981	720576	743017	743367	760703	0.79	0.78	0.80	0.80
Self-employment income	66979.3			69658.4	70703.3	67945.8	71501.1	69658.4	70703.3	67945.8	n/a	1.04	1.05	0.90	n/a
Investment income	227123	36238	0.63	23962	25016	23015	24246	39631	31325	n/a	n/a	0.60	0.80	n/a	n/a
Property income	12928	23293	0.56	13094	13421	13548	13657	24648	25591	n/a	n/a	0.53	0.52	n/a	n/a

Notes: Average employment income is on calculated on a yearly basis ; Average employment income in EUROMOD is calculated using all employees, irrespective of the number of months/ or hours worked during the year ; average employment income in external sources is calculated on a full-time basis. n/a- not available

Sources: L'annuaire statistique de la Direction générale des finances publiques, http://www2.impots.gouv.fr/documentation/statistiques/annuaire2009/pages_web/statistiques2009.htm

Table 4.5 Non-simulated taxes and benefits-Number of recipients/payers (in thousands)

	Input database (I)	External Source (III)					Ratio (I/III)				
	2006	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Pensions											
Old-age pension	12765	13640	14020	14418	14740	15080	0.94	0.91	0.89	0.87	0.85

Sources: EUROMOD 6.0++; INSEE, statistics on incomes and wages, http://www.insee.fr/en/themes/theme.asp?theme=4&nivgeo=0&type=2

Table 4.6 Non-simulated taxes and benefits-Aggregate amounts (in million Euros)

	Input (I)	External source (III)	Ratio (I/III)	Uprated input (I)				External source (III)				Ratio(I/III)			
	2006	2006	2006	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Pensions															
Old-age pension	205821	179971	1.14	208472	213675	215693	217427	190907	203090	211137	220128	1.09	1.05	1.02	0.99
Disability pension	5476.4	8318	0.66	5640.9	5860.1	5959.8	5846.1	8573.0	8759.0	8795.0	8918.0	0.66	0.67	0.68	0.66
Survivor pension	3951.5	35406.0	0.11	4070.2	4228.4	4300.3	4218.3	36406.0	36850.0	37969.0	37148.0	0.11	0.11	0.11	0.11
Benefits															
Sickness benefit	6670.4	9597	0.70	6844.3	7002.3	7118.4	7266.2	9944	10438	10783	11560	0.69	0.67	0.66	0.63
Other child benefits	6952.0	5,463	1.27	7070.2	7141.1	7354.5	7354.5	5638	5927	6257	6437	1.25	1.20	1.18	1.14
Taxes															
Property taxes	1415.13	1602.48	0.88	1456.05	1505.90	1605.43	1510.67	1697.89	1779.08	1872.75	1933.20	0.86	0.85	0.86	0.78

Notes: Other child benefits are a residual variable after simulated child benefits have been separated from the harmonized SILC variable; they include less widespread benefits as parental education allowance, allowances for specialised education, adoption allowances etc. external data refer to regional child benefits; property taxes in external data refer to the 'Taxe Foncière'.

Sources: EUROMOD 6.0++; INSEE, statistics on incomes and wages, http://www.insee.fr/en/themes/theme.asp?theme=4&nivgeo=0&type=2, DGFiP, Statisitcs on regional taxes , http://www.impots.gouv.fr/portal/dgi/public/statistiques.donnees_detaillees?espId=-4&pageId=stat_donnees_synthetiques&sfid=4502

Not all benefits and taxes are simulated in EUROMOD. Instead, when enough information to carry out a credible simulation is lacking, these income components are taken directly from the underlying micro-data.

Table 4.5 compares the number of recipients of non-simulated benefits in SILC to external administrative information. Unfortunately, only the total number of pension recipients could be retrieved from administrative statistics. It is clear from the figures presented in the table that SILC approximates reasonably well the existing number of pensioners, especially in the earlier years. The worsening of the match in the later policy years is likely due to the fact that no adjustment is made to account for rising numbers of pensioners across time.

Table 4.6 displays information on the amounts of non simulated policy instruments both in EUROMOD and as in national administrative data. Whereas old-age pensions are slightly overestimated in EUROMOD, especially in 2006, disability and survivor pensions are clearly well underestimated. This pattern is probably explained by SILC aggregating all benefits received by people over 65, irrespective of their nature, into old-age pensions. Thus, disabled people and widows over 65 receiving disability and survivor benefits respectively appear to be receiving old-age pensions in EUROMOD. In later years, the overestimation of old-age pensions in EUROMOD drops. Arguably this is because EUROMOD does not take into account increases in the number of pensioners.

Sickness benefits are also strongly underestimated in EUROMOD. It is not entirely clear what the reason is. The underestimation closely resembles that of employment income. Finally, non-simulated child benefits appear to be slightly overestimated in EUROMOD. However, note that the EUROMOD variable contains more benefits than the external benchmarks (related to child disability, adoption, parental care etc.). It has not been possible to reconstitute exactly the EUROMOD variable using external administrative data.

The only non-simulated taxes in EUROMOD are property taxes. The total amount of tax properties paid is relatively well approximated in EUROMOD compared to administrative statistics. The exception is 2010 when the value of property taxes is underestimated in EUROMOD. It is possible that uprating factors do not properly account for changes in the structure of property taxation in France and this shortcoming is driving this result.

4.1.2   Validation of outputted (simulated) incomes

Numbers of recipients / payers of simulated taxes and benefits are shown in Table 4.7. Figures in the table indicate that with the exception of means-tested benefits for lone parents (API), family benefits are well captured in EUROMOD relative to external benchmarks. In the case of means-tested benefits, simulated numbers of recipients are slightly below administrative figures. It is possible that this slight underestimation is due to EUROMOD using current instead of previous year's income to establish eligibility. Since incomes usually rise, some eligible parents may be missed by EUROMOD. Unfortunately, no information exists in SILC relating to previous year's incomes. The underestimation of means-tested benefits for lone parents is much more severe. The simulated number of recipients in EUROMOD is only about a third of the external figure. It is not clear what causes this underestimation. In the absence of adequate data, the parental leave benefit has been simulated using very 'liberal' assumptions. Clearly these assumptions are not entirely warranted as the number of benefit recipients is simulated to be approximately three times the number reported in administrative data. Conversely, only a fraction of children entitled to the benefit for orphans could be simulated in EUROMOD. This is evident in the fact that beneficiaries of this transfer are strongly under-simulated.

Means-tested disability allowances are also undersimulated in EUROMOD. We hypothesize that this is due to the disability status variable in SILC. In all likelihood, it fails to capture a large share of individuals entitled to disability benefits. The number of beneficiaries of housing allowances appears to be overestimated in EUROMOD. However, note that it has not been possible to construct entirely comparable figures for EUROMOD results using external data. Even when simulating random non-take-up, the number of recipients of RMI is slightly overestimated in 2006. The overestimation is much stronger once RSA is introduced. The opposite occurs in the case of old-age benefits. However, in this case eligibility is conditioned by observed receipt in the data, *in addition* to all applicable eligibility

Table 4.7 Simulated taxes and benefits-Number of recipients (in thousands)

	Input database (I)					Original data (II)	Ratio (I/II)	External source (III)					Ratio (I/III)				
	2006	2007	2008	2009	2010	2006	2006	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Benefits																	
AF	4405.0	4403.2	4403.2	4411.9	4411.9	4284.5	1.03	4353.8	4638.7	4658.6	4682.5	4437.8	1.01	0.95	0.95	0.94	0.99
PN	535.03	594.95	593.71	594.95	594.95	N/A	N/A	628.66	638.42	634.33	645.18	607.13	0.85	0.93	0.94	0.92	0.98
ARS	2034.5	2658.3	2578.1	2601.4	2639.3	2114.3	0.96	2668.0	2797.8	2899.4	2861.8	2693.0	0.76	0.95	0.89	0.91	0.98
CF	789.40	787.52	833.93	839.89	839.89	787.64	1.00	796.46	813.81	820.89	822.33	789.15	0.99	0.97	1.02	1.02	1.06
API	67.37	67.37	63.34	-	-	58.76	1.15	189.88	204.30	199.50	-	-	0.35	0.33	0.32	-	-
PAJE	1510.6	1700.8	1695.3	1700.4	1703.3	1472.4	1.03	1749.6	1833.9	1874.9	1870.2	1810.0	0.86	0.93	0.90	0.91	0.94
CLCA	1704.5	1702.8	1702.8	1702.8	1702.8	N/A	N/A	578.24	571.84	561.50	547.68	745.00	2.95	2.98	3.03	3.11	3.20
ASF	100.48	100.48	100.48	100.48	100.48	N/A	N/A	N/A	726.00	719.00	750.00	745.00	N/A	0.14	0.14	0.13	0.13
AAH	268.12	272.65	269.58	273.40	275.81	823.44	0.33	745.14	781.97	817.85	851.32	915.00	0.36	0.35	0.33	0.32	0.30
AL	3748.7	3797.2	4969.9	5119.4	4986.5	7036.9	0.53	2385.5	2397.6	2517.2	2516.4	2519.8	1.57	1.58	1.97	2.03	1.98
RMI/RSA	1442.7	1508.1	1498.0	3315.3	3265.7	1213.8	1.19	1101.4	1151.2	1120.5	1100.2	1162.4	1.31	1.31	1.34	3.01	2.81
ASPA	253.03	255.37	255.37	255.37	255.37	303.24	0.83	598.50	586.70	575.20	581.70	574.60	0.42	0.44	0.44	0.44	0.44
ARE	2898.2	2898.2	2898.2	2898.2	2898.2	2955.3	0.98	1840.8	1718.0	1828.8	2106.7	2100.6	1.57	1.69	1.58	1.38	1.38
Taxes																	
Personal income tax (IRPP)	19253	18534	18546	18702	18821	N/A	N/A	19094	19717	19449	19596	19596	1.01	0.94	0.95	0.95	0.96
Employee tax credit (PPE)	6028.8	7067.1	6881.8	6650.2	6204.0	N/A	N/A	8715.3	8686.7	7984.1	N/A	N/A	0.69	0.81	0.86	N/A	N/A

Notes: N/A information not available; - not applicable

Sources: EUROMOD 6.0++; INSEE, statistics on wages and income- social protection and welfare-
http://www.insee.fr/en/themes/theme.asp?theme=4&sous_theme=6&nivgeo=0&type=2; DGFiP, Statisitcs on national taxes- statistics on the income tax-
http://www.impots.gouv.fr/portal/dgi/public/statistiques.impot?espId=-4&pageId=stat_donnees_detaillees&sfid=4503;

Table 4.8 Simulated taxes and benefits- Aggregate amounts

	Input database (I)					Original data (II)	Ratio (I/II)	External source (III)					Ratio (I/III)				
	2006	2007	2008	2009	2010	2006	2006	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Benefits																	
AF	10550.6	10727.3	10834.8	11300.8	11301.4	9726.6	1.08	12122.0	12300.0	12342.0	12535.0	12354.0	0.87	0.87	0.88	0.90	0.91
PN	452.2	511.2	515.3	531.8	531.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ARS	934.3	1220.4	1242.6	1291.1	1307.3	890.9	1.05	1390.0	1381.0	1487.0	1495.0	1510.0	0.67	0.88	0.84	0.86	0.87
CF	1451.4	1472.5	1574.9	1633.8	1633.8	1301.1	1.12	1597.0	1585.0	1595.0	1629.0	1631.0	0.91	0.93	0.99	1.00	1.00
API	300.0	311.1	306.5	-	-	191.9	1.56	1064.0	1075.0	1024.0	-	-	0.28	0.29	0.30	-	-
PAJE	3064.2	3508.7	3532.3	3649.0	3655.1	3048.8	1.01	4354.0	4601.0	4751.0	4890.0	4911.0	0.70	0.76	0.74	0.75	0.74
CLCA	7785.2	7840.0	7918.4	8188.7	8188.7	N/A	N/A	N/A	N/A	2134.8	2140.6	2063.1	N/A	N/A	3.71	3.83	3.97
AAH	2160.8	2213.1	2206.3	2370.3	2414.7	3829.4	0.56	5230.0	5505.0	5773.0	6180.0	6610.0	0.41	0.40	0.38	0.38	0.37
AL	7155.3	7329.7	9982.1	10487.9	10314.1	11914	0.60	5661	5706	6033	6058	6033	1.26	1.28	1.65	1.73	1.71
RMI/RSA	4807.3	5144.1	5189.2	9873.9	9772.4	4083.1	1.18	5021.7	5248.0	4608.2	7005.0	8118.0	0.96	0.98	1.13	1.41	1.20
ASPA	2114.0	2211.4	2231.8	2344.1	2400.4	2818.9	0.75	2725.81	2439.00	2559.00	2596.00	2711.00	0.78	0.91	0.87	0.90	0.89
ARE	25536.8	26342.9	27025.9	27587.8	28022.8	24329	1.05	20970.0	19640.0	19582.0	23761.0	25047.0	1.22	1.34	1.38	1.16	1.12
Taxes																	
Personal income tax (IRPP)	45325	46479	47574	47942	49005	N/A	N/A	45870.1	49104.9	44905.5	45469.6	47009.0	0.99	0.95	1.06	1.05	1.04
Employee tax credit (PPE)	2126.0	2567.7	2506.9	2389.0	2211.7	N/A	N/A	4393.8	4353.2	3793.1	N/A	N/A	0.48	0.59	0.66	N/A	N/A
CSG	63263	64624	65323	65815	66857	N/A	N/A	75500	79200	83400	80800	82300	0.84	0.82	0.78	0.81	0.81
CRDS	4534	4650	4771	4815	4893	N/A	N/A	5500	5800	6100	6000	6000	0.83	0.81	0.79	0.81	0.81
Social insurance contributions																	
Employee contributions	75102.9	76866.9	78675.9	80028.2	81720.2	N/A	N/A	74140	77060	77680	77720	78880	1.01	1.00	1.01	1.03	1.04
Self-employed contributions	15487.2	16217.0	16508.1	16047.6	16317.8	N/A	N/A	21780	22220	23610	24230	24590	0.71	0.73	0.70	0.66	0.66
Employer contributions	218376	223876	229076	232922.	237962	N/A	N/A	232500	240450	248530	249860	253610	0.94	0.93	0.92	0.93	0.94

Notes: N/A information not available; - not applicable

Sources: EUROMOD 6.0++; INSEE, statistics on wages and income- social protection and welfare-
http://www.insee.fr/en/themes/theme.asp?theme=4&sous_theme=6&nivgeo=0&type=2;INSEE, Main taxes by categoriy-
http://www.insee.fr/fr/themes/tableau.asp?reg_id=0&ref_id=NATTEF08328; DGFiP, Statisitcs on national taxes- statistics on the income tax-
http://www.impots.gouv.fr/portal/dgi/public/statistiques.impot?espId=-4&pageId=stat_donnees_detaillees&sfid=4503;

conditions. This reduces substantially the number of simulated eligible individuals. Note also that there is an interaction between ASPA and RMI. More specifically, some individuals who in practice are entitled to ASPA but whose entitlement is not simulated, will be entitled to receive RMI. Thus, the underestimation of benefit recipients in the case of ASPA will lead to an overestimation of beneficiaries of the RMI. Finally, the number of recipients of the contributory unemployment benefit in EUROMOD is simulated to be one and a half times that reported in external administrative statistics. This is entirely due to observed receipt in SILC (eligibility in EUROMOD is so constructed as to reproduce observed receipt in the data). This can clearly be seen in the fact that simulated numbers and those derived from the original data are indeed very close. Since in SILC the contributory unemployment benefit is aggregated together with the means-tested one, it is possible that error stemming from the disaggregation process is responsible for the overestimation.

The number of tax units liable to positive personal income tax payments in EUROMOD is very close to the one reported in administrative statistics. The number of units entitled to the refundable low earners tax credit is however underestimated in EUROMOD.

Table 4.8 displays information on overall aggregate expenditure corresponding to the various tax and benefit instruments. Most simulated child and family benefits are again slightly underestimated. A potential explanation relates to the use of current instead of previous income when simulating entitlement to all income-tested benefits. Similarly to the simulation of total number of recipients, the total amount of means-tested benefits for lone parents in EUROMOD is only approximately one third of the external benchmark. Thus, the underestimation of total amounts appears to be entirely due to the low number of recipients. It is possible that lone parents are either not well captured in SILC or that their identification using SILC variables relating to cohabitation and marital status is not accurate. The oversimulation of the total outlays on the parental leave benefit is of the same magnitude as the one of the total number of recipients suggesting that inaccuracies in the simulation of eligibility rules are the ones driving these results.

Aggregate means-tested disability allowances are underestimated, again due to not capturing the recipient population properly. This shortcoming is due to the disability status variable in SILC which is more restrictive than disability requirements associated with this benefit. Means-tested total housing benefits are somewhat overestimated in SILC compared to external benchmarks. The overestimation of amounts is though much lower than the one of recipients suggesting that some potentially eligible individuals are likely to not claim if the benefit they are entitled to is low. Again, keep in mind that the EUROMOD and external figures are not entirely comparable due to the existing aggregations of external information. In the case of the main means-tested benefit RMI/RSA, total simulated amounts are close to external benchmarks between 2006 and 2008 but slightly overestimated in 2009 and 2010. The fact that the number of recipients is oversimulated but total amounts are not suggests that non-take-up is not random. Households entitled to small amounts are less likely to claim. To the extent that EUROMOD simulated non-take-up to be random, this introduces errors in the final results. Total ASPA outlays are somewhat underestimated in EUROMOD while total ARE outlays are overestimated. In the latter case, the overestimation is of the same magnitude as the one of the recipients suggesting that the inability to correctly identify recipients of ARE in SILC is driving the results.

Simulated total receipts of the personal income tax are very close to figures derived from administrative sources. In line with results obtained in Table 4.7, the total amount of the refundable tax credit for low earners is underestimated. The two taxes specific to the French system, CSG and CRDS, are slightly undersimulated in EUROMOD.

Employee and employer social insurance contributions simulated in EUROMOD closely correspond to figures obtained from external sources. On the other hand, social insurance contributions paid by the self-employed are underestimated. This pattern is in line with the under-estimation of self-employment income in SILC relative to external information (see Table 4.4).

4.2   Income distribution

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

4.2.1   Income inequality

Several inequality indicators as obtained in EUROMOD are compared with external benchmarks in table 4.9. The external figures come from EUROSTAT's statistics database. They show that median and mean disposable income are well aligned in 200, the year of the data, but they are underestimated in EUROMOD compared to the external figures in the subsequent years. Overall inequality- as expressed by the Gini coefficient and the S80/S20 ratio are underestimated in EUROMOD in all years. The underestimation is relatively minor in 2006 (i.e. the data year) but becomes much more substantial in the subsequent years. Finally the comparison of decile shares indicates that income at the bottom is overestimated in EUROMOD while income at the top is underestimated. Incomes in the middle of the distribution are relatively well aligned. There may be several possible explanations for the noted discrepancies. First, note that no data adjustments are made in EUROMOD in situations where the policy year does not correspond to the data year. In particular, no adjustment is made for changes in employment and unemployment that have taken place between 2006 and the policy year. It is possible that losses in employment may be driving some of the increases in inequality observed in the external data (but not showing up in EUROMOD). Second, it is possible that the uprating factors used to account for changes in incomes are not capturing changes in the income distribution. More specifically, uprating factors are based on changes in average income components. If however incomes are rising faster at the top compared to the bottom, this would both increase inequality and not be captured in the change in averages. Finally, it is possible that structural policy changes between 2006 and the policy year are less well simulated and thus producing error. Nevertheless, given the observed patterns f continuously increasing inequality in the external figures but constant inequality in EUROMOD this is probably the least likely explanation.

4.2.2   Poverty rates

At-risk of poverty rates using various poverty thresholds are shown in Table 4.10, separately by gender. Poverty is substantially underestimated in EUROMOD, both for men and for women, when using lower poverty thresholds. At higher poverty thresholds, poverty rates estimated by EUROMOD are relatively close to external benchmarks. This suggests that non take up of some means-tested benefits or administrative errors in the implementation of these benefits may play a role which EUROMOD cannot adequately capture. Only the non take-up of general social assistance (RMI/ RSA) is simulated in EUROMOD. Moreover, non-take up is simulated to be random. If marginalized, peripheral groups are less likely to claim benefits to which they are theoretically entitled, incomes at the bottom will be inflated in EUROMOD. The increase in poverty rates after 2008 is not well captured in EUROMOD. Finally, child poverty and to a lesser extent working-age are underestimated in EUROMOD. It is possible that no-take up of some means-tested family benefits accounts for this pattern, although child benefits are usually slightly underestimated in EUROMOD compared to administrative data (but overestimated compared to SILC on which the poverty external statistics rely).

Table 4.9 Income distribution

Indicator	EUROMOD (I)					External Source (II)					Ratio (I/II)				
	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Decile shares															
1	4.223	4.237	4.283	4.353	4.322	3.8	3.6	3.6	3.4	3.5	1.11	1.18	1.19	1.28	1.23
2	5.794	5.795	5.928	6.03	6.014	5.6	5.4	5.3	5.3	5.1	1.03	1.07	1.12	1.14	1.18
3	6.779	6.776	6.848	6.934	6.932	6.6	6.4	6.3	6.3	6.2	1.03	1.06	1.09	1.10	1.12
4	7.68	7.69	7.673	7.751	7.719	7.6	7.3	7.2	7.1	7.0	1.01	1.05	1.07	1.09	1.10
5	8.527	8.531	8.514	8.546	8.548	8.4	8.1	8.0	8.1	7.9	1.02	1.05	1.06	1.06	1.08
6	9.456	9.463	9.464	9.421	9.431	9.4	9.0	8.9	9.0	8.8	1.01	1.05	1.06	1.05	1.07
7	10.541	10.542	10.484	10.516	10.527	10.5	10.1	10.0	10.2	10.0	1.00	1.04	1.05	1.03	1.05
8	11.902	11.926	11.899	11.856	11.87	12	11.5	11.5	11.6	11.5	0.99	1.04	1.03	1.02	1.03
9	14.182	14.167	14.129	14.04	14.055	14.2	14.0	14.0	14.2	14.0	1.00	1.01	1.01	0.99	1.00
10	20.916	20.872	20.777	20.553	20.581	21.9	24.6	25.1	24.8	25.9	0.96	0.85	0.83	0.83	0.79
Median	16564.69	17016.12	17446.68	17685.64	17957.84	16,441	18,984	19,760	20,046	19683	1.01	0.90	0.88	0.88	0.91
Mean	18471.3	18957.13	19468.55	19757.16	20057.77	18383	22297	23336	23517	23472	1.00	0.85	0.83	0.84	0.85
Gini	24.937	24.881	24.578	24.083	24.18	26.6	29.2	29.8	29.9	30.8	0.94	0.85	0.82	0.81	0.79
S80/S20	3.504	3.493	3.418	3.332	3.351	3.9	4.3	4.4	4.5	4.6	0.90	0.81	0.78	0.74	0.73

Notes: Based on 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; computed at the individual level.

Sources: EUROMOD 6.0++; EUROSTAT Statistics Database http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database.

Table 4.10 At risk of poverty rates by gender and age

Indicator	EUROMOD (I)					External Source (II)					Ratio (I/II)				
	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
40% median HDI															
Total	1.962	1.940	1.894	1.792	1.891	3.000	2.800	3.200	3.700	3.100	0.654	0.693	0.592	0.484	0.610
Males	1.826	1.816	1.780	1.604	1.760	3.000	2.600	3.000	3.600	3.200	0.609	0.698	0.593	0.446	0.550
Females	2.091	2.057	2.001	1.970	2.016	3.100	3.000	3.400	3.900	3.100	0.675	0.686	0.589	0.505	0.650
50% median HDI															
Total	5.129	5.086	4.952	4.468	4.582	6.800	6.400	6.800	7.400	7.100	0.754	0.795	0.728	0.604	0.645
Males	4.874	4.849	4.654	4.072	4.283	6.800	5.900	6.300	7.100	6.900	0.717	0.822	0.739	0.574	0.621
Females	5.371	5.312	5.235	4.842	4.866	6.900	6.800	7.200	7.700	7.200	0.778	0.781	0.727	0.629	0.676
60% median HDI															
Total	11.123	11.033	9.995	9.028	9.289	13.100	12.700	12.900	13.500	14.000	0.849	0.869	0.775	0.669	0.664
Males	10.469	10.416	9.417	8.371	8.729	12.800	11.900	12.000	12.800	13.500	0.818	0.875	0.785	0.654	0.647
Females	11.743	11.617	10.544	9.651	9.819	13.400	13.400	13.700	14.100	14.500	0.876	0.867	0.770	0.684	0.677
70% median HDI															
Total	19.517	19.639	18.204	17.139	17.256	20.800	20.200	21.400	21.600	21.400	0.938	0.972	0.851	0.793	0.806
Males	18.168	18.292	17.141	16.016	16.173	20.100	19.300	20.200	20.600	20.600	0.904	0.948	0.849	0.777	0.785
Females	20.794	20.915	19.210	18.204	18.281	21.500	21.100	22.400	22.600	22.200	0.967	0.991	0.858	0.805	0.823
60% median HDI															
0-15 years	10.312	10.446	9.591	8.419	8.719	15.000	16.400	16.700	18.400	18.600	0.687	0.637	0.574	0.458	0.469
16-29 years	17.442	17.507	16.067	14.376	14.969	20.600	20.400	21.400	23.100	22.200	0.847	0.858	0.751	0.622	0.674
30-44 years	8.760	8.751	8.086	6.665	6.883	10.900	11.000	11.200	12.300	13.000	0.804	0.796	0.722	0.542	0.529
45-64 years	10.277	10.153	9.286	8.707	8.632	10.200	8.900	9.000	8.400	10.500	1.008	1.141	1.032	1.037	0.822
65+ years	13.559	12.972	11.037	11.319	11.767	13.100	11.000	10.700	9.700	9.700	1.035	1.179	1.031	1.167	1.213

Notes: Computed for individuals according to their household disposable income (HDI) equivalised by the "modified OECD" equivalence scale. HDI are calculated as the sum of all income sources of all household members net of income tax and social insurance contributions.
Sources: EUROMOD 6.0++; EUROSTAT Statistics Database http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database.

Table 4.11 Impact of minimum wage

	Baseline (I)					Minimum wage included (II)					Ratio (I/II)				
	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Disposable income (total)	754019.3	773554.0	794886.6	806371.5	818420.3	761080.5	780678.8	802112.6	813381.7	825493.4	0.99	0.99	0.99	0.99	0.99
Gross employee earnings (total)	555374.6	569856.8	583006.6	592678.7	604980.8	567159.8	581726.6	595127.2	604699.3	617106.0	0.98	0.98	0.98	0.98	0.98
Income tax (total)	45325.4	46479.1	47574.0	47941.5	49004.8	45931.5	47106.8	48220.5	48605.0	49685.2	0.99	0.99	0.99	0.99	0.99
Employee SICs (total)	75102.9	76866.9	78675.9	80028.2	81720.2	76737.6	78508.6	80352.1	81690.6	83397.1	0.98	0.98	0.98	0.98	0.98
Social assistance (total)	4807.28	5144.06	5189.21	9873.88	9772.37	4632.13	4966.25	5012.27	9572.98	9513.77	1.04	1.04	1.04	1.03	1.03
Gini (Eq HDI)	0.25	0.25	0.25	0.24	0.24	0.25	0.25	0.24	0.24	0.24	1.00	1.00	1.04	1.00	1.00
At poverty risk (60% median HDI)	0.11	0.11	0.1	0.09	0.09	0.11	0.11	0.1	0.09	0.09	1.00	1.00	1.00	1.00	1.00

Source: EUROMOD 6.0++

4.2.3 Validation of minimum wage

EUROMOD also allows for the simulation of the minimum wage (SMIC), although this policy is tuned off in the baseline and thus its effects not included in the previous tables. In Table 11, baseline results (in which minimum wage is not simulated) are compared to results obtained when the minimum wage is simulated. As expected, total employment income, disposable income, income tax and employee social insurance contributions are slightly higher when minimum wage is simulated. On the contrary, the amount of social assistance is lower. Overall however, changes are very small as the number of persons affected by the simulation of the minimum wage is not very large (the minimum wage is simulated on an hourly basis-tot take account of part time work and spells of non-employment during the income reference period).

4.3 Summary of "health warnings"

Several things should be kept in mind when interpreting EUROMOD results:

- Total employment income appears to be underreported in SILC compared to external benchmarks
- Similarly, some other types of incomes such as sickness benefits, investment and property incomes are lower in SILC compared to external information
- Accurate simulation of the parental leave benefit (CLCA) was not possible given available information in SILC; approximations used to simulated the benefit have led to a substantial overestimation of this benefit
- Non-take-up of the main social assistance benefit (RMI/RSA) is simulated to be random; non-take-up however is most likely to be non-random; comparisons between results obtained in EUROMOD and external benchmarks suggest that households entitled to lower amounts are less likely to claim
- Simulation of eligibility to the contributory unemployment benefit (ARE) is inaccurate due to the quality of data in SILC
- Eligibility to the means-tested social assistance for the elderly (ASPA) is simulated based on observed receipt in the data
- Overall, EUROMOD simulated incomes are more equal; poverty rates-especially when calculated using low poverty thresholds are underestimated
- Child poverty is also underestimated

5. REFERENCES

EUROSTAT Statistics Database (2013) , http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database.

National Institute of Statistics and Economic Studies (INSEE) (2013), Statistics on incomes and wages, http://www.insee.fr/en/themes/theme.asp?theme=4.

Direction générale des finances publiques (DGFiP) (2013), Statistics, http://www.impots.gouv.fr/portal/dgi/public/statistiques;jsessionid=231Y1F05VAMKXQFIEIPSFEY?espId=-4&pageId=statistiques&sfid=450.

OECD Statistics (2013), http://www.oecd.org/statistics/.

Verbist, G. (2004) "Redistributive effect and progressivity of taxes An International Comparison across the EU using EUROMOD", EUROMOD Working Paper No. EM5/04.