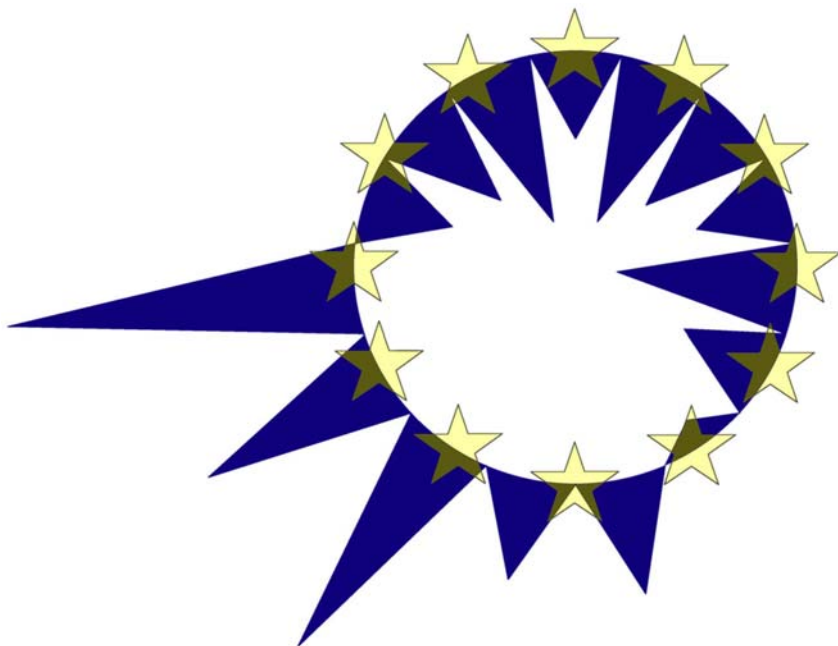


EUROMOD

COUNTRY REPORT



SPAIN (ES)

2005-2008

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EUROMOD version F3.0

(Continuation.)

Variable	Income Source/index type	2006	2007	2008
psuwd00	November Consumer Price Index	102.6	106.8	109.3
psuwdcn	November Consumer Price Index	102.6	106.8	109.3
tad	Nominal increase Widow's Minimum Pension	106.4	112.4	120.5
tin	Consumer Price Index	103.5	106.4	110.8
tis	Consumer Price Index	103.5	106.4	110.8
tpr	Consumer Price Index	103.5	106.4	110.8
tscee	Consumer Price Index	103.5	106.4	110.8
tscer	Consumer Price Index	103.5	106.4	110.8
tscse	Consumer Price Index	103.5	106.4	110.8
twl	Consumer Price Index	103.5	106.4	110.8
yds	Consumer Price Index	103.5	106.4	110.8
yem	Consumer Price Index	103.5	106.4	110.8
Yivwg	Eurostat / Labour market / Labour costs - Labour cost index - Annual data ⁵⁶	103.8	107.7	112.9
Yiy	Eurostat / Labour market / Labour costs - Labour cost index - Annual data ⁵⁷	103.8	107.7	112.9
yot	Consumer Price Index	103.5	106.4	110.8
ypp	Consumer Price Index	103.5	106.4	110.8
ypr	Consumer Price Index	103.5	106.4	110.8
yprrt	Consumer Price Index	103.5	106.4	110.8
ypt	Consumer Price Index	103.5	106.4	110.8
yse	Consumer Price Index	103.5	106.4	110.8
yunsv	Consumer Price Index	103.5	106.4	110.8
afc	Consumer Price Index	103.5	106.4	110.8
xhc	Consumer Price Index	103.5	106.4	110.8
xhcmomi	Consumer Price Index	103.5	106.4	110.8
xhcrt	Consumer Price Index	103.5	106.4	110.8
xmp	Consumer Price Index	103.5	106.4	110.8
xpp	Consumer Price Index	103.5	106.4	110.8

Notes: for further details see the DRD.

4. VALIDATION

4.1. Aggregate Validation

4.1.1. Input data: income sources used by the model but not simulated

Table 23 shows the number of recipients and the average amount per recipient of different income sources available in EUROMOD's input data. These incomes are used by the model but are not simulated.

⁵⁶ http://epp.eurostat.ec.europa.eu/portal/page/portal/labour_market/labour_costs/database

⁵⁷ http://epp.eurostat.ec.europa.eu/portal/page/portal/labour_market/labour_costs/database

Due to dropping a few observations and re-weighting the sample, the number and average amount of the different income sources in the input database of EUROMOD are slightly different from those in the original EU-SILC. This is the case, for example, for employment and self-employment income. The number of recipients and average amount are further different in the case of income sources that are reported in the EU-SILC at the household level and which were assigned to particular individuals in the EUROMOD input data. Some examples of this are investment, property and other incomes.

Finally, some income sources in the EUROMOD input database were derived from EU-SILC aggregate variables that include more than one type of income. For example, severance payments, included in the EU-SILC together with unemployment benefits (variable py090g) were split for EUROMOD.

Table 24 shows the number of recipients and average amount of pensions and benefits from EUROMOD's input database. Some of these benefits are simulated and the results from their simulation will be presented in Table 28 below. In aggregate terms, pensions seem to be well represented in the EU-SILC and EUROMOD input data. However, by type of pension there is a considerable mismatch between the data and the official external sources. The main reason for this is that, contrary to official statistics, disability and survivor pensions of people aged 65 or more are classified as old-age pensions in the EU-SILC. As a result, its number is overestimated and average slightly underestimated (old-age pensions are in average considerably higher than survivor pensions).

Pension complements were derived from the original EU-SILC data using a splitting procedure (see the DRD for more on this). The results suggest that overall the number and average amount of pension complements is slightly overestimated in the input data. Results are considerably worse when broken down by type of pension (do notice that disability pension complements were not derived).

Old-age non-contributory (assistance) benefit was also derived from the EU-SILC aggregate variable py100g. Figures suggest that the number and average amount are slightly underestimated.

The number of health benefits in the input data in Table 24 are significantly underestimated compared to external sources. This comes about because external data are constructed using sickness episodes along the year and there are no available external data that allow for the identification of the number of individuals experiencing various episodes along the year. Further, many individuals in the input data may declare income from sickness benefits as employment income.

Child benefits are clearly underreported in the EU-SILC data. The number of recipients in the data is about half of those according to official statistics. On the other hand, the average amount is substantially higher, suggesting that low-amount benefits are particularly underreported.

Unemployment benefit data results are not strictly comparable to official statistics. While the former computes the annual number of recipients and average benefit amount, the later shows the average number of recipients and amount at any given month during the year. As a result, it is not surprising that data results show a larger number of recipients and a lower average amount.

The number of housing benefits after data is overestimated in the input data while their average amount is, in contrast, underestimated. Take into account that very few people in Spain receive housing benefit receivers and their quantities tend to be small. Social assistance benefits are significantly underestimated in the input database compared to external sources; this is most likely to be due to a generalized low benefit take-up rate in Spain.

Table 25 shows the number and average amount of social contributions and income tax in EUROMOD's input database, EU-SILC and official statistics. EU-SILC reports income tax and employee social contributions in a single variable (hy140g) and final income tax adjustment in another variable (hy145n). Both variables are reported at the household level, and in order to compute results were assigned to one individual in each household. As in many cases more than one household member actually pays income tax or contributions it is not surprising that the number of taxpayers is underestimated and the average overestimated.

Table 23. INPUT DATA VALIDATION: INCOME SOURCES USED BY THE MODEL BUT NOT SIMULATED: ORIGINAL AND IN-KIND INCOME

Description	Number (thousands)					Average amount (euro)				
	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio
Original income										
Employment income	17,962	17,100	105%	—	—	16,383	16,645	98%	—	—
Self-employment income	2,685	2,680	100%	—	—	14,209	14,118	101%	—	—
Investment income	5,084	3,983	128%	—	—	590	751	79%	—	—
Property Income	1,342	782	172%	—	—	3,322	5,663	59%	—	—
Private pension income	212	212	100%	—	—	5,977	5,960	100%	—	—
Private transfers	377	375	101%	—	—	3,810	3,810	100%	—	—
Other income	810	498	163%	—	—	483	782	62%	—	—
Severance payments	134	—	—	—	—	5,647	—	—	—	—
In-kind income										
Fringe benefits	296	298	100%	—	—	3,493	3,494	100%	—	—
Imputed housing income	0	0	—	—	—	—	—	—	—	—

Sources: EUROMOD results based on input data, own calculations using EU-SILC 2006.

Table 24. INPUT DATA VALIDATION: INCOME SOURCES USED BY THE MODEL BUT NOT SIMULATED: PENSIONS AND BENEFITS

Description	Number (thousands)					Average amount (euro)				
	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio
Pensions	7,626			7,980	96%	8,656			8,845	98%
Disability	683	678	101%	833	82%	7,462	7,462	100%	9,801	76%
Old-age	6,752	6,641	102%	4,678	144%	9,572	9,591	100%	10,140	94%
Old-age pension	6,493			4,678	139%	8,940			9,612	93%
Survivors	491	488	101%	2,469	20%	6,151	6,150	100%	6,071	101%
Survivors-widow	400			2,166	18%	6,412			6,374	101%
Survivors-other	91			263	35%	3,330			3,753	89%
Pension complements	2,417			2,132	113%	2,364			1,914	123%
Old-age complement	2,338			1,357	172%	2,378			1,817	131%
Survivors-widow complement	79			774	10%	1,944			2,086	93%
Benefits										
Old-age assistance	259			279	93%	3,944			4,416	89%
Sickness/health	617	614	101%	5,684	11%	4,284	4,284	100%	1,127	380%
Family/Child	516	513	101%	1,054	49%	2,359	2,360	100%	822	287%
Child benefit-not disabled	23			836	3%	588			280	210%
Child benefit-disabled	3			218	2%	3,600			2,891	125%
Child benefit-other	382			-	-	2,761			-	-
Unemployment benefits	1,647	1,772	93%	1,246	132%	3,447	3,612	95%	7,645	45%
Unemployment insurance	1,161			687	169%	3,584			9,522	38%
Unemployment assistance	487			559	87%	3,119			5,336	58%
Housing benefits	222	151	147%	—	—	3,486	5,097	68%	—	—
Social assistance	112	112	101%	101	111%	1,838	1,838	100%	3,614	51%

Sources: EUROMOD results based on input data, own calculations using EU-SILC 2006 and official statistics from Table 5 and Table 6.

Table 25. INPUT DATA VALIDATION: INCOME SOURCES USED BY THE MODEL BUT NOT SIMULATED: SOCIAL CONTRIBUTIONS AND DIRECT PERSONAL TAXES

Description	Number (thousands)					Average amount (euro)				
	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio
Social contributions										
Employee contributions	0	—	—	14,980	0%	—	—	—	858	—
Self-employed contributions	0	—	—	2,946	0%	—	—	—	3,038	—
Employer contributions	0	—	—	—	—	—	—	—	3,555	—
Direct personal taxes										
Income tax	0	—	—	18,160	0%	—	—	—	3,249	—
Income tax adjustment	10,627	10,672	100%	17,010	62%	-384	-378	101%	-118	325%
Property tax	550	—	—	—	—	755	—	—	—	—
Income tax + contributions	12,207	13,476	91%	18,160	67%	5,018	4,220	119%	4,449	113%

Sources: EUROMOD results based on input data, own calculations using EU-SILC 2006 and official statistics from Table 8, Table 9, Table 11, and Table 12.

Validation of 2005-2008 simulations: income sources used by the model but not simulated.

Table 26 and Table 27 compare the number of recipients/taxpayers and the average amount of different income sources, benefits and taxes not simulated but used by EUROMOD and external sources for 2005 to 2008, respectively. Although there are some changes in the number of recipients and average amount of these incomes, none of those for whom there is external data available are dramatic. Therefore, the EU-SILC 2005 seems to do a rather acceptable job representing these income sources for later years.

Table 26. 2005-2008 INPUT DATA VALIDATION: INCOME SOURCES USED BY THE MODEL BUT NOT SIMULATED, NUMBER OF INCOME RECIPIENTS (thousands)

Description	EUROMOD				External				Ratio			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Original income												
Employment income	17.962	17.962	17.962	17.962	—	—	—	—	—	—	—	—
Self-employment income	2.685	2.685	2.685	2.685	—	—	—	—	—	—	—	—
Investment income	5.084	5.084	5.084	5.084	—	—	—	—	—	—	—	—
Property Income	1.342	1.342	1.342	1.342	—	—	—	—	—	—	—	—
Private pension income	212	212	212	212	—	—	—	—	—	—	—	—
Private transfers	377	377	377	377	—	—	—	—	—	—	—	—
Other income	810	810	810	810	—	—	—	—	—	—	—	—
Severance payments	134	134	134	134	—	—	—	—	—	—	—	—
In-kind income												
Fringe benefits	296	296	296	296	—	—	—	—	—	—	—	—
Imputed housing income	0	0	0	0	—	—	—	—	—	—	—	—
Pensions	7.626	7.626	7.626	7.626	7.980	8.165	8.274	8.391	96%	93%	92%	91%
Disability	683	683	683	683	833	860	889	907	82%	79%	77%	75%
Old-age	6.752	6.752	6.752	6.752	4.678	4.809	4.863	4.937	144%	140%	139%	137%
Old-age pension	6.493	6.493	6.493	6.493	4.678	4.809	4.863	4.937	139%	135%	134%	132%
Survivors	491	491	491	491	2.469	2.496	2.522	2.547	20%	20%	19%	19%
Survivors - widow	400	400	400	400	2.166	2.197	2.226	2.250	18%	18%	18%	18%
Survivors - other	91	91	91	91	263	260	258	259	35%	35%	35%	35%
Benefits												
Sickness/health	617	617	617	617	5.684	5.657	8.041	7.695	11%	11%	8%	8%
Child benefit - other	382	382	382	382	—	—	—	—	—	—	—	—
Housing	222	222	222	222	—	—	—	—	—	—	—	—
Social Exclusion	112	112	112	112	101	103	103	114	111%	109%	109%	98%
Direct personal taxes												
Property tax	550	550	550	550	—	—	—	—	—	—	—	—

Sources: EUROMOD simulation results and official statistics from Table 5, and Table 11.

Table 27. 2005-2008 INPUT DATA VALIDATION: INCOME SOURCES USED BY THE MODEL BUT NOT SIMULATED, AVERAGE AMOUNT (euro per year)

Description	EUROMOD				External				Ratio			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Original income												
Employment income	16.383	17.006	17.645	18.498								
Self-employment income	14.209	14.708	15.120	15.738								
Investment income	590	611	628	653								
Property Income	3.322	3.438	3.535	3.679								
Private pension income	5.977	6.187	6.360	6.620								
Private transfers	3.810	3.944	4.054	4.220								
Other income	483	500	514	535								
Severance payments	5.647	5.845	6.009	6.255								
In-kind income												
Fringe benefits	3.493	3.616	3.717	3.869								
Imputed housing income												
Pensions	8.656	8.881	9.242	9.462								
Disability	7.462	7.656	7.968	8.157	9.801	9.800	10.650	11.221	76%	78%	75%	73%
Old-age	9.572	9.867	10.296	10.605								
Old-age pension	8.940	9.172	9.546	9.773	9.612	9.612	10.640	11.403	93%	95%	90%	86%
Survivors	6.151	6.322	6.585	6.758	6.071	6.077	6.672	7.094	101%	104%	99%	95%
Survivors - widow	6.412	6.579	6.847	7.010	6.374	6.374	6.976	7.406	101%	103%	98%	95%
Survivors - other	3.330	3.417	3.556	3.640	3.753	3.751	4.212	4.549	89%	91%	84%	80%
Benefits												
Sickness/health	4.284	4.435	4.559	4.745	1.127	1.211	902	1.000				
Child benefit - other	2.761	2.910	3.070	3.228								
Housing	3.486	3.609	3.710	3.862								
Social Exclusion	1.838	1.903	1.956	2.036	3.614	3.590	4.051	3.860				
Direct personal taxes												
Property tax	755	782	803	836								

Sources: EUROMOD simulation results and official statistics from Table 6 and Table 12.

4.1.2. Simulated pensions and benefits

Table 28 shows the number of recipients and average amount of social benefits simulated by EUROMOD.

Pension complements are simulated in the model computing the eligibility as a combination of being reported in the input data (i.e., only those who report pension complement are considered) and the income test (which is fully simulated). The amount of the complement is also simulated by the model. The number of recipients in the EUROMOD simulation is very similar to those in the input data. As mentioned in the previous section, overall the number and average amount are similar to those in the official statistics. However, since the EU-SILC considers survivor pensions of those aged 65 or more are considered as old-age benefits the distribution between old-age and survivor complement in EUROMOD is clearly incorrect.

Old-age assistance is simulated following the same approach as pension complements: eligibility is taken from data but combined with an income test that is simulated by the model. The amount of the benefit is also simulated. According to results, the number of recipients and average benefit computed by the model is consistent with official statistics.

Child benefits are fully simulated in EUROMOD. Overall the number of recipients and average amount simulated are similar to official statistics and substantially higher than in the input data. By benefits, the national and disability child benefit results are not strictly comparable with official statistics: simulated results are computed per recipient (usually household) while official statistics are per child. As for regional child benefits, although the sample size is not large enough to be representative at the regional level, overall the number and average amounts are comparable to the official statistics. Table 29 shows results at the regional level.

Unemployment benefits are simulated following the same approach as pension complements and old-age assistance - eligibility is taken from data but combined with an income test that is simulated by the model, and the amount of the benefit is fully simulated. As suggested in the previous section, EUROMOD results and official statistics are measured differently and therefore are not strictly comparable.

Regional social assistance benefits are fully simulated in EUROMOD (i.e., eligibility is not conditional on being reported in the data or other ad hoc condition). As a result, the number of recipients computed by the simulation reflects the theoretical entitlement (i.e., it doesn't account for non take up and administrative procedures that limit the number of actual recipients). Table 30 shows results at the regional level.

Table 28. BASELINE VALIDATION: SIMULATED PENSIONS AND BENEFITS

Description	Number (thousands)					Average amount (euro)				
	EUROMOD	Input data	Ratio	Ext. Source	Ratio	EUROMOD	Input data	Ratio	Ext. Source	Ratio
Pension Complements	2.397	2.417	99%	2.132	112%	2.250	2.364	95%	1.914	118%
Old-age complement	2.318	2.338	99%	1.357	171%	2.265	2.378	95%	1.817	125%
Survivor Complement	79	79	100%	774	10%	1.813	1.944	93%	2.086	87%
Benefits										
Old-age assistance	247	259	95%	279	88%	4.164	3.944	106%	4.416	94%
Child benefits	1.094	516	212%	1.054	104%	912	2.359	39%	822	111%
National Child benefit	652	23	2794%	836	78%	425	588	72%	280	152%
Disability child benefit	149	3	4349%	218	68%	3.407	3.600	95%	2.891	118%
National means-tested birth benefit	15	—	—	—	—	451	—	—	—	—
Regional child benefits	278	—	—	314	89%	746	—	—	645	116%
Regional means-tested birth benefit	13	—	—	—	—	820	—	—	—	—
Regional universal birth benefit	0	—	—	—	—	1.983	—	—	—	—
Regional means-tested large family benefit	0	—	—	—	—	360	—	—	—	—
Regional means-tested child benefit	28	—	—	—	—	1.326	—	—	—	—
Regional universal child benefits	237	—	—	—	—	672	—	—	—	—
Unemployment benefits	1.705	1.647	103%	1.246	137%	3.255	3.447	94%	7.645	43%
Unemployment insurance	1.161	1.161	100%	687	169%	3.496	3.584	98%	9.522	37%
Unemployment assistance	544	487	112%	559	97%	2.742	3.119	88%	5.336	51%
Regional social assistance benefits	563	112	502%	101	559%	3.024	1.838	164%	3.614	84%

Sources: EUROMOD results based on simulations, EUROMOD's input data and official statistics from Table 5 and Table 6.

Table 29. BASELINE VALIDATION: SIMULATED REGIONAL CHILD BENEFITS, BY REGION

Description	Number (thousands)					Average amount (euro)				
	EUROMOD	Input data	Ratio	Ext. Source	Ratio	EUROMOD	Input data	Ratio	Ext. Source	Ratio
Regional child benefits	278	—	—	314	89%	746	—	—	645	116%
61 Andalusia	0	—	—	2	0%	—	—	—	—	—
24 Aragon	0	—	—	0	0%	—	—	—	3.281	—
12 Asturias	0	—	—	0	—	—	—	—	—	—
53 Illes Balears	0	—	—	0	—	—	—	—	—	—
70 Canarias	0	—	—	0	—	—	—	—	—	—
13 Cantabria	17	—	—	18	94%	1.405	—	—	1.041	135%
42 Castilla-La Mancha	0	—	—	0	—	—	—	—	—	—
41 Castilla y León	13	—	—	20	66%	820	—	—	721	—
51 Catalunya	226	—	—	243	93%	628	—	—	569	—
43 Extremadura	0	—	—	0	—	—	—	—	—	—
11 Galicia	0	—	—	0	—	—	—	—	—	—
23 La Rioja	0	—	—	0	—	—	—	—	—	—
30 Madrid	0	—	—	0	—	—	—	—	—	—
62 Murcia	0	—	—	0	—	—	—	—	—	—
22 Navarra	11	—	—	13	80%	1.216	—	—	877	—
21 Basque Country	11	—	—	18	62%	1.594	—	—	1.100	—
52 Valencia	0	—	—	0	—	—	—	—	—	—

Sources: EUROMOD results based on simulations, and official statistics from Table 5 and Table 6.



Table 30. BASELINE VALIDATION: SIMULATED REGIONAL SOCIAL ASSISTANCE BENEFITS, BY REGION

Description	Number (thousands)					Average amount (euro)				
	EUROMOD	Input data	Ratio	Ext. Source	Ratio	EUROMOD	Input data	Ratio	Ext. Source	Ratio
Regional social assistance benefits	563	112	502%	101	559%	3,024	1,838	164%	3,614	84%
61 Andalusia	115	—	—	—	—	3,140	—	—	—	—
24 Aragon	12	—	—	—	—	3,203	—	—	—	—
12 Asturias	18	—	—	—	—	3,019	—	—	—	—
53 Illes Balears	8	—	—	—	—	2,899	—	—	—	—
70 Canarias	42	—	—	—	—	2,884	—	—	—	—
13 Cantabria	6	—	—	—	—	3,507	—	—	—	—
42 Castilla-La Mancha	27	—	—	—	—	2,969	—	—	—	—
41 Castilla y León	20	—	—	—	—	2,644	—	—	—	—
51 Catalunya	73	—	—	—	—	2,816	—	—	—	—
43 Extremadura	27	—	—	—	—	2,823	—	—	—	—
11 Galicia	31	—	—	—	—	2,557	—	—	—	—
23 La Rioja	2	—	—	—	—	2,881	—	—	—	—
30 Madrid	59	—	—	—	—	3,205	—	—	—	—
62 Murcia	10	—	—	—	—	3,127	—	—	—	—
22 Navarra	5	—	—	—	—	4,493	—	—	—	—
21 Basque Country	62	—	—	—	—	3,533	—	—	—	—
52 Valencia	47	—	—	—	—	2,671	—	—	—	—

Sources: EUROMOD results based on simulations, and official statistics from Table 5 and Table 6.

Validation of 2005-2008 simulations: simulated pensions and benefits.

Table 31 and Table 32 present the number of recipients and the average amount of 2005-2008 social benefits. The most significant changes are the increase in the number and average amount of overall simulated child benefits and the increase in the number of unemployment benefits in external statistics. The main drivers of the increase in child benefits are changes in regional child benefits and the implementation of the universal birth benefit in 2008. The increase in the number of unemployment benefits reflect the dramatic increase in unemployment that happen in Spain due to the global financial crisis.

Table 31. 2005-2008 SIMULATION VALIDATION: SIMULATED PENSIONS AND BENEFITS, NUMBER OF RECIPIENTS (thousands)

Description	EUROMOD				External				Ratio			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Pension Complements	2.397	2.401	2.401	2.402	2.132	2.132	2.151	2.078	112%	113%	112%	116%
Old-age complement	2.318	2.322	2.322	2.323	1.357	1.361	1.369	1.332	171%	171%	170%	174%
Survivor Complement	79	79	79	79	774	771	782	746	10%	10%	10%	11%
Benefits												
Old-age assistance	247	247	247	247	279	277	271	265	88%	89%	91%	93%
Child benefits	1.107	1.144	1.186	1.780	1.054	1.007	958	1.015	105%	114%	124%	175%
National Child benefit	652	650	638	759	836	784	729	779	78%	83%	88%	97%
Disability child benefit	149	159	162	162	218	223	229	236	68%	71%	71%	68%
National means-tested birth benefit	15	15	15	12								
National universal birth benefit	0	0	0	416								
Regional child benefits	278	292	342	403	314	326	411	478	89%	90%	83%	84%
Regional means-tested birth benefit	13	29	29	29								
Regional universal birth benefit	0	0	0	58								
Regional means-tested large family benefit	0	0	0	0								
Regional means-tested child benefit	28	25	67	62								
Regional universal child benefits	237	237	246	253								
Unemployment benefits	1.705	1.706	1.715	1.715	1.246	1.279	1.356	1.747	137%	133%	126%	98%
Unemployment insurance	1.161	1.161	1.161	1.161	687	720	780	1.101	169%	161%	149%	105%
Unemployment assistance	544	545	554	554	559	559	576	646	97%	98%	96%	86%
Regional social assistance benefits	563	593	601	619	101	103	103	114	559%	578%	583%	542%

Sources: EUROMOD simulation results and official statistics from Table 5.

Table 32. 2005-2008 SIMULATION VALIDATION: SIMULATED PENSIONS AND BENEFITS, AVERAGE AMOUNT (euro per year)

Description	EUROMOD				External				Ratio			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Pension Complements	2.250	2.572	2.820	3.258	1.914	2.133	2.299	2.686	118%	121%	123%	121%
Old-age complement	2.265	2.589	2.825	3.263	1.817	2.043	2.207	2.583	125%	127%	128%	126%
Survivor Complement	1.813	2.067	2.672	3.089	2.086	2.292	2.461	2.871	87%	90%	109%	108%
Benefits												
Old-age assistance	4.164	4.355	4.660	4.940	4.416	4.221	4.373	4.598	94%	103%	107%	107%
Child benefits					822	894	969	914				
National Child benefit	425	424	426	466	280	281	280	262	152%	151%	152%	178%
Disability child benefit	3.407	3.552	3.681	3.878	2.891	3.051	3.163	3.066	118%	116%	116%	126%
National means-tested birth benefit	451	451	451	1.000								
National universal birth benefit				2.516								
Regional child benefits	746	785	740	717	645	638	622	682	116%	123%	119%	105%
Regional means-tested birth benefit	820	829	829	829								
Regional universal birth benefit	1.983	2.403	2.460	137								
Regional means-tested large family benefit	360	360	360	360								
Regional means-tested child benefit	1.326	1.520	807	833								
Regional universal child benefits	672	701	711	809								
Unemployment benefits	3.255	3.353	3.494	3.631	7.645	7.652			43%	44%		
Unemployment insurance	3.496	3.618	3.787	3.941	9.522	9.453			37%	38%		
Unemployment assistance	2.742	2.790	2.880	2.982	5.336	5.330			51%	52%		
Regional social assistance benefits	3.024	3.045	3.176	3.321	3.614	3.590	4.051	3.860	84%	85%	78%	86%

Sources: EUROMOD simulation results and official statistics from Table 6.

4.1.3. Simulated social contributions

Table 33 shows the number of contributors and average amount of social insurance contributions simulated by EUROMOD.

According to results, the number and average amount of *employee and employer contributions* simulated by EUROMOD are slightly overestimated but this is due to the nature of external data. External data count the number of contributing individuals at the last date of a given month along the year. We chose June as a reference. Given that EUROMOD simulates all contributors to the Social Security System along the year, the number simulated by EUROMOD must clearly be significantly larger than that obtained from a cross-section of contributors at any particular month. A further source of disagreement in these numbers is the fact that we do not include civil servants contributions. In EUROMOD, civil servants are indistinguishable from private sector workers, adding these to the number and average amount of contributions will reduce the overestimation of these numbers in EUROMOD.

The number and average amount of *self-employed contributions* simulated by EUROMOD are slightly lower than official statistics. As for the number of contributions this may be due to some self employee failing or refusing to report their earnings. The fact that the average contribution is lower in EUROMOD is consistent with the fact that in the simulation it is assumed that all self-employed opt for paying the minimum contribution.

Table 33. BASELINE VALIDATION: SIMULATED SOCIAL CONTRIBUTIONS

Description	Number (thousands)					Average amount (euro)				
	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio
Employee contributions										
Employee contributions	17,962			14,980	120%	997			858	116%
Pension insurance	17,962			—	—	738			—	—
Unemployment insurance	17,962			—	—	243			—	—
Other insurances	17,413			—	—	16			—	—

(Keep.)



(Continuation.)

Description	Number (thousands)					Average amount (euro)				
	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio
Self-employee contributions	2,576			2,946	87%	2,596			3,038	85%
Pension insurance	2,576			—	—	2,277			—	—
Disability insurance	2,576			—	—	307			—	—
Health insurance	325			—	—	91			—	—
Employer contributions										
Employee contributions	17,962			14,980	120%	4,787			3,555	135%
Pension insurance	17,962			—	—	3,689			—	—
Unemployment insurance	17,962			—	—	942			—	—
Other insurances	17,962			—	—	156			—	—

Sources: EUROMOD results based on input data, own calculations using EU-SILC 2006 and official statistics from Table 8 and Table 9.

Validation of 2005-2008 simulations: simulated social contributions.

Table 34 and Table 35 show the number of payers and the average amount of 2005-2008 social contributions. Results suggest that, as expected, EUROMOD fails to capture the increase in the number of contributions (particularly among self-employed). On the other hand, the increases in the average contribution amounts simulated by the model are in line with external statistics.

Table 34. 2005-2008 SIMULATION VALIDATION: SIMULATED SOCIAL CONTRIBUTIONS, NUMBER OF PAYERS (thousands)

Description	EUROMOD				External				Ratio			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Employee contributions												
Employee contributions	17.962	17.962	17.962	17.962	14.980	15.619	16.231	15.794	120%	115%	111%	114%
Pension insurance	17.962	17.962	17.962	17.962								
Unemployment insurance	17.962	17.962	17.962	17.962								
Other insurances	17.413	17.413	17.413	17.413								
Self-employed contributions												
Self-employee contributions	2.576	2.576	2.576	2.576	2.946	3.028	3.135	3.405	87%	85%	82%	76%
Pension insurance	2.576	2.576	2.576	2.576								
Disability insurance	2.576	2.576	2.576	2.576								
Health insurance	325	325	325	325								
Employer contributions												
Employer contributions	17.962	17.962	17.962	17.962								
Pension insurance	17.962	17.962	17.962	17.962								
Unemployment insurance	17.962	17.962	17.962	17.962								
Other insurances	17.962	17.962	17.962	17.962								

Sources: EUROMOD simulation results and official statistics from Table 8.

Table 35. 2005-2008 SIMULATION VALIDATION: SIMULATED SOCIAL CONTRIBUTIONS, AVERAGE CONTRIBUTION (euro per year)

Description	EUROMOD				External				Ratio			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Employee contributions												
Employee contributions	997	1.035	1.075	1.123	858	905	934	0	116%	114%	115%	
Pension insurance	738	767	796	831								
Unemployment insurance	243	253	262	274								
Other insurances	16	17	17	18								

(Keep.)

(Continuation.)

Description	EUROMOD				External				Ratio			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Self-employed contributions												
Self-employee contributions	2.596	2.647	2.703	2.727	3.038	3.110	3.156	3.120	85%	85%	86%	87%
Pension insurance	2.277	2.322	2.371	2.401								
Disability insurance	307	313	320	317								
Health insurance	91	93	96	72								
Employer contributions												
Employer contributions	4.787	4.970	5.082	5.297	3.555	3.726	3.892	0	135%	133%	131%	
Pension insurance	3.689	3.830	3.975	4.153								
Unemployment insurance	942	979	973	973								
Other insurances	156	162	134	171								

Sources: EUROMOD simulation results and official statistics from Table 9.

4.1.4. Simulated taxes

Table 36 shows the number of taxpayers and average amount of income tax and some of its key component simulated by EUROMOD.

As explained in section 2.5.1, the income tax rules are different for the Basque country and Navarra. Nevertheless, for simplicity, we currently do not account for this. As a result, we apply the income tax rules of the common fiscal territory (i.e., all other Spanish regions) on the whole Spanish sample. Since the simulation results for the Basque country and Navarra income tax are not comparable with the official statistics, most figures presented correspond only to the common fiscal territory.

Results suggest that overall EUROMOD captures correctly the number of taxpayers. However, the average amount of simulated taxes is lower than reported in official statistics. Comparing the number and average amounts of the components of taxable income, it becomes clear that a key reason for the underestimation of the amount of income tax is the underreporting of capital income and the absence of property gains information in the data.

The number and average amount of the main tax allowances (personal, family and employment) in EUROMOD is quite close to the official statistics. However, results underestimate the average tax base and the “gross” income tax (income tax before tax credits). Again this is likely to be due to data limitations with capital income and property gains.

Due to lack of data in the EU-SILC 2006, mortgage tax credit is not simulated⁵⁸. Finally, the refundable child tax credit (paid to working mothers with children under 3 years of age) is overestimated both in number and amount. Further analysis will be carried out to find the cause of such difference.

Table 36. BASELINE VALIDATION: SIMULATED TAXES

Description	Number (thousands)					Average amount (euro)				
	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio
Income tax										
Income tax	18.122			18.160	100%	2.573			3.249	79%
Common fiscal territory	16.802			17.105	98%	2.546			3.040	84%
Basque country	1.022			1.055	97%	2.770			—	—
Navarra	298			—	—	3.364			—	—

(Keep.)

⁵⁸ According to EU-SILC documentation mortgage interests will be available in the EU-SILC 2007 data. See (EUROSTAT (2010) Description of target variables: Cross-sectional and Longitudinal 2008 operation (Version January 2010).

http://circa.europa.eu/Public/irc/dsis/eusilc/library?l=/guidelines_questionnaire/operation_guidelines/silc065_version/EN_1.0_&a=d



(Continuation.)

Description	Number (thousands)					Average amount (euro)				
	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio
Common fiscal territory										
Taxable income	16.744			17.095	98%	18.465			20.325	91%
Work	15.239			15.380	99%	18.089			18.921	96%
Self-employment	1.715			3.068	56%	18.264			9.324	196%
Capital	2.781			14.920	19%	1.174			863	136%
Property income	834			1.336	62%	4.091			5.250	78%
Property gain	—		—	1.845	—	—		—	13.281	—
Personal-family tax allowance	16.802			16.985	99%	4.865			4.850	—
Personal tax allowance	16.802			—	—	4.157			—	—
Child tax allowance	6.453			—	—	1.707			—	—
Dependent parent tax allowance	648			—	—	1.374			—	—
Employee tax allowance	16.663			15.350	109%	2.752			2.629	105%
Tax base	16.802			13.919	121%	11.020			15.283	72%
Income tax before tax credits	16.802			17.105	98%	2.559			3.281	78%
Mortgage tax credit	0			5.681	0%	—		—	1.003	—
Refundable child tax credit	829			611	136%	1.223			914	—
Income tax	16.802			17.105	98%	2.546			3.040	84%

Sources: EUROMOD results based on input data, own calculations using EU-SILC 2006 and official statistics from Table 11, and Table 12.

Validation of 2005-2008 simulations: simulated taxes.

Table 37 and Table 38 show the number of payers and the average amount of 2005-2008 income tax and its components. At the moment of writing this report the most recent detailed external information about the Spanish income tax referred to the year 2006. Results suggest that the model's accuracy predicting the average amount of income tax falls from 84% in 2005 to 77% in 2006. The main cause of this fall is the significant increase in the number and average amount of income from property gain (the overall amount increased by 71% between 2005 and 2006).

Although no external information is available to validate, the reduction in the number of taxpayers in 2007, simulated by the model, is consistent with the nature of an important tax reform implemented in that year. Such reform was then extended in 2008 with the introduction of the 400 euro tax credit (simulated in EUROMOD as "other tax credits").

Table 37. 2005-2008 SIMULATION VALIDATION: SIMULATED TAXES, NUMBER OF PAYERS (thousands)

Description	EUROMOD				External				Ratio			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Property tax	550	550	550	550								
Income tax	18,122	18,529	16,184	15,430	18,160	18,922	0	0	100%	98%		
Common fiscal territory	16,802	17,185	14,960	14,230	17,105	17,841	0	0	98%	96%		
Basque country	1,022	1,041	952	937	1,055	1,081	0	0	97%	96%		
Navarra	298	303	271	263	0	0	0	0				
Common fiscal territory												
Taxable income	16,744	17,123	14,901	14,166	17,095	17,841	0	0	98%	96%		
Work	15,239	15,596	13,742	13,097	15,380	16,097	0	0	99%	97%		
Self-employment	1,715	1,744	1,414	1,318	3,068	3,099	0	0	56%	56%		
Capital	2,781	2,829	2,474	2,454	14,920	15,563	0	0	19%	18%		
Property income	834	841	716	721	1,336	1,394	0	0	62%	60%		
Property gain					1,845	2,348	0	0				

(Keep.)

(Continuation.)

Description	EUROMOD				External				Ratio			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Personal-family tax allowance	16,802	17,185	14,960	14,230	16,985	17,723	0	0	99%	97%		
Personal tax allowance	16,802	17,185	14,960	14,230								
Child tax allowance	6,453	6,551	5,756	5,479								
Dependent parent tax allowance	648	656	534	488								
Employee tax allowance	16,663	17,057	14,951	14,230	15,350	16,066	0	0	109%	106%		
Tax base	16,802	17,185	14,960	14,230	13,919	14,875	0	0	121%	116%		
Income tax before tax credits	16,802	17,185	14,960	14,230	17,105	17,841	0	0	98%	96%		
Tax credits												
Mortgage tax credit	0	0	0	0	5,681	6,104	0	0	0%	0%		
Refundable child tax credit	829	829	829	829	611	679	0	0	136%	122%		
Main tax credit	0	0	14,960	14,230								
Other tax credits	0	0	0	12,451								
Income tax	16,802	17,185	14,960	14,230	17,105	17,841	0	0	98%	96%		

Notes: * from 2007 personal and family tax allowances are applied as tax credits (see Main tax credit), nevertheless one is still able to calculate the amount as a tax allowance as well and this is the figure presented in here.

Sources: EUROMOD simulation results and official statistics from Table 11.

Table 38. 2005-2008 SIMULATION VALIDATION: SIMULATED TAXES, AVERAGE CONTRIBUTION (euro per year)

Description	EUROMOD				External				Ratio			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Property tax	755	782	803	836								
Income tax	2,573	2,689	3,092	3,142	3,249	3,571			79%	75%		
Common fiscal territory	2,546	2,661	3,069	3,126	3,040	3,451	0	0	84%	77%		
Basque country	2,770	2,902	3,194	3,150								
Navarra	3,364	3,517	3,992	4,032								
Common fiscal territory												
Taxable income	18,465	18,918	20,959	22,489	20,325	21,391	0	0	91%	88%		
Work	18,089	18,526	20,500	21,947	18,921	19,773	0	0	96%	94%		
Self-employment	18,264	18,758	21,307	22,978	9,324	9,856	0	0	196%	190%		
Capital	1,174	1,208	1,150	1,213	863	1,040	0	0	136%	116%		
Property income	4,091	4,226	4,461	4,622	5,250	5,412	0	0	78%	78%		
Property gain					13,281	17,876	0	0				
Personal-family tax allowance	4,865	4,866	6,054	6,152	4,850	4,789	0	0	100%	102%		
Personal tax allowance	4,157	4,162	5,139	5,250								
Child tax allowance	1,707	1,711	2,237	2,207								
Dependent parent tax allowance	1,374	1,369	1,510	1,530								
Employee tax allowance	2,752	2,750	2,893	2,849	2,629	2,608	0	0	105%	105%		
Tax base	11,020	11,471	17,664	19,292	15,283	16,206	0	0	72%	71%		
Income tax before tax credits	2,559	2,674	4,533	4,974	3,281	3,588	0	0	78%	75%		
Tax credits												
Mortgage tax credit			1,449	1,834	1,003	1,034	0	0				
Refundable child tax credit	1,223	1,225	1,227	1,230	914	901	0	0	134%	136%		
Main tax credit			1,449	1,471								
Other tax credits				400								
Income tax	2,546	2,661	3,069	3,126	3,040	3,451	0	0	84%	77%		

Notes: * from 2007 personal and family tax allowances are applied as tax credits (see Main tax credit), nevertheless one is still able to calculate the amount as a tax allowance as well and this is the figure presented in here.

Sources: EUROMOD simulation results and official statistics from Table 12.

4.2. Income Distribution

4.2.1. Income distribution

Table 40 provides the following indicators of income distribution: mean and median equivalised income⁵⁹ by gender, income quintile ratio and Gini coefficient. Results are presented for three different “sources”: own calculations using EUROMOD baseline output, own calculations based on the original EU-SILC microdata, and statistics published by Eurostat based on the EU-SILC data.

According to results, the equivalised disposable income in EUROMOD is slightly larger than in the original EU-SILC data. Three reasons may be lie beneath this difference: a) inclusion of different sources in the definition of household disposable income (see Table 39 below), b) changes in the sample and in the weighting of observations, and c) changes in the amounts of some income sources (particularly taxes and benefits) due to its simulation in EUROMOD.

Table 39. COMPONENTS OF DISPOSABLE INCOME IN EUROMOD AND EU-SILC

	EUROMOD ils_dispy	EU-SILC HY020
Employee cash or near cash income	+	+
Employer's social insurance contribution	.	.
Contributions to individual private pension plans	-	.
Cash benefits or losses from self-employment	+	+
Pension from individual private plans	+	.
<i>Unemployment benefits</i>	+	+
<i>Old-age benefits</i>	+	+
<i>Survivor' benefits</i>	+	+
Sickness benefits	+	+
Disability benefits	+	+
Education-related allowances	+	+
Income from rental of a property or land	+	+
<i>Family/children related allowances</i>	+	+
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	-	-
<i>Regular inter-household cash transfer paid</i>	-	-
<i>Tax on income and social contributions **</i>	-	-
<i>Repayments/receipts for tax adjustment **</i>	+	.

Notes:

“+” indicates that component is added to disposable income.

“-” indicates that component is subtracted from disposable income.

“.” indicates that component is not included. Text in red highlights conceptual differences between EUROMOD and EU-SILC's disposable income definitions. Text in italics denotes components that are partially or fully simulated in EUROMOD.

** EUROMOD's simulated tax on income component includes tax adjustment, EU-SILC's doesn't.

Sources: Eurostat (2009) Description of SILC User Database Variables: Cross-sectional and Longitudinal.

⁵⁹ Using the OECD modified equivalence scale.

Table 40. BASELINE VALIDATION: INCOME DISTRIBUTION

Description	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio
Mean income (equivalised)					
Total population	12,476	12,609	99%	12,176	102%
Males	12,733	12,864	99%	12,415	103%
Females	12,227	12,361	99%	11,943	102%
Mean income (equivalised)					
Total population	11,168	11,086	101%	10,600	105%
Males	11,481	11,400	101%	10,910	105%
Females	10,866	10,769	101%	10,322	105%
Income quintile ratio (S80/S20)	4.996	5.581	90%	5.500	91%
Gini Coefficient	0.300	0.320	94%	0.318	94%

Sources: EUROMOD results based on input data, own calculations using EU-SILC 2006 and official statistics from Eurostat's website.

http://epp.eurostat.ec.europa.eu/portal/page/portal/income_social_inclusion_living_conditions/data/database.

Validation of 2005-2008 simulations: income distribution

Table 41 shows that EUROMOD slightly underestimates the increase in disposable income. As a result, while for 2005 the EUROMOD mean and median disposable incomes are a little higher than in the external statistics, for 2008 these are somewhat smaller.

As for income inequality, similarly to the external statistics, EUROMOD results suggest a small reduction in the amount of the Gini coefficient and the income quintile ratio.

Table 41. 2005-2008 SIMULATION VALIDATION: INCOME DISTRIBUTION

Description	EUROMOD				Extermañ				Ratio			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Mean income (equivalised)												
Total population	12,474	12,888	13,419	14,217	12,176	12,926	13,655	14,583	102%	100%	98%	97%
Males	12,731	13,152	13,688	14,507	12,415	13,184	13,930	14,849	103%	100%	98%	98%
Females	12,224	12,631	13,156	13,934	11,943	12,676	13,385	14,323	102%	100%	98%	97%
Median income (equivalised)												
Total population	11,167	11,530	12,013	12,754	10,600	11,480	12,038	12,950	105%	100%	100%	98%
Males	11,481	11,848	12,316	13,075	10,910	11,767	12,377	13,259	105%	101%	100%	99%
Females	10,864	11,237	11,713	12,405	10,322	11,180	11,733	12,644	105%	101%	100%	98%
Income quintile ratio (S80/S20)	4.996	4.957	4.936	4.923	5.500	5.300	5.300	5.400	91%	94%	93%	91%
Gini Coefficient	0.300	0.299	0.299	0.298	0.318	0.312	0.313	0.313	94%	96%	95%	95%

Sources: EUROMOD simulation results and official statistics from Eurostat's website

http://epp.eurostat.ec.europa.eu/portal/page/portal/income_social_inclusion_living_conditions/data/database.

4.2.2. At risk of poverty rates

Table 42 provides at risk of poverty rates using poverty lines based on 40, 50, 60 and 70% of the median equivalised disposable income⁶⁰. As with income inequality indicators, results are presented for three different "sources": own calculations using EUROMOD baseline output, own calculations based on the original EU-SILC microdata, and statistics published by Eurostat based on the EU-SILC data.

According to results, at risk poverty rates are lower in EUROMOD, particularly when using lower poverty lines (40 and 50% of the median) and among males.

Table 43 shows the risk of poverty rates (using 60% of the median equivalised disposable income as poverty line) by age groups. In line with previous results, at risk of poverty rates calculated using EUROMOD's disposable income are lower than using the original data from the EU-SILC. Rates are particularly lower for working age adults (i.e., 18 to 64 years old).

⁶⁰ Using the OECD modified equivalence scale.

Table 42. BASELINE VALIDATION: AT RISK OF POVERTY RATES AT DIFFERENT POVERTY LINES

Description	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio
40% of median equivalised income					
Total population	7.2	8.4	86%	7.8	93%
Males	6.9	8.1	86%	7.8	89%
Females	7.5	8.7	86%	7.8	96%
Poverty line	4,467	4,435	101%	4,240	105%
50% of median equivalised income					
Total population	12.0	13.7	88%	12.9	93%
Males	11.5	13.1	88%	12.5	92%
Females	12.6	14.2	88%	13.3	94%
Poverty line	5,584	5,543	101%	5,300	105%
60% of median equivalised income					
Total population	19.4	20.4	95%	19.7	98%
Males	18.0	19.2	94%	18.5	97%
Females	20.8	21.6	96%	20.8	100%
Poverty line	6,700	6,652	101%	6,360	105%
70% of median equivalised income					
Total population	26.2	27.7	95%	27.3	96%
Males	24.5	26.1	94%	25.7	95%
Females	27.8	29.2	95%	28.9	96%
Poverty line	7,817	7,760	101%	7,420	105%

Sources: EUROMOD results based on input data, own calculations using EU-SILC 2006 and official statistics from Eurostat's website.

http://epp.eurostat.ec.europa.eu/portal/page/portal/income_social_inclusion_living_conditions/data/database.

Table 43. BASELINE VALIDATION: AT RISK OF POVERTY RATES AT DIFFERENT AGE GROUPS

Description	EUROMOD	EU-SILC	Ratio	Ext. Source	Ratio
Population					
0-17	23.4	24.0	98%	24.2	97%
18-24	17.2	18.7	92%	16.6	103%
25-49	14.9	16.4	91%	15.7	95%
50-64	16.4	17.9	92%	16.5	100%
65-	30.4	29.5	103%	29.3	104%
Total	19.4	20.4	95%	19.7	98%

Sources: EUROMOD results based on input data, own calculations using EU-SILC 2006 and official statistics from Eurostat's website

http://epp.eurostat.ec.europa.eu/portal/page/portal/income_social_inclusion_living_conditions/data/database.

Validation of 2005-2008 simulations: at risk of poverty rates.

External statistics in Table 44 suggest that at risk of poverty rates have fallen between 2005 and 2008, particularly when measured using 40% of the median equivalised income as poverty line. This trend is not captured by EUROMOD results as at risk of poverty rates remain constant in the simulation of these years.

Using 60% of the median equivalised income as poverty line, external statistics in Table 45 indicate a considerable increase in the at risk of poverty rate of those aged 18 to 24 and a reduction in those aged 65 or more. Again, such trend is not captured by EUROMOD, as the rates of both groups are kept relatively constant.

Table 44. 2005-2008 SIMULATION VALIDATION: AT RISK OF POVERTY RATES AT DIFFERENT POVERTY LINES

Description	EUROMOD				External				Ratio			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
40% of median equivalised income												
Total population	7.2	7.2	7.2	7.2	7.8	7.6	7.3	6.8	93%	95%	99%	105%
Males	6.9	7.0	7.0	6.9	7.8	7.3	7.0	6.7	89%	95%	100%	103%
Females	7.5	7.4	7.5	7.4	7.8	8.0	7.6	6.9	96%	93%	99%	107%
Poverty line	4,467	4,612	4,805	5,102	4,240	4,592	4,815	5,180	105%	100%	100%	98%
50% of median equivalised income												
Total population	12.0	11.9	11.9	12.1	12.9	13.1	12.9	12.7	93%	91%	93%	95%
Males	11.5	11.5	11.4	11.6	12.5	12.4	12.1	12.1	92%	92%	94%	95%
Females	12.6	12.4	12.4	12.6	13.3	13.8	13.6	13.2	94%	90%	91%	95%
Poverty line	5,584	5,765	6,007	6,377	5,300	5,740	6,019	6,475	105%	100%	100%	98%
60% of median equivalised income												
Total population	19.4	19.3	19.2	19.3	19.7	19.9	19.7	19.6	98%	97%	97%	99%
Males	18.0	18.0	17.8	17.9	18.5	18.5	18.5	18.3	97%	97%	96%	98%
Females	20.8	20.7	20.5	20.7	20.8	21.3	20.9	21.0	100%	97%	98%	99%
Poverty line	6,700	6,918	7,208	7,653	6,360	6,888	7,223	7,770	105%	100%	100%	98%
70% of median equivalised income												
Total population	26.2	26.3	26.1	26.3	27.3	27.7	27.6	26.8	96%	95%	94%	98%
Males	24.5	24.6	24.4	24.7	25.7	26.0	26.1	25.1	95%	95%	94%	98%
Females	27.8	27.9	27.7	27.9	28.9	29.3	29.1	28.5	96%	95%	95%	98%
Poverty line	7,817	8,071	8,409	8,928	7,420	8,036	8,427	9,065	105%	100%	100%	98%

Sources: EUROMOD simulation results and official statistics from Eurostat's website http://epp.eurostat.ec.europa.eu/portal/page/portal/income_social_inclusion_living_conditions/data/database.

Table 45. 2005-2008 SIMULATION VALIDATION: AT RISK OF POVERTY RATES AT DIFFERENT AGE GROUPS

Description	EUROMOD				External				Ratio			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Population												
0-17	23.4	23.3	23.2	23.2	24.2	24.5	24.3	24.4	97%	95%	96%	95%
18-24	17.2	17.2	17.0	17.2	16.6	17.3	17.1	20.3	103%	99%	99%	85%
25-49	14.9	14.9	14.7	14.8	15.7	15.6	16.2	15.5	95%	95%	91%	95%
50-64	16.4	16.4	16.3	16.4	16.5	16.4	16.7	16.8	100%	100%	98%	98%
65-	30.4	30.2	29.9	30.6	29.3	30.7	28.2	27.4	104%	98%	106%	112%
Total	19.4	19.3	19.2	19.3	19.7	19.9	19.7	19.6	98%	97%	97%	99%

Sources: EUROMOD simulation results and official statistics from Eurostat's website http://epp.eurostat.ec.europa.eu/portal/page/portal/income_social_inclusion_living_conditions/data/database.

4.3. Summary of "health warnings"

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

- The sample becomes relatively small when regions are considered. Since most regional policies are targeted at very specific (and in many cases rather small) population subgroups, EUROMOD results are not statistically significant for such policies. Furthermore, validating regional policies is difficult given that information from regions is scarce. Care should be taken when aiming to interpret results for regional benefits of this kind.



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- There is a shortfall in people with higher incomes and self-employment income and investment or capital income. It is likely that one problem is a shortfall of high income people with these sources of income or an under-recording of these sources for high income people. Further, underreporting of self-employment and investment income is generally thought of being a source of differences between survey data and tax agency data in Spain.
 - By default, the eligibility of the following policies is partially simulated (i.e., conditional on being reported in the data):
 - Unemployment insurance (bunct).
 - Unemployment assistance (bunnc).
 - Non contributory old-age pension benefit (poanc).
 - Old-age pension complement (poacm).
 - Widow/er pension complement (psuwcm).
 - The number of effective recipients of Regional Minimum Income Benefits is much lower than the number of potential recipients. As a result, EUROMOD simulations predict a much larger number of recipients than reported in official statistics. For this reason, by default, EUROMOD standard income definitions (including disposable income) ignore the simulated amount of Regional Minimum Income Benefits (variable bsarg_s) and use the data amount (variable bsa) instead.

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- PANIAGUA, M. and MÉNDEZ, J. (2008): How to achieve the final net income by components in the Spanish, paper presented at Tax-benefit Microsimulation in the Enlarged Europe: Results from the I-CUE Project and Perspectives for the Future, 3-4 of April, Vienna, Austria. <http://www.euro.centre.org/conferences/icue/files/Paniagua.pdf>.

Sources for tax-benefit descriptions/rules

The sources for tax descriptions have been the different laws that were applicable on 30th June each calendar year. In particular for the Personal Income tax the applicable laws are:

- 2005 and 2006: Real Decreto Legislativo 3/2004, de 5 de marzo, por el que se aprueba el texto refundido de la Ley del Impuesto sobre la Renta de las Personas Físicas.
- 2007 and 2008: Ley 35/2006 de reforma del Impuesto sobre la Renta de las Personas Físicas, 28 de noviembre de 2006.
- Further, some of the tax information was obtained from the personal income tax guides of the Spanish Agencia Tributaria available at www.aeat.es.
- The sources of benefit descriptions come mainly from the information available at the Ministerio de Trabajo e Inmigración (www.mtin.es). In particular it was useful to use the Annual Labour guide (www.mtas.es/en/Guia/entrada.htm) that is partially available on line. Also the information in the *Guías de ayudas sociales para las familias* (2005-2009) was very useful for detailed information on family benefits edited by the Ministerio de Sanidad y Política Social (www.msps.es).
- The source for the description of social security contributions comes from the information in the publication edited in 2009: *Normas de cotización a la Seguridad Social*, Ministerio de Trabajo e Inmigración, Secretaría de Estado de la Seguridad Social (www.seg-social.es).

