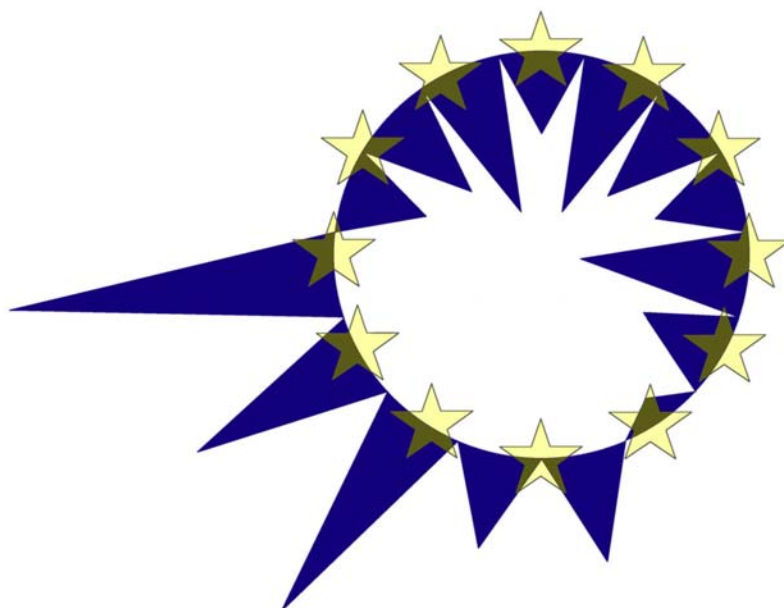# EUROMOD

COUNTRY REPORT

EUROMOD Country Report

SPAIN

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Euromod Country report - Spain

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1 Tax benefit system - outline

1.1 Income components, benefits

Spain is, after Ireland, the European Union country with the lowest expenditure in social protection as percentage of GDP. In 1997 the EU countries spent, in average, 28.2 percent of the GDP in social protection. In Spain the expenditure was almost 7 percentage points below.

Respecting to the distribution of this expenditure among functions, the most significant differences between Spain and the rest of the European Union is related to the expenditure in unemployment and family benefits. The share of unemployment benefits in social protection budget in Spain almost doubles the one in the European Union. At the other hand, family benefits, which have a significant share in most EU countries, have a minimal importance in Spain.

Table 1.   Social expenditure as percentage of GDP and Structure of social expenditure in Spain and European Union, 1997

	Social Expenditure as percentage of GDP	Structure of social expenditure (expenditure groups as percentage of total expenditure)						
		Old-age	Sickness	Invalidity	Survivors	Unemploy ment	Family	Others
Spain	21.4	41.9	28.8	7.7	4.3	14.1	2.0	1.1
European Union	28.2	39.6	26.8	8.5	5.4	7.6	8.4	3.6

Source: MTAS (2000).

1.2 Taxes and contributions

Despite its important increase in the last twenty years, the participation of taxes as a percentage of GDP in Spain is well below the one practised in the European Union. After Ireland, Spain is the country with the lowest fiscal pressure. While in countries like Sweden and Denmark taxes represent about 50 percent of the Gross Domestic Product, in Spain this percentage is 33,7.

In comparison to the average of the European Union, the structure of the Spanish tax system gives higher weight to Social Security Contributions, which represent 35% of all collected taxes (28.6% in the European Union). Whilst in the European Union employers pay about 56% of the contributions and employees 36%, in Spain employers are responsible for about 70% and employees for 16 percent. In the other hand, both direct and indirect taxes have lower participation in the State's tax revenue. Among these, the Personal Income Tax is the most remarkable for its inferior participation in the Spanish tax system.

Table 2.   Taxes as percentage of GDP and Tax Structure in Spain and the European
Union, 1997

	Taxes as percentage of GDP	Tax structure (tax groups as percentage of total taxes)							
		Direct Taxes			Indirect Taxes		Contributions		
	Including Social Security Contributions	Personal Income Tax	Corporate Tax	Property Tax	General Taxes	Specific Taxes and others	Employee contributions	Employer contributions	Other
Spain	33.7	21.9	7.8	5.8	16.4	12.5	5.6	24.6	4.8
European Union	41.5	25.5	8.5	4.5	17.8	13.1	10.2	15.9	2.5

Source: OECD (1999).

1.3   Taxes and benefits Simulated by Euromod

1.3.1   *The share of the taxes and benefits simulated by Euromod with respect to the whole system*

The Spanish module of Euromod simulates the most important taxes in Spain: Personal income tax, value-added tax, and employee and employer social security contributions. As pointed in Table 2, altogether these taxes and contributions represent about 86 percent of all tax revenues in Spain.

Concerning the social benefits, Euromod is only able to fully simulate the child benefits, which represents only about 0.5 percent of benefits in Spain.

It is important to point out that the policy design alternatives provided by Euromod regarding the benefits have been conditioned by two fundamental factors. One is the very nature of the social protection system in Spain. The other, the quality of the existing micro-data.

The greatest part of the benefit system in Spain is constituted by insurance benefits (76.1 % of the total). The evaluation of these benefits, not conditioned by any test of income, would require some other type of modelling than that provided by Euromod in its current stage. Thus, Euromod is focused solely on social benefits involving assistance, understanding assistance benefit to be that in which the right to receive it depends on a test of income.

A second element conditioning the policy design alternatives available to the Euromod is the quality of the micro-data available. The quality of the micro-data at hand is not consistent enough for undertaking a full simulation exercise. Thus, the model partially simulates most of the means-tested social assistance benefits including unemployment and old-age assistance benefits, and old age and widow supplementary minimum pensions. Overall, these benefits represent 23.4 percent of the total. More details about the full and partial simulations of benefits available in Euromod can be found in section 2.1. It should

be kept in mind that partial simulation imposes significant limits on the model, something that the user must bear in mind when designing his/her policies.

It is also important to notice that the model does not simulate most regional particularities of the Spanish tax-benefit system. There are two autonomous communities (Vasque Country and Navarra) which have specific income tax systems, that are not simulated in Euromod. Instead, it is assumed those communities have the same income tax regulations used in the rest of the country. However, Euromod does simulate some of the particularities of the income taxation tax credits implemented by the different Autonomous Communities. Respecting the benefits, Euromod does not simulate the "minimum income programmes", which depend on the Autonomous Communities.

1.3.2   Euromod simulation procedure

Figure 1 describes the proceeding of the simulation in Euromod. First, Euromod simulates the benefits. After that, it simulates the social security contributions. Those previous elements are used as input to the following one: the income tax. Finally, the model simulates the value-added tax.

Figure 1.   The simulation of the Spanish tax-benefit system in Euromod: Elements and Procedure
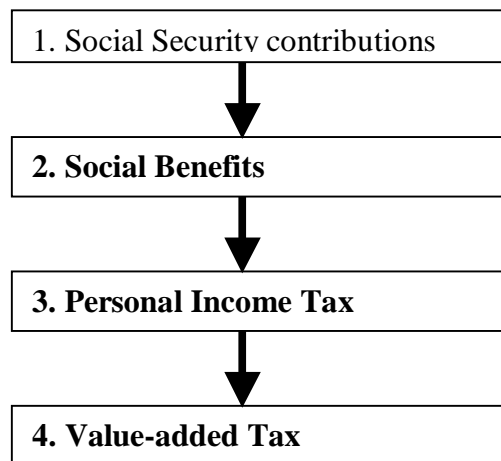
2   Tax benefit system - detailed description

This section describes, in detail, the rules of all the Spanish taxes and benefits simulated by Euromod.

Table 3.   Tax-benefit policies simulated by Euromod

Section	Policy (Euromod Code)	Description
2.1.1	Polsben_cb_SP	Child Benefits
2.2.1	PolERSICcivsrv_SP	Civil Servant's Employer Social Insurance Contributions
2.2.1	PolEESICcivsrv_SP	Civil Servant's Employee Social Insurance Contributions
2.2.2	PolUNSIC_SP	Unemployed Persons Social Insurance Contributions
2.2.3	PolSESIC_SP	Non-Agricultural Self-Employed Persons Social Insurance Contributions
2.2.4	PolSESICagrarian_SP	Agricultural Self-Employed Persons Social Insurance Contributions
2.2.5	PolERSICagrarian_SP	Agricultural Employer Social Insurance Contributions
2.2.5	PolEESICagrarian_SP	Agricultural Employee Social Insurance Contributions
2.2.6	PolERSICgeneral_SP	General Regime Employer Social Insurance Contributions
2.2.6	PolEESICgeneral_SP	General Regime Employee Social Insurance Contributions
2.3	PolIT_SP	Single Persons Income Tax
2.3	PolITMarr_SP	Optional Joint Income Tax

2.1   Benefits simulated by Euromod

2.1.1   Child Benefit

The Spanish child benefit is a means-tested benefit designed to low income families with one or more children. The Spanish child benefit also enacts a special system for handicapped children, but Euromod does not simulate this[1].

Eligibility Conditions
- Parents are eligible for children aged less than 18.
- The test of means consists in a threshold for all the incomes received by the parents who share the dwelling with children. The amount of the threshold is fixed for a family with one child and increases in a constant percentage for every additional child.
- If the parents' income surpasses this threshold, but this excess is lower than the amount the beneficiaries would receive if they were eligible then they are also eligible for a specific endowment.

Duration
- Parents have the right to receive the benefit while they complete the eligibility conditions.

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[1] Despite having the same rules (eligibility conditions, duration and amount of the grant) this benefit is divided in two target groups: contributory and non-contributory beneficiaries. Since the database used does not provide information about the individual's or family's contributory record, and considering that the income support *de facto* is the same, the simulations in Euromod do not distinguish between those two groups. Therefore, Euromod simulates both child benefits as if they were only one.

<u>Amount</u>
- The benefit consists on an annual single fixed pay for the first child, and an extra percentage for every additional one.
- For those parents whose incomes surpasses the threshold, but the excess is lower than the amount they would receive, the benefit is the difference between the benefit they would receive if they fully eligible and the excess of income.

Table 4.   Description of the Child Benefit Components, 1998.

Euromod Code	Description of the Component	Value	
disregard_amt	Annual Income threshold	1,172,026 ptas.	(7,060 euros)
SingPay	Annual value of the benefit	40,766 ptas.	(245 euros)
es_ch_parity2	Percentage of increase for every additional child	15 %	

2.1.2   Benefits partially simulated

The unemployment assistance, old-age and widow supplementary minimum pensions, and old-age non-contributory and assistance benefits are partially simulated in Euromod. The simulation is considered *partial* because the model cannot modify the eligibility conditions. Therefore it does not allow changing the number recipients, which is fixed. However, the amount of the benefit is flexible, so that it can be altered.

Even the benefits which are not simulated at all (all insurance pensions, social assistance and family benefits) have some degree of flexibility since they can be eliminated. This may be of interest to analyse the impact of the current benefit system on poverty and inequality, or to simulate "radical reforms" which alter the structure of the whole benefit system.

2.2   Social insurance contributions

The social insurance contributions in Spain are divided in 9 regimes. Euromod simulates 6 of those regimes[2], as follows.

2.2.1   Civil Service Workers Social Insurance Contributions

Civil service workers contribute under a special regime aside of the Social Security. The base of the contribution is the gross workers' salary. The rate of the contribution differs between employers and employees.

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[2] The house workers', sailors and coalminers regimes are not simulated. In Euromod these workers contribute under the workers general regime (if they are employees) and under the non-agricultural self-employed persons regime (if they are self-employed).

Table 5.   Description of civil service workers social insurance contributions components, 1998.

Euromod Code	Description of the Component	Value
sp_eesic_civsrv_emp	**Civil Servant's Employer Social Insurance Contributions**	
Rate	Contribution rate	10.11%
Sp_eesic_civsrv_emp	**Civil Servant's Employee Social Insurance Contributions**	1.89%
Rate	Contribution rate	

2.2.2   Unemployed Persons Social Insurance Contributions

The receivers of unemployment insurance pay this contribution. The contribution base is the individuals previous earnings, which are the earnings the individual gained before getting unemployed. The rate of contribution is flat.

Table 6.   Description of unemployed persons social insurance contributions components, 1998.

Euromod Code	Description of the Component	Value
sp_unsic	**Unemployed Persons Social Insurance Contributions**	
rate	Rate of contribution	4.7%

2.2.3   Non-Agricultural Self-Employed Persons Social Insurance Contributions

The social insurance contribution for self-employed workers has some degree of flexibility. The worker can opt between two different rates of contribution (including or not including temporary sickness or invalidity benefits). The base of contribution is also flexible. The worker can choose its amount between a minimum and a maximum limit. In Euromod it is supposed that all workers choose to contribute the lowest amount they can. Therefore, they all choose to contribute under the lowest rate and base of contribution. Thus, Euromod provides a minimum estimate of contributions under this scheme.

Table 7.   Description of Non-Agricultural Self-Employed persons social insurance contributions components, 1998.

Euromod Code	Description of the Component	Value	
sp_sesic	**Non-Agricultural Self-Employed Persons Social Insurance Contributions**		
Rate	contribution rate	26.5%	
Base	contribution base	110580 ptas.	665 euros

2.2.4 Agricultural Self-Employed Persons Social Insurance Contributions

In practice, it works as a lump-sum contribution, since the rate is flat and the base is fixed.

Table 8.   Description   of   Agricultural   Self-Employed   Persons   social   insurance contributions components, 1998.

Euromod Code	Description of the Component	Value	
sp_eesic_agrarian_selfemp	**Agricultural Self-Employed Persons Social Insurance Contributions**		
Rate	contribution rate	19.75%	
Base	contribution base	87300 ptas.	525 euros

2.2.5 Agricultural Workers Social Insurance Contributions

This regime is divided in seven different groups of contribution, according to the type of occupation. Each group's base is fixed. The contribution rate for employers and for employees is the same among those groups.

Table 9.   Description of Agricultural Workers social insurance contributions components, 1998.

Euromod Code	Description of the Component	Value	
young_worker_age_lt	Age limit for young worker	17 years	
engineer_min_lt	Engineer minimum monthly base of contribution	122640 ptas.	737 euros
tech_engineer_min_lt	Tech engineer minimum monthly base of contribution	101730 ptas.	611 euros
admin_head_min_lt	Administrative head minimum monthly base of contribution	88440 ptas.	532 euros
assistant_min_lt	Assistant minimum monthly base of contribution	82110 ptas.	493 euros
white_collar_min_lt	White collar minimum monthly base of contribution	82110 ptas.	493 euros
blue_collar_min_lt	Blue collar minimum monthly base of contribution	82110 ptas.	493 euros
young_worker_min_lt	Young worker minimum monthly base of contribution	63570 ptas.	382 euros
sp_ersic_agrarian_emp	**Agricultural Employer Social Insurance Contributions**		
rate	Contribution rate	22.1%	
sp_eesic_agrarian_emp	**Agricultural Employee Social Insurance Contributions**		
rate	Contribution rate	13.1%	

2.2.6 Workers General Regime Social Insurance Contributions

Just like the previous regime, the workers general regime is divided in seven different groups of contribution, according to the type of occupation. Each group's base has a minimum and a maximum limit. The contribution rate for employers and for employees is the same for all groups.

Table 10. Description of Agricultural Workers social insurance contributions components, 1998.

Euromod Code	Description of the Component	Value	
young_worker_age_lt	Age limit for young worker	17 years	
engineer_min_lt	Engineer minimum monthly base of contribution	122640 ptas.	737 euros
tech_engineer_min_lt	Tech engineer minimum monthly base of contribution	101730 ptas.	611 euros
admin_head_min_lt	Administrative head minimum monthly base of contribution	88440 ptas.	532 euros
assistant_min_lt	Assistant minimum monthly base of contribution	82110 ptas.	493 euros
white_collar_min_lt	White collar minimum monthly base of contribution	82110 ptas.	493 euros
blue_collar_min_lt	Blue collar minimum monthly base of contribution	82110 ptas.	493 euros
young_worker_min_lt	Young worker minimum monthly base of contribution	63570 ptas.	382 euros
engineer_max_lt	Engineer maximum monthly base of contribution	392700 ptas.	2,360 euros
tech_engineer_max_lt	Tech engineer maximum monthly base of contribution	392700 ptas.	2,360 euros
admin_head_max_lt	Administrative head maximum monthly base of contribution	392700 ptas.	2,360 euros
assistant_max_lt	Assistant maximum monthly base of contribution	392700 ptas.	2,360 euros
white_collar_max_lt	White collar maximum monthly base of contribution	322230 ptas.	1,937 euros
blue_collar_max_lt	Blue collar maximum monthly base of contribution	322230 ptas.	1,937 euros
young_worker_max_lt	Young worker maximum monthly base of contribution	322230 ptas.	1,937 euros
sp_eesic_general	**General Regime Employer Social Insurance Contributions**		
rate	Contribution rate	30.8%	
sp_ersic_general	**General Regime Employee Social Insurance Contributions**		
rate	Contribution rate	6.4%	

2.3 Income tax

The 1998 Spanish Personal Income Tax works as follows.

2.3.1 Tax Unit

The present system is based on the individual as the *tax unit*. However, if the individual is part of a *family unit*[3], then the system allows him/her to pay under a *joint scheme* with the other members of the family unit.

2.3.2 Income Tax Exemption Limit

Personal income tax is due by all inhabitants of Spain. However, tax units receiving only labour and capital income with gross amounts below an established limit *(obligation to fill a tax return)* are *not subject* to income taxation. Under the joint scheme, this limit is a little higher for work incomes. [4]

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[3] A family unit can be formed either by married couples sharing or not the dwelling with children aged under 18, or lone-parents living with children under 18.

[4] In the 1998, the exemption limits for the income tax and for the income tax withholdings were very similar. Therefore, there was no need to simulate the withholding system. However, if those exemption limits differ, like they do after the 1998 Income Tax Reform, the withholding system must be simulated.

Table 11.   Description of the Income Tax Exemption Limit Components, 1998.

Euromod Code	Description of the Component	Value	
sp_it_exemp_limit	**Income tax Exemption Limit**		
exemption_worky_ind_lt	Individualised work income limit	1200000 ptas.	7,212 euros
exemption_worky_joint_lt	Joint work income limit	1250000 ptas.	7,513 euros
exemption_pensiony_lt	Pension income limit	1250000 ptas.	7,513 euros
exemption_capitaly_lt	Capital income limit	250000 ptas.	1,503 euros

2.3.3   Taxable Income

Taxable income includes employment, self-employment, property, capital, and an imputed income from owner-occupied dwellings, net of tax deductions. Hence, the employment income deductions are the employee social insurance contributions and a top-limited flat rate deduction. The taxable property income is imputed as a percentage of the market price of the dwelling. Up to a certain limit mortgage, interest payments on house purchases can be deducted. There is also a lump-sum reduction for interest and dividends income. Finally, annuity payments to private pension plans can also be deducted up to determined amount, but these are not simulated in Euromod.

Table 12.   Description of the Taxable Income Deductions and Imputed Incomes, 1998.

Euromod Code	Description of the Component	Value	
sp_it_empy_main_ded	**Employment Income Main Deduction**		
rate	Deduction Rate	5%	
Limit	Deduction Limit	250000 ptas.	1,503 euros
sp_it_income_from_property	**Taxable Income From Property**		
Imputed_income	imputed income from property	2%	
Max_mort_int_sing	Maximum Mortgage Interest if filed Individually	800000 ptas.	4,808 euros
Max_mort_int_coup	Maximum Mortgage Interest if filed Jointly	1000000 ptas.	6,010 euros
sp_it_income_from_financial_cap	**Taxable Income From Financial Capital**		
Deduction_lt	Deduction Limit (Reduccion legal)	29000 ptas.	174 euros
sp_it_ded_empy	**Pension Contributions Deduction**		
Deduction_rate	Deduction Rate	20%	
Deduction_limit	Deduction Limit	1100000 ptas.	6,611 euros

2.3.4   Tax Schedule

The *income tax schedule* has 9 bands, the marginal tax rate varies from 20 per cent to 56 per cent. The joint taxation scheme has a specific tax schedule. It is made of 9 larger bands, with different marginal tax rates, which also range between 20 and 56 percent.

Table 13. Description of the Personal Income Tax Schedule, 1998.

Euromod Code	Description of the Component	Value			
		Individual scheme (co_it_schedule)		Joint scheme (co_it_joint_schedule)	
nbands	Number of Tax Bands	9			
tax_band1	Upper Limit for Tax Band 1	467000 ptas.	2,807 euros	901000 ptas.	5,415 euros
tax_band2	Upper Limit for Tax Band 2	1161000 ptas.	6,978 euros	2245000 ptas.	13,493 euros
tax_band3	Upper Limit for Tax Band 3	2295000 ptas.	13,793 euros	3166000 ptas.	19,028 euros
tax_band4	Upper Limit for Tax Band 4	3495000 ptas.	21,005 euros	4391000 ptas.	26,390 euros
tax_band5	Upper Limit for Tax Band 5	5095000 ptas.	30,622 euros	5866000 ptas.	35,255 euros
tax_band6	Upper Limit for Tax Band 6	6795000 ptas.	40,839 euros	7901000 ptas.	47,486 euros
tax_band7	Upper Limit for Tax Band 7	8625000 ptas.	51,837 euros	9936000 ptas.	59,717 euros
tax_band8	Upper Limit for Tax Band 8	10500000 ptas.	63,106 euros	12136000 ptas.	72,939 euros
tax_rate1	Tax Rate for Band 1	0.0%		0.0%	
tax_rate2	Tax Rate for Band 2	20.0%		20.0%	
tax_rate3	Tax Rate for Band 3	23.0%		24.6%	
tax_rate4	Tax Rate for Band 4	28.0%		29.0%	
tax_rate5	Tax Rate for Band 5	32.0%		33.0%	
tax_rate6	Tax Rate for Band 6	39.0%		39.0%	
tax_rate7	Tax Rate for Band 7	45.0%		45.0%	
tax_rate8	Tax Rate for Band 8	52.0%		53.0%	
tax_rate9	Tax Rate for Band 9	56.0%		56.0%	

2.3.5 Tax Credits

The 1998 Spanish Income Tax has a great number of non-refundable *tax credits*. Among them, the most important are tax credits specific to support families with dependent children and adults. Others are related to specific expenditures (health, rent and child care). Some tax credits are directed to units receiving income from employment (including units receiving pensions and benefits), donations and investments (including mainly main house purchasing and repairing and life insurance). There are also some regional tax-credits provided by the Spanish Autonomous Communities, which are also mainly focused as family relieves.

2.3.5.1 Child Tax credits

There is a tax credit for contributors with children. Up to a certain number, the amount of the tax credit per child increases with an additional kid. Some Autonomous Communities also provide tax credits for dependent children. Euromod simulates the regional child tax credits for Castilla y Leon, Catalunya, Galicia and the Community of Madrid.

Table 14. Description of the Child Tax Credit Components, 1998.

Euromod Code	Description of the Component	Value	
sp_it_ded_ch	Child Tax Credit		
ch_amt1	Tax credit for the first child	25000 ptas.	150 euros
ch_amt2	Tax credit for the second child	35000 ptas.	210 euros
ch_amt3	Tax credit for the third and following children	50000 ptas.	301 euros
sp_it_ded_ch_reg1	Regional Child Tax Credit 1 (Castilla y Leon)		
region1	Region number	4[a]	
reg1_deduction	Deduction for all children	30000 ptas.	180 euros
reg1_ch_deduction	Deduction for families with more than the child lower limit	10000 ptas.	60 euros
reg1_nch	Child Lower limit	3 children	
sp_it_ded_ch_reg2	Regional Child Tax Credit 2 (Catalunya)		
region2	Region number	5[b]	
reg2_deduction	Deduction for children if filed individually	12500 ptas.	75 euros
Reg2_deduction_marr	Deduction for children if filed jointly	25000 ptas.	150 euros
Reg2_nch	Minimum number of children to get the deduction	2	
Reg2_age	Age limit of Child	0 years	
Sp_it_ded_ch_reg3	Regional Child Tax Credit 3 (Galicia)		
Region3	Region number	1[c]	
Reg3_age	Age of child at which deduction applies	0 years	
Reg3_deduction1	Amount per child if number of children is lower than limit 1	20000 ptas.	120 euros
reg3_nch1	Child limit 1	2	
reg3_deduction2	Amount per child if number of children is lower than limit 2 and higher than limit1	30000 ptas.	180 euros
reg3_nch2	Child limit 2	3	
reg3_deduction3	Amount per child if number of children is lower than limi t3 and higher than limit 2	40000 ptas.	240 euros
reg3_nch3	Child limit 3	4	
reg3_deduction4	Amount per child if number of children is lower than limit 4 and higher than limit 3	50000 ptas.	301 euros
reg3_nch4	Child limit 4	5	
sp_it_ded_ch_reg4	Regional Child Tax Credit 4 (Madrid)		
region4	Region number	3[d]	
reg4_deduction	Deduction	25000 ptas.	150 euros
reg4_inc_limit	Single income limit	3500000 ptas.	21,035 euros
reg4_marr_inc_limit	Joint taxation income limit	5000000 ptas.	30,051 euros
reg4_income_base_il	Income list	taxbase	
reg4_age	Age of children	0 years	

[a] This region comprehends the Autonomous Communities of Castilla y Leon, Castilla la Mancha and Extremadura
[b] This region comprehends the Autonomous Communities of Catalunya, Valencia, Baleares
[c] This region comprehends the Autonomous Communities of Galicia, Asturias, Cantabria
[d] This region comprehends the Autonomous Communities of Madrid

2.3.5.2   Dependent Parents tax credits

The amount of this tax credit relies on the age of the dependent parent. Euromod also simulates the regional dependent parent tax credit in the Autonomous Community of Aragon.

Table 15.   Description of the Dependent Parents Tax Credit Components, 1998.

Euromod Code	Description of the Component	Value	
sp_it_ded_parent1	**Dependent Parents Tax Credit 1 (Aged below 75)**		
deduction	Deduction	16500 ptas.	99 euros
min_age	Lower age limit	0 years	
max_age	Upper age limit	74 years	
sp_it_ded_parent2	**Dependent Parents Tax Credit 2 (Aged 75 or more)**		
deduction	Deduction	32900 ptas.	198 euros
min_age	Lower age limit	75 years	
max_age	Upper age limit	200 years	
sp_it_ded_parent2_reg1	**Regional Dependent Parents Tax Credit 1 (Aged 75 or more)**		
min_age	lower age limit	75 years	
max_age	upper age limit	200 years	
region1	Region number	2[a]	
reg1_deduction	deduction	25000 ptas.	150 euros

[a] This region comprehends the Autonomous Communities of Euskadi, Navarra, Rioja, Aragón

2.3.5.3   Elderly Inactive Persons Tax Credit

This tax credit is aimed at inactive persons beyond a certain age. Euromod also simulates the regional elderly inactive persons tax credit in the Autonomous Community of Aragon.

Table 16.   Description of elderly Inactive Persons Tax Credit Components, 1998.

Euromod Code	Description of the Component	Value	
sp_it_ded_eld	**Elderly Inactive Persons Tax Credit (Aged 65 or more)**		
deduction	Deduction	20000 ptas.	120 euros
min_age	Lower age limit	65 years	
max_age	Upper age limit	200 years	
sp_it_ded_eld_reg1	**Regional Elderly Inactive Persons Tax Credit (Aged 65 or more)**		
min_age	Lower age limit	65 years	
max_age	Upper age limit	200 years	
region1	Region number	2[a]	
reg1_deduction	Deduction	25000 ptas.	150 euros

[a] This region comprehends the Autonomous Communities of Euskadi, Navarra, Rioja, Aragón

2.3.5.4   Specific Expenditure Tax Credits

These tax credits are directed to relieve the consumption of particular goods. Euromod simulates tax credits for medical expenses, rents and childcare. All these deductions are calculated as a percentage of the tax unit's expenditure. Nevertheless, the deduction for rents and childcare expenses is limited, the size of this restriction varies according to the type of tax scheme (joint or individual).

Table 17.   Description of the Specific Expenditure Tax Credits Components, 1998.

Euromod Code	Description of the Component	Value	
sp_it_ded_med_exp	**Medical expenses tax credit**		
deduction_rate	Deduction rate	15%	
deduction_base_il	Deduction base	med_ins_base	
sp_it_ded_rent	**Rent tax credit**		
deduction_rate	Deduction rate	15%	
deduction_limit	Deduction limit	100000 ptas.	601 euros
income_single_lt	Income single limit	3500000 ptas.	21,035 euros
income_married_lt	Income married limit	5000000 ptas.	30,051 euros
min_lt	Min limit	10%	
income_base_il	Income base	taxbase	
deduction_base_il	Value of deduction	rent	
sp_it_ded_ch_care			
Deduction_rate	Deduction rate	20%	
Deduction_limit	Deduction limit	100000 ptas.	601 euros
Deduction_base_il	Deduction base	ch_care	
Income_single_lt	Income single limit	3500000 ptas.	21,035 euros
Income_married_lt	Income married limit	5000000 ptas.	30,051 euros
min_lt	Min limit	10%	
ch_age_lt	Age limit for child	2 years	
income_base_il		taxbase	

2.3.5.5   Employment Income Tax Credit

This deduction is specific for tax-payers who earn employment income. The amount of the deduction is progressive (reduces as employment income increases), and it is restrained by a maximum and minimum limit. The import of the deduction is also limited if the sum of other types of income surpasses a certain level.

Table 18.   Description of Employment Income Tax Credit Components, 1998.

Euromod Code	Description of the Component	Value	
sp_it_emp_inc_tcred	**Employment Income Tax Credit**		
deduction_limit1	Deduction limit1	1071000 ptas.	6,437 euros
deduction1	Deduction1	72000 ptas.	433 euros
deduction_limit2	Deduction limit2	1971000 ptas.	11,846 euros
deduction2	Deduction2	72000 ptas.	433 euros
deduction_limit3	Deduction limit3	2000000 ptas.	12,020 euros
deduction3	Deduction3	27000 ptas.	162 euros
deduction4	Deduction4	27000 ptas.	162 euros
rate	Rate	5%	

3 Data

3.1 General description

The data used are from the Spanish sample of the European Community Household Panel (ECHP), designed by Statistical Office of the European Community (Eurostat) and collected by the Spanish National Institute of Statistics (INE). The datafile used is the User's Database (UDB), which is provided by Eurostat.

The information available in the database is representative of the Spanish population. It contains detailed material on income, housing and other demographic, social and economic characteristics of the respondents. The interviews are performed to all individuals of the household aged 16 or more. The information available for those individuals below that age is restricted to some demographic characteristics (age, gender and relationship with the other household members).

3.2 Sample selection, weighting

The baseline information comes from the 1996 wave of the ECHP (third wave). However, some data, especially about the individual's labour status, was also taken from the 1995 wave. After dropping out problematic observations (households with no income data, and individuals excluded, dead or lost), the database contains 6,119 households comprehending 18,991 individuals[5].

The weights provided by the ECHP are household weights aiming to correct for selective non-response and panel attrition. In Euromod this weight has been scaled-up to offset the cut-offs done on the original sample.

Table 19. Descriptive Statistics of the Grossing-up weight

	Grossing-up weight
Number	18991
Mean	2048.595
Median	1803.551
Maximum	5827.082
Minimum	83.210
Max/Min	70.029
Decile 1	675.917
Decile 9	3687.089
Dec 9 / Dec1	5.455

3.3 Variable adjustment

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[5] The original 1996 wave has 6,268 households and 19,766 individuals.

This section summarizes the most important adjustments done on the data in order to make it suitable to the purposes in Euromod. Most of the methods of adjustment were taken from the ones used in the development of a database for the Spanish national model ESPASIM[6], and are described in detail in Levy and Mercader-Prats (2001).

3.3.1 Splitting of Unemployment Benefits and Pensions

The social benefit variables available in the UDB are aggregated, i.e., each variable contains more than one type of benefit (for example, variable *pi1311* contains all unemployment-related benefits: insurance and assistance). This aggregation is a limitation for Euromod's purpose of analysing the benefit system in detail. To surpass this drawback some imputation methods were used to split the aggregated variables into the benefits needed. A detailed work based on the information provided in the survey and current legislation has been done to identify the type of pension or benefit that the individual in fact receives. Once identified, the value of the financial benefit is imputed to the recipient.

To illustrate this with an example, the unemployment insurance cannot be lower than 75% of the minimum wage, while the amount of the unemployment assistance is 75% of the minimum wage, therefore this value can be used to separate one from another. Since, by definition, the unemployment assistance has to be 75% of the minimum wage, this value was imputed to all individuals identified as unemployment assistance recipients. Table 20 shows the main data imputations made using this procedure.

Table 20. Splitting pensions and benefits variables for Euromod

Original Variable	New Variables	Method used to split
Unemployment Benefit (pi131)	- Unemployment insurance - Unemployment assistance	- Legal value of the unemployment assistance
Old-age pension (pi1321)	- Old-age insurance pension - Old-age minimum pension - Old-age non-contributory pension - Old-age assistance pension	- Eligibility requirements and legal values of old-age minimum pension - Eligibility requirements and legal values of old-age non-contributory and assistance pensions
Survivors pension (pi1322)	- Widow insurance pension - Widow minimum pension - Orphans pension	- Individual personal characteristics (age, marital status) - Eligibility requirements and legal values of widow minimum pension
Family benefit (pi133)	- Child benefit - Other family benefits	- Eligibility requirements of child benefit

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[6] Further information about Espasim can be found at Levy, Mercader-Prats and Planas (2000).

3.3.2   Imputation of the Social Insurance Contributions Regimes and Groups

As described in section 2.2, the Social Insurance Contributions are divided in regimes and some regimes are divided in contribution groups. The UDB does not provide this information. Notwithstanding, it offers some labour related variables that are useful to impute the individual's regime and group. The information taken into account in this case refers to type of employment and industry, number of hours worked and social-employment *status*.

In order to impute the regimes some previous data treatments have been done. The income variables refer to the calendar year 1995. However, the employment-related variables pertain to the individual's current status, which is 1996. To improve the consistency between those two sets of variables, the employment-related variables were imputed using either these variables available in the ECHP's second wave, or the month-by-month 1995 employment status, available in the third wave. These month-by-month variables were also used to impute the number of months each type of income is gained per year.

3.4   'Net-to-gross' conversion

The income information available in the survey is net of income tax withholdings and social insurance contributions. In order to obtain gross figures, self-employment incomes and income from liquid capital have been imputed according to the legislation of the income tax withholdings. In the case of employment incomes, this conversion is not a trivial matter, for this reason, a fixed-point algorithm has been developed taking into account the legislation concerning income tax withholdings and social insurance contributions (Levy and Mercader-Prats, 1999).

3.5   Summary statistics in data year

The comparison between the statistics provided by the ECHP database and external sources is in the Data Robustness Assessment report.

3.6 Updating

The monetary variables in the data have been updated to the common base year 1998 using the following indexes.

Adjustment Index	Index value	Monetary variables updated with this index	Data used for adjustment to 1998 and Source
E-ind	1.1881	Employment earnings	- Compensation of resident employees Source: National Accounts
Sfl-ind	1.1566	Self-employment earnings	- Gross operating surplus Source: National Accounts
Prv-ind	1.3764	Private transfers	- Miscellaneous current transfers Source: National Accounts
I-ind	0.7720	Investment income	- Property and entrepreneurial income Source: National Accounts

B-ind	1.1235	Social benefits
		  - Unemployment insurance
		  - Old-age insurance pensions
		  - Widow insurance pensions
		  - Orphans pensions
		  - Sick/invalidity pensions
		  - Social assistance benefit
		  - Family benefit
		  - Housing benefit
			- Social benefits
			Source: National Accounts

B01b-ind	1.0852	Unemployment assistance	- Nominal increase of the benefit Source: Social Security
B02b-ind	1.0843	Old-age minimum pension	- Nominal increase of the benefit Source: Social Security
B02c-ind	1.0847	Old-age non-contributory benefit	- Nominal increase of the benefit Source: Social Security
B02d-ind	1.0000	Old-age assistance benefit	- Nominal increase of the benefit Source: Social Security
Bkid-ind	1.0847	Child Benefit	- Nominal increase of the benefit Source: Social Security
B03b-ind	1.0844	Widow minimum pension	- Nominal increase of the benefit Source: Social Security
R-ind	1.2081	Rent	- House rent Source: Consumer's Price Index
M-ind	1.2589	Mortgage Interests	- Growth of average mortgages Source: Mortgage Statistics (INE)
Med-ind	1.2589	Medical Expenses	- Medical expenses Source: Consumer's Price Index (1995-1998):

4 Validation

4.1 Instruments of validation

Euromod was validated using two different instruments. The first instrument was the official statistics. This information permitted us to contrast the aggregate results obtained with Euromod's baseline simulation with the aggregated government statistics.

The second instrument used to validate Euromod was the Spanish tax-benefit model (ESPASIM). ESPASIM This is the first integrated tax and benefit model for Spain. It enables one to calculate the impact that taxes and benefits have on the income of a representative sample of individuals and families in Spain. ESPASIM takes micro-data containing information on these individuals and households and simulates the impact that different tax-benefit policy scenarios have on the incomes of this population. When given the characteristics of each individual in addition to income and expenditure, ESPASIM calculates the tax payable and the benefits that a person would receive under alternative tax policy systems (Levy, Mercader-Prats and Planas, 2000)[7]. Since it provides aggregate but also detailed individual and household information, it is the most effective tool to validate Euromod.

4.2 Benefits

4.2.1 Fully simulated benefits

As referred before, child benefit is the only benefit fully simulated by Euromod. The model can simulate both the eligibility conditions and the value of the benefit.

Table 21 presents Euromod baseline run results in comparison with the Spanish Tax-benefit Model (Espasim) and the national statistics. The outcome fits with the one obtained with Espasim, however it is underestimated with respect to the national official statistics (63.7 per cent).

Table 21. Child benefit – Comparison of Euromod baseline run with ESPASIM (Spanish Tax-benefit Model) and Official Statistics (in millions of pesetas).

Benefit	Euromod (1)	Espasim (2)	Adjustment (1)/(2)	Official Statistics (3)	Adjustment (1)/(3)
Child benefit	29,616	30,553	96.9%	46,517	63.7%

Sources: Euromod, Espasim, MTAS (1998)

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[7] More information about ESPASIM can be found at the web page http://selene.uab.es/mmercader/ESPASIM

4.2.2   Partially simulated benefits

Euromod does not simulate the eligibility conditions of the benefits presented in Table 22. Nevertheless, the value of these benefits can be simulated. Excepting the unemployment assistance, the results obtained by Euromod the same as the ones obtained by Epasim. The adjustment to official statistics is also reasonable for most benefits.

Table 22. Unemployment Assistance, Old-Age Minimum Pension, Widow Minimum Pension, Old-Age non-contributory Pension and Old-Age Assistance Pension – Comparison of Euromod baseline run with ESPASIM (Spanish Tax-benefit Model) and Official Statistics (in millions of pesetas).

Benefit	Euromod (1)	Espasim (2)	Adjustment (1)/(2)	Official Statistics (3)	Adjustment (1)/(3)
Unemployment assistance	464,551	464,559	100.0%	410,450	113.18%
Old-age minimum pension [1]	300,588	300,337	100.1%	313,698	95.82%
Widow minimum pension[1]	273,635	273,040	100.2%	262,318	104.31%
Old-age non-contributory pension	95,798	95,798	100.0%	107,850	88.82%
Old-age assistance pension	13,280	13,280	100.0%	12,611	105.31%
Total	1,147,853	1,147,015	100.1%	1,106,927	103.70%

Note: 1. Only the supplementary part of the minimum pension.
Sources: Euromod, Espasim, MTAS (1998), MTAS (1999)

4.2.3   Not simulated benefits

Neither the eligibility conditions, nor the value of these benefits can be simulated. Therefore, these benefits can only be read by Euromod, although, they could also be eliminated by the model. Euromod accounts for just over a 100 per cent of these benefits.

Table 23. Unemployment Insurance, Old-Age Insurance Pension, Widows and orphans Insurance Pension, Sick and invalidity Pension and Other family benefits – Comparison of Euromod baseline run with ESPASIM (Spanish Tax-benefit Model) and Official Statistics (in millions of pesetas).

Benefit	Euromod (1)	Espasim (2)	Adjustment (1)/(2)	Official Statistics (3)	Adjustment (1)/(3)
Unemployment insurance	556,889	556,895	100.0%	563,662	98.80%
Old-age insurance pension	5,451,428	5,424,429	100.5%	4,738,535	115.04%
Widows/Orphans pensions	1,162,930	1,121,805	103.7%	1,214,114	95.78%
Sick/invalidity pensions	1,398,637	1,398,643	100.0%	1,638,735	85.35%
Other Family benefits [1]	96,334	96,335	100.0%	178,409	54.00%
Total	8,666,218	8,598,107	100.8%	8,333,456	103.99%

Note: 1 Includes: "Pensión a favor de familiares" and "Child benefit for handicapped children".
Sources: Euromod, Espasim, Laparra and Aguilar (1997), MTAS (1998), MTAS (1999)

4.3   Social insurance contributions and taxes

4.3.1   Social insurance contributions

Table 24 shows the social insurance contributions by regimes of contribution in Euromod, Espasim and Official Statistics. Notice that the degree of adjustment between both models

is very good. They both adjust quite well contributions of the Public servants and workers under the general regime or unemployed. Contributions for agricultural employees and self-employed appear to be quite underreported in the model.

Table 24. Social insurance contributions - Comparison of Euromod baseline run with ESPASIM (Spanish Tax-benefit Model) and Official Statistics (in millions of pesetas).

Regime	Euromod (1)	Espasim (2)	Adjustment (1)/(2)	Official Statistics (3)	Adjustment (1)/(3)
General [1]	944,177	940,361	100.4%	1,094,549	86.26%
Agricultural Employees	111,959	111,976	100.0%	161,921	69.14%
Self Employed	591,676	591,676	100.0%	987,179	59.94%
Public Servant	152,535	152,557	100.0%	163,593	93.24%
Unemployed	41,328	41,329	100.0%	30,255	136.60%
Total	1,841,675	1,837,899	100.2%	2,437,497	75.56%

[1] Includes general, part-time, apprentice, coal-miners and household workers' regimes
Sources: Euromod, Espasim, MTAS (1999)

4.3.2 Income Tax

The results obtained by the baseline simulation in Euromod are quite close to the ones from Espasim and from the Spanish Tax Office (*Agencia Tributaria*), in relation to the personal income tax. However there is a significant difference between results being produced by Espasim and Euromod in relation to the tax base. This is due to a different method of accounting. Euromod accounts the taxbase as the overall income of all individuals in the population, while Espasim accounts it as the overall income of taxpayers.

Table 25. Income Tax Components - Comparison of Euromod baseline run with ESPASIM (Spanish Tax-benefit Model) and Official Statistics (in millions of pesetas).

Income Tax Component	Euromod (1)	Espasim (2)	Adjustment (1)/(2)	Official Statistics (3)	Adjustment (1)/(3)
Taxbase	38143051.8	32,462,253	117.5%	36,662,699	103.90%
Income Tax before Tax credit	7,230,365	6,215,919	116.3%	7,102,781	101.80%
Income Tax after Tax credit	5,241,795	5,497,101	92.7%	5,671,700	89.81%

Sources: Euromod, Espasim, Agencia Tributaria (1998) and MEH (1998).
Note. The "Taxbase" and "Income Tax before Tax credit" in EUROMOD and Espasim have different definitions

4.4 Poverty incidence

Table 26 compares the poverty incidence of the Euromod baseline run with the national model output and with a recent study on poverty by Eurostat. All indexes take the poverty threshold as 60% of median equivalent disposable income, using the modified OECD

equivalence scale[8], and use the same methodology. Results provided by Eurostat are also derived from the third wave of ECHP. However, in contrast to Euromod's or Espasim's results, which use income updated to 1998 levels, Eurostat's output relates to 1996 incomes. This difference in the data explains differences between poverty estimates between sources.

Table 26. Poverty incidence in Euromod compared with national results

Poverty incidence	Euromod Baseline 1998			Espasim 1998			Eurostat 1996		
	Poverty rate	FGT (1)	FGT (2)	Poverty rate	FGT (1)	FGT (2)	Poverty rate	FGT (1)	FGT (2)
< 75% of poverty line	8.88%	3.10%	1.65%	9.09%	3.43%	1.96%			
< 90% of poverty line	14.29%	4.45%	2.30%	14.49%	4.78%	2.61%			
< Poverty line	18.42%	5.62%	2.82%	18.29%	5.93%	3.13%	18.00%		
< 105 of poverty line	20.36%	6.29%	3.11%	20.55%	6.58%	3.42%			
< 125% of poverty line	29.37%	9.30%	4.49%	29.42%	9.56%	4.78%			

Sources: Euromod, Espasim and Mejer and Siermann (2000).

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[8] The modified OECD equivalence scale assigns 1 to the first person in the household, 0.3 to children aged below 14 and 0.5 to every other person.

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