

EUROMOD

COUNTRY REPORT



ITALY (IT)

2011-2015

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EUROMOD version G3.0



EUROMOD is a tax-benefit microsimulation model for the European Union (EU) that enables researchers and policy analysts to calculate, in a comparable manner, the effects of taxes and benefits on household incomes and work incentives for the population of each country and for the EU as a whole.

EUROMOD has been enlarged to cover 28 Member States and is updated to recent policy systems using data from the European Union Statistics on Income and Living Conditions (EU-SILC) as the input database, supported by DG-EMPL of the European Commission.

This report documents the work done in one annual update for Italy. This work was carried out by the EUROMOD core developer team, based mainly in ISER at the University of Essex, in collaboration with a national team.

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The results presented in this report are derived using EUROMOD version G3.0. EUROMOD is continually being improved and the results presented here may not match those that would be obtained with later versions of EUROMOD.

For more information, see: <https://www.euromod.ac.uk>

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The information contained in this publication does not necessarily reflect the position or opinion of the European Commission.

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INTRODUCTION

This country report gives an overview of the Italian country component of EUROMOD. The report presents the basic information on the Italian tax-benefit system valid in 2011-15 (as of 30th June in corresponding year), it explains which taxes and benefits are simulated in EUROMOD, together with the key aspects of implementation, and how well the model represents actual income distribution and monetary aggregates.

The current Italian country model uses the Italian Survey of Income and Living conditions 2012 (IT-SILC), which is a more detailed national version of the SILC survey from where the EU-SILC variables are derived.

The report adds to and builds on the five earlier reports:

- i. Ceriani and Gigliarano (2010), which covered policy years 2005-2008 based on the Italian Survey of Income and Living conditions 2006
- ii. Ceriani and Gigliarano (2011), which covered policy years 2006-2009 based on the Italian Survey of Income and Living conditions 2007
- iii. Ceriani, Figari and Fiorio (2012), which covered policy years 2007-2010 based on the Italian Survey of Income and Living conditions 2008
- iv. Ceriani, Figari and Fiorio (2013), which covered policy years 2009-2012 based on the Italian Survey of Income and Living conditions 2010
- v. Ceriani, Figari and Fiorio (2014), which covered policy years 2009-2013 based on the Italian Survey of Income and Living conditions 2010

The current report provides information on the new dataset, updates information on policy rules as well as validation results. Major changes have been also made in the structure of the report.

1. BASIC INFORMATION

1.1 Basic information about the tax-benefit system

- The tax-benefit system is a national system, with some differences among Regions and Municipalities due to some local autonomy, mainly related to the *Personal Income Regional Additional Tax* and the complex system of *Local Property Taxes*.
- Starting from the 7th April 2011, the public policy calendar has changed, according to the European Semester approved by Ecofin. Starting from then, the tax system is mainly modified by the *Stability Law* (Disegno di Legge di Stabilita') by the 15th of October, and by the *Associated Government Bills* (Disegni di Legge Collegati) approved by the 31st of January each year.
- The State pension age in 2009 was 58 both for men and women. Starting for the 1st January 2012 the rules changed substantially. Male employees of the private sector, self-employed and temporary workers ("para-subordinati"): 66 years. Male and female civil servants: 66 years; Female employees of the private sector: 62 years; Female self-employed and temporary workers ("para-subordinate"): 63 years and 6 months. The retirement age is subject to a gradual increment up to 66 years and 7 months for both men and women in 2018, with further adjustment depending on the evolution of life expectancies.
- Starting from the Academic year 2010/2011, mandatory education requires achieving upper secondary degree or a vocational degree of at least three years duration within age 18. A 15 years old child can start working and completing her mandatory education by a year of apprenticeship.
- A child is defined *dependent child* if she is a relative or a relative-in-law, and has an income of less than 2.840,51 euro, regardless of the age and cohabitation status.

- The income tax system is individual.
- Incomes from capital gains and return on capital are mainly subject to separate taxation
- By the 31st July each year taxpayers must fill their *Personal Income Tax* return with respect to incomes received the previous calendar year.
- The tax system does not provides any indexation. Thresholds for means-tested benefits and contributions are yearly updated by the National Statistical Office taking into account the consumer price index for working class households.
- The means-tested benefit system (mainly at local level) assesses entitlement according to benefit unit income and, in some cases, according to a combination of income and wealth (*ISEE – Indicatore della Situazione Economica Equivalente, reformed since January 2015*). The benefit unit is the family, made of the couple, or the lone parent plus all the dependent family members.

1.2 Social Benefits

Seeking for clearly and completeness, which is a challenging task in a complex and fragmented system as the Italian one, we describe the bundle of social benefits using the following classification criteria:

- **Social Insurance**
 - *Benefits related to the end of the working activity*
 - *Benefits related to the temporary suspension of the working activity*
 - *Benefits related to the reduction in working ability, family and social allowances*
 - *Other benefits*
- **Social Assistance**
 - *Family Support*
 - *Pro-poor allowances*
 - *Benefits related to the reduction in working ability*
 - *Other benefits*

We adopted the traditional distinction between Social Insurance and Social Assistance based on the financing means: the first one is funded by workers' contributions and the benefits are therefore linked to the individuals salary history; the second one, instead, is inspired by a condition of need of the recipient, and the benefit is disconnected with any contribution or working history.

Here we are not concerned about the fund's source, which can be either the National Institute of Social Security (*INPS*), the State or the Local Institutions (Regions, Provinces and Municipalities).

1.2.1 Social Insurance: Benefits related to the end of the working activity

Old-Age Pension (*Pensioni di Vecchiaia – poa*)

The old-age pension is related to a *pay-as-you-go* social security program. The old-age pension is obtained when three conditions are contemporarily fulfilled: (i) age; (ii) minimum contribution; (iii) end of working activity (this last condition does not hold for self-employed individuals). The system has been radically changed in 1995 from a retributive to a contributive one. Under the contributive system, the pension is linked to the individual contribution righted up by applying a rate related to the gross domestic product's growth.

The retirement age will be gradually increased from 2012 onwards, according to the increase in life expectancy as provided for under art. 12 of the Legislative Decree of 31 May 2010 No. 78. converted into Law No. 122/2010.

Invalidity Pension (*Pensioni di Invalidità – phl*)

The invalidity pension is given to employees or self-employed individuals suffering from some physical or mental disease which leads to an inability to work. If the disease reduces the ability to work by one third or more, the worker is entitled to receive the **invalidity benefit** (*assegno di invalidità*). The invalidity benefit is allowed for a period of three years and it can be renewed if the inability persists. After three extensions it is automatically renewed. If, instead, the working ability is totally cleared, the worker is entitled to receive the **inability pension** (*pensione di inabilità*).

Survivors' Pension (*Pensioni ai Superstiti – psu*)

The survivors' pension is the benefit due to eligible family members of a deceased insured worker or retired individual.

Eligible family members are:

- the spouse, also if separated or divorced but not re-married;
- dependent children (natural, adoptive, legitimate, in-law), who are minor, students and disable;
- dependent grandchildren;
- 65 years old parents, if there are no eligible spouse, dependent children or grandchildren;
- unmarried brothers and sisters if there are none of the above.

Quotes of pension differ among eligible members and the pension could be reduced over given amounts.

Unemployment benefit (*Indennità di disoccupazione – bunct02*)

In the Italian system we count five unemployment benefits:

- The **ordinary unemployment benefit** (*indennità di disoccupazione ordinaria*);
- The **unemployment benefit with minor requirements** (*indennità di disoccupazione con requisiti ridotti*);
- The **ordinary agricultural unemployment benefit** (*indennità di disoccupazione agricola ordinaria*);
- The **agricultural unemployment benefit with minor requirements** (*indennità di disoccupazione agricola con requisiti ridotti*);
- The **special benefit for agricultural and building unemployment** (*trattamenti speciali per disoccupazione agricola ed edilizia*)

The unemployment benefit is granted to insured employees who have been dismissed. The benefit is not granted to resigned employees, unless the resignation is due to *good cause* as, for example, missed wage payment, sexual harrasment, mobbing. The benefit is also given to employees who have been suspended for transitory reasons and causes not due to employers or employees behaviour.

Eligible individuals are employees who have paid (i) contribution against unemployment for at least two years or (ii) 52 weeks of contribution in the two-years period before the date of work suspension.

The benefit amount and the duration of the treatment is different according to the age of the employee. For a detailed description of the ordinary unemployment benefit, we remand to section 2.

The benefit is no more due when the employee (i) has received the benefit for all the allowed days; (ii) starts a new employment; (iii) retires; (iv) refuses an employment proposal with a wage non less than the 20% of the previous one; (v) refuses to be enrolled in social activities; (vi) is ereased from the employment lists.

From 2013 the ordinary unemployment benefit has been replaced by ASPI (and mini-ASPI) which is relatively more generous in terms of coverage and adequacy.

Procedure for mobility and collective dismissals (*Mobilita' – bunct02*)

The procedure for mobility and collective dismissal is a benefit in favour of employees who (i) have already been granted of redundancy payment for all the allowed period; (ii) have been dismissed as a result of a firm policy of staff reduction or production transformation; (iii) have been dismissed for firm shutdown.

The difference between the procedure for mobility and collective dismissals and the redundancy payment is that the latter is an alternative to the employee dismissal, the former comes after the employee dismissal.

Eligible individuals are employees who: (i) have been hired with a long-term contract; (ii) have been enrolled in the mobility lists made out by the Regional Labour Office on the basis of troubled firms reports; (iii) have at least twelve months service in the same firm; (iv) have worked at least for six months in the same firm.

The duration of the allowance is different according to the age of the employee and the firm geographical position.

In general, the benefit cannot be granted for more than the employee service period.

The benefit amount is proportional to the redundancy payment that the employee received (or would be entitled to receive) in the period right before the dismissal.

1.2.2 Social Insurance: Benefits related to the temporary suspension of the working activity

Redundancy payment (*Cassa Integrazione Guadagni – bunct01*)

The Redundancy payment is a benefit in favour of troubled firms which provides to employees an income substitute for wage income.

There are types of redundancy payments:

- The **ordinary redundancy payment** (*cassa integrazione ordinaria*)
- The **extra-ordinary redundancy payment** (*cassa integrazione straordinaria*)
- The **building redundancy payment** (*cassa integrazione edilizia*)

Eligible individuals are blue collars, white collars and executives (apprentices excluded) whenever working activity is suspended or reduced because of (i) transitory reasons and causes not due to employers or employees behaviour; (ii) temporary market stagnation.

The benefit amount is the 80% of the gross wage, subject to upper limits, for the lost working hours. For the majority of firms the redundancy payment is granted for a maximum period of 13 weeks to 12 months (according to possible extensions).

Salary supplement for agriculture workers (*Integrazioni salariali a favore dei lavoratori agricoli – Included in bunct01*)

It is an instrument for supporting firms when it is not possible to carry on working and for pledging some income to the employees. Eligible individuals are employees (blue collars, white collars and executives) working full time in farms for at least 180 days per year.

The benefit amount is equal to the 80% of the wage received in the month before the working suspension, subject to upper limits, and it is granted for at most 90 days. The benefit is directly paid by INPS to the employees.

Marriage leave (*Assegno per congedo matrimoniale – Included in yem*)

It is a benefit granted for the wedding of an employee. Entitled individuals are: (i) employed individuals (not white collars) working in manufacture and industrial sector or a cooperative society (also workers at home and apprentices) simple soldiers and non-commissioned officers who have been working at the wedding day from at least one week; (ii) workers and seamen who resigned to get married; (iii) unemployed workers and seamen who at the wedding day have worked at least 15 days in the previous 90; (iv) seamen at military service who have been enrolled for 15 days in the 90 before the recall to arms or the end of the draft. Both spouses are granted if one is entitled. The amount is given without income test and it is equal to seven salary

days (eight for seamen). Employers, on behalf of INPS, pay out the benefit at the beginning of the leave period. For unemployed individuals or called to arms it is paid by INPS.

1.2.3 Social Insurance: Benefits related to the reduction in working ability, family and social allowances¹

Sickness leave (*Indennità di Malattia – Included in yem*)

The sickness leave is an allowance substitute for the wage which is granted starting for the fourth sickness day of the worker and for no more than 180 days each year. Eligible to receive the benefit are private sector blue-collars, white collars of tertiary and services sectors. Moreover, it is supplied also to unemployed and suspended individuals within 60 days from the end of the working activity (except for short-term workers). The benefit is granted without income test and it is equal to the 50% of the average daily wage for the first 20 days of the sickness period, and to the 66.66% for the subsequent days of sickness related to the same disease or relapse.

Inability Pension (*Pensione di Inabilita' – phl*)

It is a pension owed by employees or self-employed individuals suffering from some physical or mental disease which leads to an inability to work. Entitled individuals have a contributory history of at least five years, three of which paid in the five years before the pension request. Moreover, to be entitled, an individual cannot work, been enrolled in a professional register or in the lists of farmers or self-employed workers.

¹ In addition to the benefits listed in the section.

Special Sickness allowances (*Indennità e assegni per malattia speciale*). It is an allowance substitute for the wage granted to employees and family members suffering of tuberculosis. The cost is beared by INPS, while the national health system covers the sanitary assistance. Eligible individuals have at least a year of contribution, then other conditions apply according to the type of allowance. The **daily allowance** (€12 or €6 for the family members) is due to the worker who does not receive the full wage during the hospital or outpatient treatments. The **post-sanatorium allowance** (€20 or €10 for the family members) is due to recovered or stabilized individuals after an hospitalization of no less than 60 days, or after an outpatient treatment which lasted at least 60 days and the worker did not work for 60 days, or after a treatment both at hospital and outpatient of at least 60 days. The **treatment or support allowance** (€ 80.67 in 2009) is supplied for two (renewable) years to workers affected by tuberculosis whose earning capacity is reduced by more than one third and who do not receive a continuative full-time wage. The **Christmas allowance** is given to individuals who have benefited in the month of December of at least one day of tuberculosis benefit, and the amount equals 30 days of the most favorable benefit received in December.

Death Allowance (*Rendita per morte*). If the accident at work causes the employee death, the family members are entitled to receive an allowance equal to the 100% of previous year wage, divided as following: 50% to the spouse and 20% to each child (in any case it cannot exceed the 100% of the wage).

Hours of Rest (*Riposi orari, ex allattamento*). Within the first year of age, the mother (also the adoptive mother) is entitled to two hours of rest each day if the working hours are at least six, one if the working hours are less than six. In case of multiple delivery or adoption, the hours of rest are doubled. While, in case the working mother benefits of a childcare supplied by the employee in the working place or close to it, the permit is halved. The hours of rest are in every respect considered as working hours. These hours can be granted also to the working father if it is the only guardian, in alternative to the mother, if the mother is not employed, or if the mother is dead or seriously injured.

Daily permits for blood and spinal cord donors (*Permessi giornalieri per donatori di sangue e midollo*). Blood and spinal cord donors are entitled to receive the full wage for the day they abstain from work to donate. INPS refunds the employers.

Daily permits for mountain and spelaeological rescuers (*Permessi giornalieri per i volontari del soccorso alpino e speleologico*). Employees voluntary mountain and speleological rescuers are entitled to receive the full wage for the day the leave work. Self-employed individuals are entitled to receive 1/22 or 1/26 of the average monthly earning in the industrial sector, fixed every year by ISTAT.

Inability Allowances for Civil Servants (*phl*)

Civil servants can access to different inability allowances or pensions. In the following we briefly summarize the most important ones.

- **Absolute and Permanent Inability to the assignment** (*Pensione per inabilità assoluta e permanente alla mansione*). The inability to the assignment is limited to the type of task the worker is assigned to, and it gives right to receive the pension only in the case the employee cannot be assigned to a different task at the same working status. Entitled individual (i) have been civil servants for at least 15 years (20 years if enrolled in Local Institutions or Health Institutions), (ii) have been recognized unable to the assignment by a special Committee and (iii) have been dismissed because of the disability. The benefit amount is computed with the same rules as the ordinary old-age pension.
- **Absolute and Permanent Inability to profitable activity** (*Pensione per inabilità assoluta e permanente a proficuo lavoro*) It is granted to workers who have been employed for more than 15 years who suffered by a disability which is not completely disabling, but enough disabling to prevent individuals from being uninterrupted profitably enrolled.
- **Absolute and Permanent Inability to work** (*Pensione per inabilità assoluta e permanente ad attivita' lavorativa*) After the clinic recovery, INAIL (the National Institute for the Insurance against accidents at work) checks whether the worker has been permanently injured and to what extent. If the inability is greater than the 11%, the worker is entitled to receive an allowance proportional to the degree of disability and his wage in the year before the accident. In case of a worsening in the conditions, the worker can ask for a revision of the allowance. The allowance is computed by summing up two components: a workers' compensation for the biological disability and an indemnity for the economic consequences of the accident. Entitled employees have at least five years of contribution.
- **Direct Disability Pension** (*Pensione Diretta Privilegiata*) The direct disability pension is an allowance granted to employee who have been disabled because of the working activity. The benefit amount is proportional to the infirmity extent and ranges from 8/10 to 1/3 of the pensionable wage. Slightly different rates apply to local institutions' servants.

Family Allowance (*assegni familiari – bfacpwc_s, bfacpxc_s and bfalp_s*)

The Family Allowance is targeted to families of employees and pensioners with family incomes below determined thresholds. The thresholds and the amounts of the benefit are different according to the household composition and number of members, and are fixed every year by Law. This benefit is simulated and we refer to section 2.3.1 for a detailed description.

Maternity Allowances (*Included in yem, yse or bmase and bmals*)

Italian law provides two maternity allowances: the **mandatory maternity leave** (*Indennità per astensione obbligatoria*) and the **parental leave** (*Indennità per astensione facoltativa o congedo parentale*). Both allowances are subject to recent reforms (2015) not covered in this report.

Moreover, there are a **State** and a **Municipalities dependency benefits** (*Assegno di maternità dello Stato e dei comuni*).

- **Mandatory Maternity Leave Allowance** (*Indennità per astensione obbligatoria – included in yem or yse*)

It is a substitute for the wage and it lasts at most five months, divided in two periods: two months before and three months after the delivery. If the health status of the worker is fine and the working conditions do not harm the future mother and the baby, the period of mandatory leave before the delivery can be shortened to one month, and therefore the period after becomes four months.

For the self-employed mothers, there is no mandatory leave from work.

Entitled to receive the allowance are employee mothers, self-employed mothers enrolled in the lists of the craftsmen, wholesale traders, farmers, who paid the corresponding social contributions, and some temporary workers depending on their contract.

For the employees the allowance is the 80% of the average daily wage. For the self-employed mothers, it is the 80% of the *conventional* daily remuneration, which are fixed each year by law.

- **Parental Leave** (*Indennità per astensione facoltativa o congedo parentale – included in yem or yse*)

Each parent can leave from work until the child is eight years old. The leave cannot exceed jointly for the two parents ten (to eleven) months. The benefit applies also to parents of an adopted child, with different age limits: during the first three years after the adoption, until the child is twelve years old, for a maximum of six (seven for the father) months or ten (to eleven) months if the leave is cumulated between the two parents. If the child enters in the family when she is 12, the age limit is extended to 15.

Entitled to request the parental leave are:

- (i) Employed mothers (unless they are unemployed or suspended, employed in domestic and familiar services or working at home) who can leave up to a continuative or fragmented period of up to six months until the child is eight years old;
- (ii) Employed fathers
- (iii) Lonely parents up to ten months
- (iv) Self-employed mothers who can leave for three months within the first year of the child life.

The allowance is granted without income test for at most six months cumulated between the parents within the first three years of the child.

If the parental leave exceeds six months, from age three to eight, the allowance is means tested: the income of the applicant parent cannot be higher than 2.5 times the minimum pension fixed by law in the year of the request.

The parental leave allowance is the 30% of the average daily wage.

- **State Maternity Benefit** (*Assegno di Maternità concesso dallo Stato*)

It is a benefit granted to mothers with Italian citizenship, EU citizenship or extra-EU citizenship and a long-term residence permit, for each natural or adopted child.

Eligible for the allowance are: (i) working mothers who have at least three months of contribution in the last 18 to 9 months before the delivery (or the adoption); (ii) unemployed mothers if the period between the loss of the social insurance and the delivery or adoption) is shorter than nine months; (iii) mothers who voluntarily resigned during pregnancy and have at least three months of contribution in the last 18 to 9 months before the delivery (or the adoption); (iv) mothers who have had some allowances from INPS (for example unemployment benefit or sickness benefit), provided not much time has passed (and in any case no more than nine months).

The State allowance is given to eligible mothers without income test. The Benefit Amount was 1.946.88 in 2011 and 1.999.45 in 2012 (INPS. circ. 69/2011, 59/2012).

- **Municipalities Maternity Benefit** (*Assegno di Maternità concesso dai Comuni*)

Maternity allowance of the municipality of residence for each child born from or adopted by a woman who is a citizen of an EU or extra-EU country (with a residence permit). See section 2.3.2 for details.

Family leave for severe disability (*Congedo retribuito per assistenza a familiari in condizione di handicap grave – Included in yem*)

It is a benefit granted to (in order of eligibility) employed parents, siblings, children, spouse of an individual affected by severe disability. The benefit is equal to the last wage and comprehends the figurative social security contribution. It is granted for at most two years (consecutive or apportionable) and until an annual maximum which is linked to the average growth rate of the consumer price index for working-class households, elaborated by the National Statistical Office (*ISTAT*). Starting from 2009, the benefit is also granted to the son or daughter living with the severe disabled parent.

1.2.4 Social Insurance: Other Benefits

Compensation benefit (*Pensioni Indennitarie – phl*)

The compensation benefit is given to workers disabled by an industrial accident.

War Pension (*Pensione di Guerra – phl*)

The benefit is given by the Ministry of Economy and Finance to disabled citizens or to eligible family members of a deceased citizen because of war events.

1.2.5 Social Assistance: Family Support

Family Allowance for families with at least three children (*Assegno di sostegno per nuclei familiari con almeno tre figli minori – bchot*)

The Support Benefit for families with at least three children is paid off by the municipalities. The means testing criterion to be entitled of the benefit is based on the Indicator of Economic Situation (*ISE*) which is defined both on income and wealth components.

Scholarships and Free Textbooks Supplies (*Fondi destinati all'erogazione di borse di studio in favore degli alunni nell'adempimento dell'obbligo scolastico e nella successiva frequenza della scuola secondaria e fornitura, anche in comodato, dei libri di testo in favore degli alunni della scuola secondaria superiore – bed*)

The Ministry of Public Education gives each year funds to the regional scholastic offices to finance scholarships and free textbooks supplies.

For the scholarships, eligible students must be enrolled in primary or secondary State or equally recognized institutions and live in families with poor economic status (the threshold is fixed by each region).

As for the free textbooks supplies, eligible students are enrolled in lower secondary schools (grade 6 to 8) and higher secondary schools. Moreover, they live in families whose income is below the threshold fixed each year by law (15,493 euro in 2009/2010, *Ministry of Education, D.D. 11.06. 2009*).

Note that textbooks for primary education are free of charge for everybody.

1.2.6 Social Assistance: Pro-poor Allowances

Social Pensions and Social Allowances to individuals older than 65 (*Assegni sociali a ultra sessantacinquenni – poamt*)

The social pension has been substituted in 1996 by the Social Allowance to individuals older than 65. It is a benefit granted to poor individuals older than 65 years without any income source or an income less than the social allowance. Eligible individuals are Italian resident citizens, San Marino residents, political refugees, EU citizens resident in Italy and extra-EU citizens with long-term residence permit. The monthly amount is related to the income level and

the family status of the entitled individual and it is index-linked to the minimum pensions granted by INPS. We refer to section 2.3.4 for a more detailed description.

Minimum Insertion Income (*Reddito Minimo di Inserimento – bsa00*)

The Minimum Insertion Income was introduced in 1999 as an experimental policy to tackle poverty and social exclusion. The policy was originally limited to 39 municipalities in the two-years period 1999-2000, and subsequently extended for the period 2001-2002 to 267 new local administration, for a total of 306 municipalities. For the second period, the Ministry of Labour and Social Policies has allocated €180,759,914.68 in 2001 and €222,076,466.61 in 2002. These funds had to be originally used within the end of 2004, but this deadline has been postponed first to the 30th of April 2006 and finally to the 30th of June 2007, to give the possibility to the municipalities still having some money to use it.

Eligible individuals either do not have any income or have an income below the fixed threshold. The threshold was then adjusted by using the following equivalent scale to take into account the number and type of family members (for example, for one-individual family the equivalence scale is 1 and the income threshold €278.88, while for a two-individuals family, the equivalence scale is 1.5 and the income threshold is €437.84)

Family Members	Equivalence Scale	Threshold (2002), €
1	1.00	278.88
2	1.50	437.84
3	1.69	568.92
4	2.06	686.04
5	2.40	794.81

The equivalence scale was then increased of 0.35 for each other component, of 0.2 if there is just one parent and children aged below 18, of 0.5 for each disabled component and of 0.2 for families with children aged under 18 and working parents. Income taken into account for the means test is the sum of incomes of all family components. By law, employment income accounts only for the 75%.

The benefit amount is the difference between an individual monthly income and the threshold. Although the experiment has been dismissed, the Minimum Insertion Income is still in place in some Italian regions, for instance in Trentino Alto Adige.

Housing Benefit (*bho*)

Regions dispose on monetary transfers in order to promote the purchase of the main residence or to help paying the rent (different names are given to these transfers: *Buono casa per le giovani coppie* in Emilia Romagna, *Mutui a Tasso Zero per le Giovani Coppie* in Veneto, *Risparmio Casa* in Trento; source: IreR 2005); such contribution is usually addressed to special kinds of households, such as young couples, couples with young children and single mothers. The contribution is aimed either to reduce the mortgage interests paid for the purchase of the main residence or to provide a sporadic cash benefit; its amount changes among Regions. Two are the main criteria followed in order to provide such contributions: eligibility criteria (means testing), and selectivity criteria (rankings that necessarily rule eligible individuals out, because of budget constraints). The eligibility criterion differs according to the Regions: differences are mainly in the maximum age allowed for one or both members of the couple and in the maximum ceiling for the household's income and wealth. Regions have access to a special location-fund (*Fondo nazionale per il sostegno all'accesso alle abitazioni in locazione*), the consistency of which is fixed by law each year, as summarized in the following table.

The variable included in the dataset (*bho*) is related to rent-related benefits, mortgage benefits plus a residual component (anything which is not rent-related).

Basic Needs Debit Card (*Carta acquisti, bsa01*)

It is a pro-poor allowance paid by mean of a debit card. The card can be used for purchases in grocery stores, superstores, pharmacies or gas and electricity bills in postal offices. Moreover, there are agreements with some shops which allow a 5% discount. The total allocated budget for 2009 is 900 millions of euro. Entitled individuals are poor citizens older than 65 or younger than 3 having an Indicator of Equivalent Economic Situation (*indicatore della situazione economica equivalente - ISEE*) of less than 6.322,64 euro in 2011; 6.499.82 in 2012; and 6.701.34 € in 2013. The benefit amount is 80 euro every two months.

Note that similar programmes are already active at local level: regional (Friuli Venezia Giulia), provincial (Milano, Roma) or municipalities (Anzola dell'Emilia, Belluno, Bergamo, Bologna, Bolzano, Brindisi, Casalpusterlengo, Castelfidardo, Fano, Ghedi, Gioia del Colle, Giussano, Laives, Loreto, Magnago, Modena, Novara, Osimo, Padova, Parma, Pogliano Milanese, Prato, Rieti, Sant'Egidio alla Vibrata, Venezia).

1.2.7 Social Assistance: Benefits related to the reduction in working ability²

The so-called civil disabled persons are entitled to receive a benefit (*pdi*) without any working and contributive history. Entitled to receive the benefit are Italian citizens, EU citizens or extra-EU citizens with a long term residence permit, acknowledged as disabled by special committees of a Local Health Institute (*Azienda Sanitaria Locale - ASL*). In particular, the following different allowances are granted to different disabled individuals.

Civil Infirmary Allowance (*Prestazione di invalidita' civile*)

Eligible individuals are (i) Italian citizens and foreigners with long-term residence permit, (ii) with total (100%) invalidity, (iii) aged between 18 and 65, (iv) with an income not larger than the fixed thresholds (in 2007 14256.92, in 2008 14466.67, in 2009 and 2010 15.154,24). The allowance is incompatible with other benefits granted for the same invalidity reason, as war benefits working and other invalidity benefits supplied by other social security institutions. The allowance, granted for 13 months, was 260.78 euro in 2011 and 267.57 euro in 2012 (*INPS circular letters 132/2009. Annex 1. and 10/2012. Annex 2*).

Monthly Assistance Allowance (*Assegno mensile di assistenza*)

Eligible individuals are (i) Italian citizens and foreigners with long-term residence permit, (ii) with an invalidity between 74% and 99%, (iii) aged between 18 and 65, (iv) not capable of working, (v) without any other allowances from any social security institution (vi) with an yearly income not larger than the fixed thresholds (in 2011 and 4.596.02 euro in 2012). The allowance, granted for 13 months, was 256.67 euro in 2011 and 267.57 euro in 2012.

Accompany Benefit (*Indennita' di accompagnamento*)

Eligible individuals are (i) Italian citizens and foreigners with long-term residence permit, (ii) with a total invalidity (100%), (iv) not able to walk or not able to do daily life activities. The benefit is granted for 12 months without any income mean test, and it was 487.39 euro in 2011 and 492.97 in 2012. (*INPS circular letters 132/2009. Annex 1. and 10/2012. Annex 2*).

² In addition to the benefits listed in the section. **Allowances for Earthquakes Victims, Libyan re-entered individuals and ex Army employees** (assegni per i colpiti da terremoti, rimpatriati dalla Libia e indennità ai dipendenti delle ex FF.AA.)

Frequency Benefit (*Indennita' di frequenza*)

It is a benefit awarded for 13 months to minor citizens living in Italy and foreigners with long-term residence permit, who are enrolled in schools, vocational schools, rehabilitative institutions, having persistent troubles in daily life activities or having a ear damage of more than 60 decibel in the healthiest ear. The amount was 260.78 euro in 2011 and 267.57 euro in 2012. The benefit is means tested and the personal income of the eligible recipient cannot exceed 4.479.54 in 2011 and 4.596.02 in 2012. (*INPS circular letters 132/2009. Annex 1. and 10/2012. Annex 2*).

Sightness Pension (*Pensione di cecità*)

There are two types of sightless pensions, according to the degree of sightless of the individual: **absolute** or **partial sightless**. The sightless is defined partial if the residual sight is at most a twentieth in both eyes. Entitled individuals are Italian resident citizens and foreigners with long-term residence permit, not hospitalized. The pensions are means tested (the threshold was 15.305.79 euro in 2011 and 15.627.22 euro in 2012), and the benefit amount of the absolute (partial) sightless was 282.02 euro (260.78 euro) in 2011 and 289.36 euro (267.57 euro) in 2012, and it is issued for 13 months. (*INPS circular letters 132/2009. Annex 1. and 10/2012. Annex 2*).

Special Benefit (*Indennita' speciale*)

Individuals affected by partial sightless (residual sight of at most a twentieth in both eyes) are entitled to receive, without income test a monthly benefit of 189.63 euro in 2011 and 193.26 euro in 2012 for 12 months (*INPS circular letters 132/2009. Annex 1. and 10/2012. Annex 2*).

Deaf-Dumb Pension (*Pensione ai sordomuti*)

It is a monthly benefit granted to deaf-dumb individuals. When the individual is 65 years old, the pension is turned into a social allowance. Eligible individuals are Italian citizens and foreigners with long-term residence permit, aged between 18 and 65, with an income not larger than the fixed thresholds (in 2007 14256.92, in 2008 14466.67). The benefit amount is granted for 13 months and it was 256,67 in 2010 (*INPS circular letters 132/2009. Annex 1. and 10/2012. Annex 2*).

Communication Benefit (*Indennità di comunicazione*)

It is a benefit granted without income test to Italian resident citizens and foreigners with long-term residence permit. To be entitled for the benefit, the hypacusia must be at least 75 decibel (60 for individuals younger than 12) in the healthiest ear and it must have been occurred in the first twelve years of life. The benefit is incompatible with the frequency benefit, but compatible with the accompany benefit. The benefit amount was 243.10 euro in 2011 and 245.63 euro in 2012 (*INPS circular letters 132/2009. Annex 1. and 10/2012. Annex 2*).

Personal, Long-term Assistance Allowance (*Assegno per assistenza personale continuativa*)

Entitled individuals (i) have been defined by INPS as disabled to working activity, (ii) are incapable to walk alone or (iii) are in need of a permanent help because not able to do everyday activities. The benefit can be requested contextually to the inability pension (see Social Insurance) and it is not granted in case of hospitalization periods provided by the public administrations.

1.3 Social contributions

Social contributions are due by employees, employers and self employed individuals on earned income, and the due amount is different according to: (i) the source of income (employment or self-employment income); (ii) the sector of activity (manufacturing, building, mining, publishing, public administration, handicrafting, agriculture, banking and insurance, services, cooperative sector, broadcasting); (iii) the number of persons working in the firm; (iv) the occupational status (executives, white collars, blue collars). The average contribution rate is about 40%: part is due by the employer, part by the employee.

The National Institute of Social Security (*INPS*) collects contributions for the following insurances:

- Invalidity, Old Age and Survivors (*Invalidit , Vecchiaia, Superstiti*)
- Unemployment (*Disoccupazione*)
- Dependency benefit Fund (*Cassa Unica Assegni Familiari*)
- Redundancy Fund (*Cassa Integrazione Guadagni*)
- Procedure for mobility and Collective Dismissals (*Mobilit *)
- Sickness and Maternity Benefit (*Malattia e Maternit *)
- Severance Pay (*TFR*)

See Section 2.4 for details.

1.4 Taxes

1.4.1 Personal Income Tax (*IRPEF Imposta sui redditi delle persone fisiche – tinna_s*)

IRPEF has been introduced in 1974, substituting a large number of previous real taxes on income. It is an *individual* and *progressive* tax on total income. Family dimension and composition is also taken into account by the system of deductions and tax credits. The tax is due by resident individuals (wherever the income is produced) and non-resident individuals (for incomes produced in Italy). The definition of taxable income is broad, but the actual tax base is smaller because several income sources are subject to separate taxation. The tax base is made of income from land and buildings, from employment and self-employment, business income and capital income in a marginal way (only a quote of dividends and capital gains from dividends and capital gains from a given type of holding - *Partecipazione Qualificata*³ - are included in the personal income tax base).

See Section 2.5 for details.

1.4.2 Personal Income Regional Additional Tax (*IRPEF Addizionale regionale – tinrg_s*)

The Regional Additional Tax is due on the same tax base of the Personal Income Tax. The tax rate is made of two components: a mandatory rate and an additional discretionary rate defined by each region within certain limits. See Section 2.6.1 for details

1.4.3 Separate Taxation on Capital Income (*Imposte sostitutive sui redditi da capitale – tinktcp_s, tinktdt_s, tinktdv_s, tinktbd_s, tinktgb_s*)

Even if capital income is theoretically included in the personal income tax base, it is mainly subject to separate taxation. Up to 2010, there were two different tax rates: 27% and 12.5%:

³ For listed securities, the 2% of the vote rights or the 5% of the company capital; for non-listed securities, the 20% of vote rights or the 25% of the company capital.

long-term investments were encouraged by applying the lower rate. In the period 2012-2013 there are two different tax rates: 20% and 12.5%. From 2014 the standard rate increased from 20% to 26%. With respect to capital gains, some differences arise according to the type of savings regime chosen by the investor. If the portfolio is managed by a financial intermediary, capital gains are taxed at the accrual and it is possible to compensate capital losses with capital income. Otherwise, if the investor self-manages her savings, capital gains are taxed at realization and capital losses may be compensated only with capital gains.

A different regime applies to returns on social security investments which are favoured by applying a rate of 11%, and to arrears, severance pay and private pensions paid out in form of capital. See Section 2.6.2 for details

1.4.4 Corporate Tax (*IRES - Imposta sui redditi delle società*)

The corporate tax is a proportional tax levied on net profits. The basis is roughly computed by adding revenues (sales of goods, services, corporate shares, bonds), capital gains (at realizing), perceived dividends and interests (at nominal value), stocks and subtracting the cost of labor, of goods and services, capital losses, paid interests, depreciation and current losses. The tax rate has been 33% until 2007. Starting with the business year after 2007, the rate is 27.5%. Starting from 2008, it is possible to deduct from the IRES basis the 10% of the regional tax on business (IRAP).

1.4.5 Value Added Tax (*IVA - Imposta sul valore Aggiunto*)

The base of the Value Added Tax is the total business value added minus investment expenses, and therefore coincides with the value of final consumption. The due tax is computed by the method *tax-to-tax*. From 2012 the normal tax rate is 21% (before it was 20%), increased to 22% from 1st October 2013, but there are also two lower tax rates 4% and 10%. The lowest is applied to primary goods such as milk, butter, cereals, pasta and bread, books and newspapers. Exemptions apply on financial transactions, public services and health, education and welfare, and a favourable regime is granted to agriculture.

1.4.6 Regional Tax on Business (*IRAP - Imposta sui Redditi delle Attività Produttive*)

IRAP provides about a half of the financing for Regions (mainly devoted to the health system). The tax is imposed on all those engaged in commercial business and on public administrations. It is charged on the net value added resulting from the business pursued in the region defined as the sum of labor costs, interests paid and profits, net from depreciation.

1.4.7 Municipality Property Tax (*ICI - Imposta Comunale sugli Immobili, IMU – Imposta Municipale Propria and TASI – Tassa sui Servizi Indivisibili*)

The municipality property tax (*ICI - Imposta comunale sugli immobili*) is due by: (i) owners of buildings, building areas, arable lands located in Italy; (ii) individuals enjoying some real rights on that buildings areas or lands (holders of usufruct, right of user, right of occupancy, emphyteusis, building lease); (iii) lessees; (iv) licensees of State demesne.

For buildings registered at the cadastre, the tax base is the cadastral value raised by 5% multiplied by a coefficient which is different according to the building type (from 140 to 34). For the building areas, the tax base is the current selling value. For arable lands, the tax base is the estate income, raised by 25% and multiplied by 75.

Starting from 2008 *ICI* is no more due for the main residence, with the exception of luxury flats, villas, castles and palaces of historic or artistic importance. See the final section on health warnings for details.

Each municipality fixes its own tax rates, which can be found on the web site of the Ministry of Finance: <http://www.finanze.it/dipartimentopolitichefiscali/ici/delibere>

Starting from fiscal year 2012, the Property Tax has been redesigned. The new tax is the IMU – *Imposta Municipale Propria*. The new tax is due by the same subjects as ICI.

The tax base for buildings registered at the cadastre is the cadastral value raised by 5% multiplied by a coefficient that is different according to the building type (from 160 to 55).

Tax rates are different according to the type of building and municipalities can modify them. The baseline rates are: 0.4% for the main residence; 0.2% for rural buildings; 0.76% for rented buildings and other cases. In the case of main residences there is a tax credit of 200 euro plus 50 euros for each dependent children aged 26 or less living in the household.

In 2013 the Property Tax on the main residence has been suspended.

In 2014 it has been introduced the TASI (*Tassa sui Servizi Indivisibili*) on both main residence (average tax rate at national level: 0.17%, without considering tax credits) and other residences (the sum of TASI and IMU cannot exceed the 1.06%). In 2015 the rules are the same as in 2014.

1.4.8 Other indirect taxes

There is a wide amount of other indirect taxes, traditionally classified in three categories: (i) business taxes; (ii) taxes on production and (iii) monopoly and State lottery.

- The **Registration Duty** (*Imposta di Registro*) is levied upon the legal registration of acts of different nature (concerning a legal transaction or an administrative or legal operation). The main source of revenues is connected to real estate transaction and corporate operations.
- The **Mortgage Duty** (*Imposta Ipotecaria*) is linked to mortgage institutions, modifications or redemptions, and transcriptions concerning real estate's immovable.
- The **Stamp Duty** (*Imposta di Bollo*) is levied upon acts (civil, commercial, legal, extrajudicial), notices, posters, advertisements.
- **Excise duties on energy** which particularly hits oil products (petrol and diesel oil), but which is levied also on beer and spirits.
- **Monopoly and State lottery** provides a non-negligible source of revenue.

2. SIMULATION OF TAXES AND BENEFITS IN EUROMOD

2.1 Scope of simulation

In the following Table 1, we provide the list of benefits and taxes which are included in EUROMOD.

Table 1. Simulation of benefits and taxes in EUROMOD

	Variable name	2011	2012	2013	2014	2015
Family Allowance for families with at least three children	bchot	I	I	I	I	I
Scholarship	bed	I	I	I	I	I
Family Allowances	bfalp_s					
	bfacpxc_s	S	S	S	S	S
	bfacpwc_s					
Housing Benefits	bho	I	I	I	I	I
State and Municipalities Dependency Benefits	bmals	I	I	I	I	I
Maternity leave for selfemployed	bmase	I	I	I	I	I
Minimum Insertion Income, Basic Needs Debit Card	bsa00, bsa01	I	I	I	I	I
Redundancy Payment	bunct01	I	I	I	I	I
Unemployment Benefits, Procedure for Mobility	bunct02	I	I	I	I	I
Unemployment Benefits, training	bunst	I	I	I	I	I
Benefits related to the reduction in working ability	phl	I	I	I	I	I
Inability Pensions, Infirmity Allowances and War Pension	pdi	I	I	I	I	I
Old Age Pension	poa	I	I	I	I	I
Social Allowance to individuals older than 65	poamt_s	S	S	S	S	S
Survivors Pension	psu	I	I	I	I	I
Personal Income Tax	tinna_s	S	S	S	S	S
Personal Income Regional Additional Tax	tinrg_s	S	S	S	S	S
Personal Income Tax on rental income	tinrt_s	-	-	S	S	S
Separate Taxation on Capital Income	tinktcp_s					
	tinktdt_s					
	tinktdv_s	S	S	S	S	S
	tinktb_d_s					
	tinktgb_s					
Separate Taxation on arrears and severance pay	tinsv_s	S	S	S	S	S
Property Tax – Main residence	tprmb_s	-	S	-	S	S
Property Tax – Other buildings	tprob_s	S	S	S	S	S
Employee Social Insurance Contributions	tsceepi_s	S	S	S	S	S
	tsceesf_s					
Employer Social Insurance Contributions	tscerpi_s					
	tscerui_s					
	tscersv_s	S	S	S	S	S
	tscerfa_s					
	tscersf_s					
	tscersi_s					
Self-employed Social Insurance Contributions	tscepi_s	S	S	S	S	S
	tscseml_s					

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

2.2 Simulated policies and order of simulation

2.2.1 Simulated Policies

Table 2. Simulated policies

Section	Policy	Description	2011	2012	2013	2014	2015
2.3.1	bfalp_it, bfacpxc_it, bfacpwc_it	Family allowances	X	X	X	X	X
2.3.2	bunct01_it	Wage supplementation scheme	X	X	X	X	X
2.3.3	bunct02_it	Ordinary Unemployment benefit	X	X	X	X	X
2.3.4	poamt_s	Social Allowance to individuals older than 65	X	X	X	X	X
2.3.5	bfaba_s	New born bonus	-	-	-	-	X
2.4.1	sicer_it	Employer SICs	X	X	X	X	X
2.4.2	sicee_it	Employee SICs	X	X	X	X	X
2.4.3	sicse_it	Self-employed SICs	X	X	X	X	X
2.5	tintsna_it, tintc_it, tinna_it tinto_s	Personal Income Tax Additional solidarity contribution	X	X	X	X	X
2.6.1	tinrg_it	Additional Regional Personal Income Tax	X	X	X	X	X
2.6.2	tinkt_it	Separate Taxation on Capital Income, arrears and severance pay	X	X	X	X	X
2.6.3	tprmb_s, tprob_s	Property tax	X	X	X	X	X
2.6.4	tinrt_s	Personal income tax on rental income	-	-	X	X	X
2.6.5	tintcent_s	Bonus “80 euro”	-	-	-	X	X

2.2.2 Order of simulation

Besides the policy sheets containing the default values (*SetDefault_it*), uprating factors (*Uprate_it* and *uprate_bands_it* for the uprating of public pensions), constants (*ConstDef_it*), the definition of income lists (*ILdef_it*) and tax units (*TUDef_it*), the first options in the spine allows the user to decide whether uprating public pensions by average growth (*UAA_it*) and implementing or not the correction for tax evasion (*TCA_it*, see more detail in Section 3.4.2). By default, the latter correction is switched on. The default policy to simulate the minimum wage is switched off as no minimum wage exists in Italy (*yem_it*) while all negative values recorded in the selfemployment income are set to 0 (*neg_it*).

The simulation of social insurance contributions is divided in three policies: *sicee_it*, *sicer_it* and *sicse_it* and precedes the simulation of the personal income tax because social insurance contributions (paid by employees and self-employed) are deductible.

The following two policies refer to housing: tax on rental income (*tinrt_it*) and property tax (*tpr_it*)

The simulations of both the wage supplementation scheme (*bunct01_it*) and the ordinary unemployment benefit (*bunct02_it*) are switched off by default in the baseline and used for the calculation of net replacement rates or as part of other add-ons. Both benefits are taxable and then simulated before the income tax.

The policy *isee_it* allows to simulate the Indicator of Equivalised Economic Situation (ISEE) which is used for most of means-tested benefits as well as for the out of pocket childcare fees (implemented just as an example in the policy *xcc_it*)

The additional solidarity contribution (*tinto_it*) is simulated, together with the cuts of public pensions and public salaries, before the income tax because is deductible.

The personal income tax is simulated in three different policy sheets: *tintsna_it* (including the main tax deductions and the tax schedule), *tintc_s* (personal tax credits) and *tinna_s* (family tax credits and final calculation of the tax). The policy *tintciw_it* simulates the “80 euro” bonus, which is considered part of the national income tax (as a consequence, it can be negative) Additional regional personal income tax (*tinrg_it*) and separate taxation on capital income (*tinkt_it*) follow.

The last five policy sheets of the spine (before the “output” policy sheets) include the simulation of the Social Allowance to individuals older than 65 (*poamt_it*), the new born bonus (*bfaba_it*) and the Family Allowances (*bfacpxc_it*, *bfalp_it* and *bfacpwc_it*).

Table 3. EUROMOD Spine: order of simulation, 2011-2015

Policy	Description	Main output
SetDefault_it	Default values	
UAA_it	Switch for uprating pensions by average growth	
Uprate_it	Uprating factors	
uprate_bands_it	Uprating factors for public pensions	
ConstDef_it	Constants and other system definitions	
ILDef_it	Income concepts	
TUDef_it	Assessment units	
TCA_it	Tax evasion correction	
yem_it	Minimum wage	
neg_it	Correction of negative values	
sicee_it	Employee SICs	tsceepi_s, tsceesf_s
sicer_it	Employer SICs	tscerpi_s, tscerui_s, tscersv_s, tscerfa_s, tscersf_s, tscersi_s
sicse_it	Self-employed SICs	tscsepi_s, tscsem1_s
tinrt_it	Tax on rental income	tinrt_s
tpr_it	Property tax	tprmb_s, tprob_s
bunct01_it	Wage supplementation scheme	bunct01_s
bunct02_it	Ordinary Unemployment benefit	bunct02_s
isee_it	Indicator of Equivalised Economic Situation	ymn03_s
xcc_it	Out of pocket childcar fees	xcc01_s
tinto_it	Additional solidarity contribution and cuts to public pensions and public salaries	tinto_s poa yem
tintsna_it	Personal Income Tax: Deductions and tax schedule	tintsna_s
tintc_it	Personal Income Tax: personal tax credits	tinna_s
tinna_it	Personal Income Tax: family tax credits and final tax	tinna_s
tintciw_it	Bonus "80 euro"	tintcent_s
tinrg_it	Additional Regional Personal Income Tax	tinrg_s
tinkt_it	Separate Taxation on Capital Income, arrears, private pensions and severance pay	tinktcp_s, tinktdt_s, tinktdv_s, tinktbd_s, tinktgb_s, tinsv_s
poamt_it	Social Allowance to individuals older than 65	poamt_s
bfaba_it	Bew born bonus	bfaba_s
bfacpxc_it	Family allowance: couple and 0 child	bfacpxc_s
bfalp_it	Family allowance: one parent and children	bfalp_s
bfacpwc_it	Family allowance: two parents and children	bfacpwc_s
output_std_it	Standard output – individual level	
output_std_hh_it	Standard output – household level	

2.2.3 Structural changes between 2011 and 2012

Personal Income Tax (IRPEF): Starting from 1st January 2011 (up to 2016) an additional tax rate of 3% is levied on taxable incomes above 300.000 euro (Additional solidarity contribution - *Contributo di Solidarietà*), deductible from IRPEF.

Regional Personal Income Tax Surcharge (Addizionale IRPEF): increase in rates in most regions.

Separate Taxation on Capital Incomes: Tax rates on bonds and dividends are increased from 12.5% to 20%. Tax rates on deposits are decreased from 27% to 20%. Interests from State bonds (both Italian and foreign) are still taxed at 12.5%.

Municipal Property Tax (IMU – *Imposta Municipale Propria*): Starting from fiscal year 2012, the property tax has been redesigned. The new tax is due by the same subjects as ICI. The tax base for buildings registered at the cadastre is the cadastral value raised by 5% multiplied by a coefficient that is different according to the building type (from 160 to 55). Tax rates are different according to the type of building and municipalities can modify them. The baseline rates are: 0.4% for the main residence; 0.2% for rural buildings; 0.76% for rented buildings and other cases. In the case of main residences there is a deduction of 200 euro plus 50 euros for each dependent children aged 26 or less living in the household.

Public pensions subject to cuts (if above 90000 euro per year) and indexation only if above three times the minimum value.

Public salaries subject to cuts (if above 90000 euro per year) and no indexation.

2.2.4 Structural changes between 2012 and 2013

Personal Income Tax (IRPEF): increase of tax credits for dependent children

Municipal Property Tax (IMU – *Imposta Municipale Propria*) only on other residences (main residence is not subject to IMU)

Unemployment benefit: replaced by a relatively more generous scheme (in terms of coverage and adequacy)

2.2.5 Structural changes between 2013 and 2014

Personal Income Tax (IRPEF): increase of tax credits for employees. Reduction of fiscal burden on labour income («bonus of 80€ per month») for dependent workers with taxable income below 26.000 €/per year.

Separate Taxation on Capital Incomes: Tax rates on deposits, bonds and dividends are increased from 20% to 26%.

Property Tax. New tax (*TASI*) on main and other residences.

Public pensions. New solidarity contribution.

2.2.6 Structural changes between 2014 and 2015

Personal Income Tax. Bonus of 80€ per month» has been made definitive, 960 euro per year (Source INPS message 2946/2015). New born bonus (80 euro per month)

For details about the austerity measures introduced in the 2011-12 fiscal years (and simulated), see Avram et al. (2013), for an update up to 2014 see Figari and Fiorio (2015).

2.3 Social benefits

2.3.1 Family Allowances (*bfacpxc_s*, *bfalp_s*, *bfacpwc_s*)

The **Family Allowances** (*Assegno per il nucleo Familiare*) are targeted to families of employees and pensioners with family incomes below determined thresholds. The thresholds and the amounts of the benefit are different according to the household composition and number of members, and are fixed every year by Law.

- **Definition**

The unit of analysis is the family (*tu_fa_family_it*) including⁴:

- The referent person who asks for the benefit;
- The spouse;
- Children and grandchildren of direct ascendant if aged under 18.

- **Eligibility conditions**

Eligible individuals are: employees, retired employees, unemployed individuals receiving the unemployment benefit, individuals under severance pay, individuals under procedure for mobility and collective dismissal, employees on sick or maternity leave (recipients of income source included in the income list *il_fa_dep*).

An individual is entitled to receive the benefit if the sum of the above income sources, net of social contributions, amounts to at least 70% of the whole family members' income (*il_fa_totinc*). Sources of income not subject to income tax or subject to withholding tax (*il_fa_disregy*) are included only for the amount larger than 1,032.91 euro per year (disregarded amount: *ydg01_s*).

The income relevant for the benefit is the income produced in the solar year before the 1st of July of each year, and it remains valid until the 30th of June of the following year. Therefore, for example, for the period between the 1st of July 2012 and the 30th of June 2013, income produced in 2011 is taken into account. For the simulation of the benefit, we assume the family income to stay constant in two consecutive years and we use the income thresholds as of 1st July (instead of 30th June).

⁴ Other entitled individuals (not included in the simulation due to lack of information in the data) include i) children aged above 18 unable to work; ii) siblings and nephews aged under 18 or aged above 18 unable to work, if they are orphans of both parents and do not receive any survivor pension, iii) one single person receiving a survivor pension (orphan or spouse), if she is aged under 18 or aged above 18 unable to work.

- **Income test**

The access to the benefit is restricted to those families below an income threshold. The threshold is different according to the composition of the family (presence of either spouses or just one, presence of children aged under 18) and increasing in the number of family members. Income thresholds are adjusted each year and index-linked to the annual average growth rate of the consumer price index for working-class households, elaborated by the National Statistical Office (*ISTAT*):

Table 4. Annual Average Growth Rate of consumer price index (% with respect to previous year)

Year	$\Delta\%$
2011	+1.6
2012	+2.7
2013	+3.0
2014	+1.1
2015	+0.3

Source: ISTAT, FOI, Indice Nazionale dei prezzi al consumo per le famiglie di operai ed impiegati.

- **Benefit amount**

The employer has to pay the benefit to entitled employees who ask for it. The benefits to be paid to children of divorced parents, to natural children, to siblings, to nephews, to invalid family members and to family members living abroad have to be approved by the National Institute of Social Security - INPS.

The benefit is paid off together with the wage for employees. Then, the employer asks INPS to be refunded. Unemployed individuals and pensioners receive the benefit from INPS.

The income thresholds and the benefit amount (valid from 1st July to 30th June) depend on family composition. We simulate Family Allowances for three types of family:

- family with no children – (*bfacpxc_s*)
- family with one parent and at least one child aged <18 – (*bfalp_s*)
- family with two parents and at least one child aged <18 – 2005 (*bfacpwc_s*)

The benefit amount decreases with income in a non linear way. From 2009 on, for families with more than 7 members the monthly benefit amount follows precise rules as for smaller families. However, in the simulation it is increased by 15% plus a lump sum of 55 euro per month (following the rules pre-2009, given that in the underlying data only few families (i.e. 1 family in 2012 data) are larger than 7 members and entitled to the benefit. See EUROMOD policy sheets for the specific benefit amounts.

For details on income thresholds and benefit amounts see EUROMOD model.

- **EUROMOD notes**

Since in the dataset we do not have any detailed information on the disability status (as defined by the Law) of the individuals, in the simulation we assume that there are no disabled persons.

The discipline of the benefit applies also to part-time workers, with some differences. If the worker has worked at least 24 hours a week, the allowance is due without reductions for each weekday, including Saturday (even if it is not a working day). If the worker has worked less than 24 hours a week, the allowance is due only for the working days. Due to lack of data on the hours worked, the reduction for part time workers is not considered in the simulation.

As mentioned above, for the simulation of the benefit, the family income is assumed to stay constant in two consecutive years (e.g. by law the income thresholds valid at 30th June of 2011 are applied to the income earned in 2009. In the simulation we observe income earned in 2011, assuming that family composition and family income do not change between 2009 and 2011 and we use the income thresholds as of 1st July (instead of 30th June).

2.3.2 Wage supplementation scheme (*Cassa Integrazione Guadagni – bunct01_s*)

- **Definitions**

The Wage supplementation scheme (*Cassa integrazione guadagni*) is a means for softening the impact of economic cycles on the labour market, allowing firms to keep their full workforce, who can work shorter hours while waiting for better economic conditions.

- **Eligibility Conditions**

The main eligibility conditions are set at firm level and all employees of a firm brought on the scheme can be eligible for it.

- **Income Test**

There is not an income test, but the law fixes a maximum monthly amount which depends on the wage. These thresholds are summarized in the following tables.

Table 5. Wage Supplementation scheme - Maximum Amount – 2011-2015

Year	Wage Threshold	Benefit Maximum Amount	
		Below the threshold	Above the threshold
2011	1,961.80	853.84	1,026.24
2012	2,014.77	876.89	1,053.95
2013	2075.21	903.20	1,085.57
2014	2098.04	913.14	1,097.51
2015	2102.24	914.96	1,099.70

Source: *INPS Circular Letter 25/2011 and 20/2012, 12/2014, 19/2015*

2.3.3 Ordinary Unemployment benefit (*Indennita' di disoccupazione ordinaria / ASPI – bunct02_s*)

- **Definitions**

The ordinary unemployment benefit is granted to insured employees who have been dismissed. From 2013 the ordinary unemployment benefit has been replaced by ASPI and mini-ASPI. The mini-ASPI is not simulated due to the lack of information available in the datasets

- **Eligibility Conditions**

The benefit is not granted to resigned employees, unless the resignation is due to *good cause* as, for example, missed wage payment, sexual harassment, mobbing. The benefit is also given to employees who have been suspended for transitory reasons and causes not due to employers or employees behaviour. The benefit is no more due when the employee (i) has received the benefit for all the allowed days; (ii) starts a new employment; (iii) retires; (iv) refuses an employment proposal with a wage non less than the 20% of the previous one; (v) refuses to be enrolled in social activities; (vi) is erased from the employment lists.

Eligible individuals are employees who have paid (i) contribution against unemployment for at least two years or (ii) 52 weeks of contribution in the two-year period before the date of work suspension.

- **Income Test**

There is not an income test, but the law fixes a maximum monthly amount which depends on the wage. These thresholds are summarized in the following tables.

Table 6. Ordinary Unemployment Maximum Amount – 2011-2012

Year	Wage Threshold	Benefit Maximum Amount	
		Below the threshold	Above the threshold
2011	1,961.80	906.80	1,089.89
2012	2,014.77	931.28	1,119.32

Source: *INPS Circular Letter 25/2011 and 20/2012*,

Table 7. ASPI Maximum Amount – 2013-2015

Year	Wage Threshold	Benefit Maximum Amount
2013	1,180	1,152.90
2014	1,192.98	1,165.58
2015	1,195.37	1,167.91

Source: *INPS Circular Letter 14/2013.12/2014, 19/2015*

- **Benefit Amount**

The benefit amount and the duration of the treatment are different according to scheme in place and the age of the employee as detailed in the following tables. The benefit is taxable.

Table 8. Ordinary Unemployment Benefit Amount – 2011-2012

Age	Duration	Benefit Amount (% of average gross wage of last three months)
Aged <50	8 months	60% for months 1 to 6, 50% months 7 to 8
Aged >= 50	12 months	60% for months 1 to 6, 50% months 7 to 8 and 40% for the following months

Table 9. ASPI Amount – 2013-2015

Age	Duration	Benefit Amount (% of average gross wage of last two years)
Aged <50	8 months (10 months from 2015)	75% for months 1 to 6 if gross wage <= the wage threshold
Aged >= 50	12 months	75% + 25% (wage – wage threshold) for months 1 to 6 if gross wage > the wage threshold After the first 6 months, the benefit is reduced by 15%

The duration is longer than 12 months for those aged >=55 and the benefit is reduced by 15% after the first 12 months, but in EUROMOD the simulation is based on the first 12 months of receipt.

- **EUROMOD notes**

By default the simulation of unemployment benefit is switched off in the spine. The implemented simulation takes into account the previous earnings and the number of months spent in work which need to be specified in the respective variables by the user.

2.3.4 Social Pension and Social Allowance to individuals older than 65 (*Assegno sociale per ultrasessantacinquenni – poamt_s*)

- **Definitions**

These are a purely social assistance benefits dedicated to old indigent Italian citizens, or other EU citizens living in Italy.

- **Eligibility Conditions**

Eligible individuals are at least 65 years old. They must be Italian citizens living in Italy or (starting from the 11th April 2007) other EU citizens who have been living in Italy for at least three months or (starting from the 1st of January 2009) other EU citizens who have been living in Italy consecutively and legally for at least ten years.

• *Income Test*

The sum of all incomes of the individual (non married) or the cumulated incomes of the two spouses, except:

- one third of the pension computed with the pay-as-you-go contributive system,
- the arrears subject to separate taxation,
- the redundancy benefit,
- any kind of family allowance,
- the cadastral value of the main residence,
- the social allowance,
- the accompanying allowance,
- the allowances related to some sort of disability
- the war pension

cannot exceed some maximum amounts, summarized in the following tables

• *Benefit Amount*

Eligible individuals receive the total benefit amount only if their income is zero. Otherwise, they receive the difference between the benefit amount and their income. No benefit is due if the income exceeds the fixed thresholds. The amount due is subject to a means-tested monthly increase (*maggiorazione*). On top of the means-tested monthly increase, another increase (*aumento dell'assegno sociale*) of 167.96 euro per year is granted when specific income conditions apply.

Income test and Benefit amount for Social Allowance for elderly

Year	Non married			Married	
2011	Zero	418.12	Zero	418.12	
	> 5.435.56	Zero	> 10.871.12	Zero	
	< 5.435.56	$(5.435.56 - RP) / 13$	< 10.871.12	$(10.871.12 - RC) / 13$	
2012	Zero	429.00	Zero	429.00	
	> 5.577.00	Zero	> 11.154.00	Zero	
	< 5.577.00	$(5.577.00 - RP) / 13$	< 11.154.00	$(11.154.00 - RC) / 13$	
2013	Zero	442.30	Zero	442.30	
	> 5,749.90	Zero	> 11,499.80	Zero	
	< 5,749.90	$(5,749.90 - RP)/13$	< 11,499.80	$(11,499.80 - RC)/13$	
2014	Zero	447.17	Zero	447.17	
	> 5,813.21	Zero	> 11,626.42	Zero	
	< 5,813.21	$(5,813.21 - RP)/13$	< 11,626.42	$(11, 626.42- RC)/13$	
2015	Zero	448.52	Zero	448.52	
	> 5,830.76	Zero	> 11,661.52	Zero	
	< 5,830.76	$(5,830.76 - RP)/13$	< 11, 661.52	$(11, 661.52- RC)/13$	

Source: *INPS Rinnovo "year" - Tabelle*

Annual increased amount for Social Allowance for elderly (Maggiorazione)

	2009	2010	2011	2012	2013	2014	2015
>=65	185.59	185.88	186.67	187.97	189.57	190.15	190.31

Source: *INPS Rinnovo “year” - Tabelle*

2.3.5 New born bonus (*Bonus bebè – bfaba_s*)

The bonus corresponds to 80 Euro per months for a maximum of three years are given to families per each child born before December 2015. It is subject to a means-test verified by using the ISEE (Indicator of Equivalised Economic Situation) which cannot be higher than 25.000 euro per year. If the ISEE is below 7.000 euro per year the amount of the bonus is 160 euro per month.

2.4 Social contributions

The incidence of social contributions on earned income is different according to: (i) the source of income (dependent, self-employment); (ii) the sector of activity (manufacturing, building, mining, publishing, public administration, handcrafting, agriculture, banking and insurance, services, cooperative sector, broadcasting); (iii) the number of persons working in the organization; (iv) the occupational status (executives, white collars, blue collars).

Due to lack of data, we simulate a simplified version of the social contribution system, by applying to all dependent workers the rates of the Industrial Sector with more than 50 employees, discriminating between blue and white collars. As for the self-employed workers we differentiate only between craftsmen, tradesmen, and farmers.

Table 10. List of different sectors to determine the contributory rates

General Industry	Radio and Television Industries and Show business
<=15 employees	Industrial Sector
between 15 and 90 employees	Radio and television private industries
More than 90 employees	Not employed artists
Building Industry	Bingo Arcades
<=15 employees	Developing, Print and Distribution <15
Between 15 and 50 employees	Developing, Print and Distribution >15 & <50
More than 50 employees	Developing, Print and Distribution >50
Stone Industry	Trading Sector
<=15 employees	Commerce - Tertiary
between 15 and 50	Commerce <=50
More than 50	Commerce > 50, <200
Handicraft	Commerce >200
Craftsman	Temporary job placement Agencies
Induced craftsman	Travel Agencies <=50
Building craftsman	Travel Agencies >50
Induced building craftsman	Cleaning Agencies <=15
Stone craftsman	Cleaning Agencies >15
Induced Stone craftsman	Security Services <=15
Agriculture	Security Services >15
Farming	Logistic Services <=50
Farms owned by a tenant farmer	Logistic Services >50 & <200
Cooperative	Logistic Services >200
State Administration	Firm Refectories <15
State Administration	Firm Refectories >15
Secular chaplain	Special Funds
Regular chaplain	Road haulage contractors craftsmen
Prison Inmate	Road haulage contractors industry
Work yards and reforestation	Road haulage regional or governative
State Schools	Contractors
Arts and Professions	Flight Fund
Political Parties and Unions	Banks and Insurance
Bingo Arcades	Regions, Provinces, Municipalities
Fast Mail Carriers	Cooperatives
Tertiary	Personnel abroad
	Apprentices

The average contribution rate is about 40%: part is due by the employer, part by the employee. The National Institute of Social Security (*INPS*) collects contributions for the following insurances:

- Invalidity, Old Age and Survivors (*Invalidità, Vecchiaia, Superstiti*), which is the contribution valid for the pension
- Unemployment (*Disoccupazione*);
- Dependency benefit Fund (*Cassa Unica Assegni Familiari*);
- Redundancy Fund (*Cassa Integrazione Guadagni Straordinaria*);
- Procedure for mobility and Collective Dismissals (*Mobilità*);
- Sickness and Maternity Benefit (*Malattia e Maternità*);
- Severance Pay (TFR).

Contribution is proportional to the gross wage defined as compensation in money and in kind. The following are excluded: the amounts received as Severance Pay, as encouragement to leave, as indemnity, as insurance premium, family benefits, the amounts received as scholarships, childcare and summer camps for family members, fringe benefits within € 258.23, travelling expenses within given thresholds.

The tax base for social contributions (*limite di retribuzione per l'accredito dei contributi*) cannot be lower than a given threshold fixed by the Law. On the other hand, there is also a threshold above which contribution is no more due (*massimale annuo della base contributiva*) and it applies to workers who started their working activity after the 1st of January 1996.

Table 11. Monthly Minimum and Maximum tax base for social contribution: Employees

	2011	2012	2013	2014	2015
Min	811.81	832.91	857.90	868.17	870
Max	7,801.83	8012.41	8252.83	8343.58	8360.33

Source: INPS: circular letters n. 14/2009, 16/2010, 24/2011, 21/2012 and 22/2013, 20/2014. 11/2015)

As we showed in Table 10, the Italian contributory system is very fragmented and we do not simulate the rates for all the possible combinations, considering that they differ very little and we do not have enough information in the data. In the following two paragraphs we report the rates of the Industrial Sector with more than 50 employees, discriminating between blue and white collars. which are simulated in EUROMOD.

2.4.1 Employer social insurance contributions (*tscerpi_s, tscerui_s, tscersv_s, tscerfa_s, tscersf_s, tscersi_s, tscertj_s*)

The following table reports the employer social contributions for blue collars (b.c.) and white collars (w.c.) in the four considered years, related to industrial firms with more than 50 employees.

Over recent years, a substantial reduction of the tax wedge on new contracts has been implemented in different stages by a temporary reduction in social security contributions targeted at elderly workers and women⁵ and a more generous wage subsidy, corresponding to one-third of the gross salary, granted to firms hiring young workers for a period of 18 months.⁶ Moreover, since the beginning of 2015, firms are exempted from paying social security contributions on new permanent contracts for three years.⁷ Due to data limitation, these reductions (which last for a limited period of time) are not simulated in EUROMOD.

⁵Fornero Law, N. 92/2012.

⁶Giovannini-Letta Law, N. 99/2013.

⁷Stability Law, N. 190/2014.

Table 12. Employer social contribution rates (%), industrial firms with more than 50 employees

	2011-15	
	b.c.	w.c.
IVS	23.81	23.81
Unemployment	1.91	1.91
T.F.R.	0.2	0.2
Family allowances	0.68	0.68
Redundancy Fund	2.80	2.80
Sickness and Maternity	2.68	0.46

Source: INPS (<http://www.inps.it/docallegati/mig/doc/Professionista/aliquote/aliquote.htm>). Annex. Notes: b.c.: blue collars; w.c.: white collars

2.4.2 Employee social insurance contributions (*tscepi_s*, *tsceesf_s*, *tsceetj_s*)

The following table reports the employee social contributions for blue collars (b.c.) and white collars (w.c.) in the four considered years, related to industrial firms with more than 50 employees.

Table 13. Employee social contributions, rates (in %)

	2011-15	
	b.c.	w.c.
IVS	9.19	9.19
Redundancy Fund	0.30	0.30

Source: INPS (<http://www.inps.it/docallegati/mig/doc/Professionista/aliquote/aliquote.htm>). Notes: b.c.: blue collars; w.c.: white collars.

Within the same policy sheet of employer and employee social insurance contributions we simulate the contributions related to temporary job (*co.co.co.*) as well.

Table 14. Temporary job (*co.co.co.*) Social contributions, Maximum tax base and rates (in %)

	maximum	employer	employee
2011	93,962	17.814	8.907
2012	96,149	18.48	9.24
2013	99,034	18.48	9.24
2014	100,123	19.15	9.57
2015	100.324	20.48	10.24

Source: INPS: circular letters n. 27/2013, 18/2014, 27/2015

In the recent years the increases in the rates are part of the austerity measures package (see Avram et al. 2013).

2.4.3 Self-employed social contributions

In the same way as the subordinate employment social contributions, self-employed social contribution provides a minimum and a maximum level of income, below and above which

contribution is no more due. In the following table we summarize the minimum income (*minimale*) and the maximum income (*massimale*) for computing contribution for craftsman and retailers.

Table 15. Monthly Minimum and Maximum wages for social contribution: Craftsmen and Retailers

	2011	2012	2013	2014	2015
Min	1,212.67	1,244.17	1,279.75	1293	1295.67
Max	5,978.08	6,139.42	6,323.58	6393.17	6406

Source: INPS Circular Letters 16/2009, 14/2010, 34/2011, 14/2012 and 24/2013 19/2014, 26/2015

Note: Minimum and Maximum wages are defined in yearly terms: the figure shows the official amounts divided by 12.

For farmers, instead, the criterion for determining the contributory amount is based on the definition of a *normal income*, which is defined by law each year and differentiated for the age of the worker (younger or older than 21 or older than 65), the location of the land (normal, mountain or depressed areas) and the type of activity.

Note that we simulate the benefit for farmers on the basis of their *actual* (declared) income, since from the data we have it is impossible to recover all the information needed to find the *normal income*.

The following table reports the self-employed social contributions levied on self-employment income (*yse*) for craftsman (*crm*), retailers (*ret*) and farmers (*agr*) in the four considered years:

Table 16. Self-employed social contributions, rates (in %)

	2011			2012			2013			2014			2015		
	crm	ret	agr	crm	ret	agr	crm	ret	agr	crm	ret	agr	crm	ret	agr
IVS (%), >21 years	20.00	20.09	20.30	22.20	22.20	22.20	21.75	21.84	22.0	22.20	22.29	22.4	22.65	22.74	22.8
IVS (%), <=21 years	17.00	17.09	17.80	19.20	19.20	19.20	18.75	18.84	20.2	19.20	19.29	21.0	19.65	19.74	21.8
Maternity (€/per year)	7.44	7.44	7.49	7.44	7.44	7.44	7.44	7.44	7.49	7.44	7.44	7.49	7.44	7.44	7.49

Source: MEF (2009). INPS circular letter n. 34/2011 and 76/2011. 14/2012 and 75/2012.24/2013 95/2013 19/2014, 70/2014, 26/2015, 108/2015

Note: crm: craftsman. ret: retailers. agr: farmers.

The increases since 2012 are part of the austerity measures package (see Avram et al. 2013).

2.5 Personal income tax

The main tax simulated for Italy is the Personal Income Tax (*IRPEF - Imposta sul Reddito delle Persone Fisiche, tinna_s*). All residents are responsible to pay IRPEF on their income (and non resident for income produced in Italy).

2.5.1 Tax unit

Personal Income Tax is individual. However, the dimension and the composition of the family are taken into account by mean of tax allowances and tax credits due to the presence of “fiscal dependent” persons. In order for a family member to be considered *dependent* she has to live within the same residence as the reference individual and her income cannot exceed 2.840,51 euro (*ils_origrepy*). This income is defined as all incomes which are included in the personal income tax base and also incomes received by international organizations, consular and diplomatic representatives, the Holy See and organizations directly controlled by it.

2.5.2 Exemptions

The following income components are not included in the concept of gross income:

- Incomes subject to withholding taxation (mainly income from financial assets (*iyi*), such as capital gains and dividends (*iyidv*));
- Income subject to separate taxation as, for example, salary arrears (*yempv*), pensions paid out in form of capital (*ypp01*), and severance pay (*yunsv*);
- Incomes free of income tax as, for example, school benefits (*bed*), some disability pensions (*pdi*), social allowance for elderly (*poamt*), family allowances (*bfacpxc_s*, *bfalp_s*, *bfacpwc_s*), child benefits (*bchot*), fringe benefits only if below 258.23 euro (*kfb*).

2.5.3 Tax allowances

In 2007 the tax allowances system has been totally renewed, since numerous tax allowances have been replaced by a set of tax credits. The following tax allowances remain the same over the five fiscal years considered (2011-2015).

The main tax allowances are social contribution due by employed (*ils_sicee*) and self-employed (*ils_sicse*) individuals and contribution to private pension plans (*tintapv_s*). With respect to the contribution to private pension plans, tax deduction cannot exceed the 12 % of individual total income (*il_taxableY*) and in any case it cannot be greater than 5,164.54 euro per year. From 2007, the limit of 12% of taxable income is abolished.

Another important tax allowance is the tax deduction for the main residence equal to its cadastral income (*amriv*).

Other tax allowances are related to disabled persons health expenses, grants to religious institutions, expenses for domestic help (*tintaos_s*). Due to lack of information in the data, the amount of these allowances is given by a coefficient (defined by income classes and calibrated on the aggregate information collected from the Ministry of Finance) multiplied by individual income.

2.5.4 Tax base

The tax base is defined as gross income minus the various exemptions outlined above. The gross income is defined as the sum of the following income sources:

- 85% of income from Land and Buildings (*tinbrt_s*): from 2011 a separate taxation on rental income applies at a flat rate equal to 21% (simulated in *tinrt_s*) and, as a consequence the income from Land and Buildings is not included anymore in the tax base for the Personal Income Tax neither at national level nor at regional and municipal level.
- Income from Employment (*yem*) and assimilated incomes as vocational training (*bunst*), redundancy payment (*bunct01*), income from mobility and collective dismissals (*bunct02*), income received by people aged under 15 (*yot*), old age pension (*poa*), survivor pension (*psu*), invalidity pension (*phl*)
- Fringe benefits (*kfb_s*) exceeding 258.23€/per year
- Income from Self-Employment (*yse*) and maternity benefits for self employed people (*bmase*)
- Capital component of private supplementary pensions (assumed to be 70% of total, *ypp02*)
- Cadastral income of main residence (*amriv* – then completely deducted) and other residence (*aobiv*): in 2012 with the introduction of the new Property Tax (*IMU*) the cadastral value of all residences is not included anymore in the tax base for the Personal Income Tax. Since 2013 50% of cadastral income should be included in the tax base if the residence is not rented and it is located in the same municipality of the main residence. Due to lack of data this is not simulated.

2.5.5 Tax schedule

Income taxation is graduated, with progressively higher marginal tax rates applying to higher income brackets. There are five income brackets.

Table 17. Income brackets (2011-2015)

Income Brackets (Euro per year)	Tax rate (%)
≤15,000	23
15,000-28,000	27
28,000-55,000	38
55,000-75,000	41
≥75,000	43

Source: Agenzia delle Entrate

Starting from 2011, there is an additional tax rate of 3% on taxable incomes above 300.000 euros (solidarity contribution – *tinto_s contributo di solidarietà*).

2.5.6 Tax credits

Tax credits are classifiable into 4 classes which apply all along the four fiscal years taken into account. Some of them have been introduced in 2007 to replace the previous scheme of tax allowances.

All tax credits are non-refundable: as a consequence the tax liability cannot be negative.

Tax credits for personal expenses

It is possible to subtract from the tax liability the 19% of 36 different cases from health expenses to education expenses, to gifts to art or sport institutions, to travel expenses for commuters, and many others. The most important are the following:

- Interests paid on mortgage loans (*xhcmomi*) for the purchase of the main residence, not exceeding 4,000 euro (*tintcmi_s*);
- Health Expenses (for the amount exceeding 129.11 euro), also for the dependent family members, guide dog and expenses for visual, hearing or deambulation aids for disabled persons;
- Life premium and insurance premium against permanent disability, not exceeding 1,291.14 euro;
- Expenses for high and university education;
- Funeral Expenses;
- Donations to non profit organizations;

All the tax credits but *tintcmi_s* are imputed by applying a coefficient calibrated by income classes to get the total amount of tax credits as reported in the aggregate fiscal data).

Tax credits with incentive purposes

In order to stimulate some consumers' behaviours the following tax credits are allowed:

- For tenants subject to controlled rent contracts (Contratti Convenzionali), 495.80 euro if total income is less than 15,493.71 euro and 247.90 euro if total income is between 15,493.71 and 30,987.41 euro;
- For tenants who are employees and move their main residence closer to their working place, being in a different region and further than 100 Km from the original location, 991.60 euro if total income is less than 15,493.71 euro and 495.80 euro if total income is between 15,493.71 and 30,987.41 euro;
- The 36% (optional at 41% starting from 2006, not simulated) of the expenses for the refurbishment of buildings, not exceeding 48,000 euro (*tintc01_s*);
- The 55% of the expenses for energy conservation's interventions.

Within this list, due to lack of data we simulate only the tax credit for the expenses for the refurbishment of buildings (36%), by applying a calibration coefficient which takes into account the possibility of claiming this tax credit in 5 or 10 years.

Tax credits for income source

The tax credits for income source apply in a different way to different classes of taxpayers: employees (*tintcee_s*), pensioners aged 75 and above, pensioners aged below 75 (*tintcpe_s*) and self-employed workers (*tintcse_s*).

The tax credits define a *no tax area* for the four classes of taxpayers and it is then linearly decreasing in the level of gross income minus the cadastral value of the main residence (*il_taxable_pertc*). At 55,000 euro the tax credit is zero.

If more than one source of income is received, the tax credits apply in proportion to the period the individual received that source of income.

Table 18. Tax credits for income source, amounts per year (2011- 2015)

Employment income and assimilated (<i>il_emp</i>)	
Until 8,000	1,840
8,001-15,000	$1,338 + 502 * ((15,000 - il_taxable_pertc) / 7,000)$
15,001-23,000	$1,338 * ((55,000 - il_taxable_pertc) / 40,000)$
23,001-24,000	$1,348 * ((55,000 - il_taxable_pertc) / 40,000)$
24,001-25,000	$1,358 * ((55,000 - il_taxable_pertc) / 40,000)$
25,001-26,000	$1,368 * ((55,000 - il_taxable_pertc) / 40,000)$
26,001-27,700	$1,378 * ((55,000 - il_taxable_pertc) / 40,000)$
27,701-28,000	$1,363 * ((55,000 - il_taxable_pertc) / 40,000)$
28,001-55,000	$1,338 * ((55,000 - il_taxable_pertc) / 40,000)$
Pensions (<i>il_pensions</i>): pensioners aged below 75	
Until 7,500	1,725
7,501-15,000	$1,255 + 470 * ((15,000 - il_taxable_pertc) / 7,500)$
15,001-55,000	$1,255 * ((55,000 - il_taxable_pertc) / 40,000)$
Pensions (<i>il_pensions</i>): pensioners aged 75 and above	
Until 7,750	1,783
7,751-15,000	$1,297 + 486 * ((15,000 - il_taxable_pertc) / 7,250)$
15,001-55,000	$1,297 * ((55,000 - il_taxable_pertc) / 40,000)$
Self-employment income (<i>yse</i>)	
Until 4,800	1,104
4,801-55,000	$1,104 * ((55,000 - g.i.) / 50,200)$

Source: Agenzia delle Entrate

The tax credits related to employment income and pensions depends on the number of months in receipt of the given income source. The tax credit for employment income cannot be lower than 1,380€ per year if the individual has a temporary contract (*lap00 = 1*) or lower than 690€ per year otherwise (*lap00 = 0*). The tax credit for pensions cannot be lower than 690€ per year if the individual is aged below 75 years or lower than 713€ per year if the individual is aged 75 years or above.

They cannot be summed up, and the individual can choose the most profitable one.

From 2014 the tax credits for employees are more generous, see the model for details.

Tax credits for dependent family members

The tax credits for dependent family members are different for the spouse, the children and other family members. Moreover, the tax credit changes with the children age (more or less than three years old) and the number of the children.

A family member is defined as *dependent* if she lives with the referent person and does not have more than 2,840.51 euro of gross income (*ils_origrepy*). The tax credit is decreasing in individual gross income (*il_taxable_pertc*) and it is computed according to the following table:

Table 19. Tax credits for dependent family members, amounts per year, 2011-2013

Spouse	
Up to 15,000	$800 - (110 * (il_taxable_pertc / 15,000))$
15,001 – 29,000	690
29,001 – 29,200	700
29,201 – 34,700	710
34,701 – 35,000	720
35,001 – 35,100	710
35,101 – 35,200	700
35,201 – 40,000	690
40,001 – 80,000	$690 * ((80,000 - il_taxable_pertc) / 40,000)$
Child < 3 years old (potential tax credit)	
900	
Child >=3 years old (potential tax credit)	
800	
Others	
$(750 * \text{number of dependent persons}) * ((80,000 - il_taxable_pertc) / 80,000)$	

Source: Agenzia delle Entrate

The potential tax credit for dependent child is increased by 200 euro starting from the first child if there are more than three children.

To compute the final tax credit is necessary to calculate an “increment” given by the number of dependent children minus 1 times 15,000 (*sin09_s*).

Then we need to find the tax credit coefficient, by applying the following formula:

$$(95,000 + \text{Increment (i.e. } sin09_s) - \text{Total income (i.e. } il_taxable_Ypertc)) / (95,000 + \text{Increment (i.e. } sin09_s))$$

The final amount of the tax credit for dependent children (*tintcch_s*) is equal to 0 when the tax credit coefficient is less than or equal to 0 (or equal or larger than 1). If the tax credit coefficient is between 0 and 1, the Tax credit for dependent children is equal to the potential tax credit times the tax credit coefficient

Parents can split the potential tax allowance for dependent children in any proportion (in the simulation the total tax credit is assigned to the parent with higher income in first instance and if she cannot use the full amount of the tax credit the residual is attributed to the partner).

If the head of tax unit is a lone parent and the tax credit for the potential spouse is greater than the tax credit for the oldest child, the difference is given as additional tax credit for lone parent (*tintclp_s*)

From 2013 the tax credits for dependent children are more generous, see the model for details.

Tax credits for families with at least four children

Moreover, an additional tax credit of 1,200 euro is given to families with at least four children (and for the whole year, regardless on when the fourth child was born).

2.6 Other taxes

2.6.1 Personal Income Regional additional tax (Addizionale Regionale all'IRPEF)

The regional additional tax (*Addizionale Regionale*) is computed on the same tax base (*il_taxable_regtax*) as the personal income tax (*IRPEF*). The tax rate is 0.9% but each region can increase it of at most another 0.5%. In the following table we provide the tax rates for each region in the four considered years.

The increases since 2011 are part of the austerity measures package (see Avram et al. 2013).

Taxation is generally graduated, with progressively higher marginal tax rates applying to higher income brackets except where the income brackets are asterisked (*): in that case the tax rate applies to the whole income according to the relevant classes. The simulated tax is stored in the variable *tinrg_s*. Note that the regional additional tax is positive only if the national personal income tax (after tax credits, i.e. *tinna_s*) is positive.

Table 20. Personal income regional additional tax rates, by region, 2011-2014

		2011		2012		2013		2014	
Var. drgn2	Region	Income Brackets	Tax rate %	Income Brackets	Tax rate %	Income Brackets	Tax rate %	Income Brackets	Tax rate %
1	Piemonte	≤15000	1.23	≤15000	1.23	≤15000	1.69	≤15000	1.62
		15000-22000*	1.53	15000-22000*	1.53	15000-28000	1.7	15000-28000	2.13
		≥22000*	1.73	≥22000*	1.73	28000-55000	1.71	28000-55000	2.31
						55000-75000	1.72	55000-75000	2.32
						>75000	1.73	>75000	2.33
2	Valle d'Aosta		1.23		1.23		1.23		1.23
3	Lombardia	≤15493.71	1.23	≤15000	1.23	≤15000	1.23	≤15000	1.23
		15493.7-30987.41	1.63	15000-28000		15000-28000	1.58	15000-28000	1.58
		≥30987.4	1.73	≥28000	1.58	>28000	1.73	>28000	1.73
4	Bolzano	≤15000	0	≤15000	0	≤15000	0	≤15000	0
		15000-70000	1.23**	15000-70000	1.23**	15000-70000	1.23**	15000-70000	1.23**
		≥70000	1.23	≥70000	1.23	≥70000	1.23	≥70000	1.23
5	Trento		1.23		1.23		1.23	≤15000	0.5
								>15000	1.23*
6	Veneto		1.23		1.23		1.23		1.23
7	Friuli Venezia Giulia		1.23		1.23	<15000	0.7	<15000	0.7
						>15000*	1.23	>15000*	1.23
8	Liguria	≤30000	1.23	≤27000	1.23	≤28000	1.23	≤28000	1.23
		≥30000*	1.73***	≥27000*	1.73	≥28000*	1.73	≥28000*	1.73

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9	Emilia Romagna	≤15000 15000-20000* 20000-25000* ≥25000*	1.43 1.53 1.63 1.73	≤15000 15000-20000* 20000-25000* ≥25000*	1.43 1.53 1.63 1.73	≤15000 15000-20000* 20000-25000* ≥25000*	1.43 1.53 1.63 1.73	≤15000 15000-20000* 20000-25000* ≥25000*	1.43 1.53 1.63 1.73
10	Toscana		1.23	≤75000 ≥75000	1.23 1.73	≤15000 15000-28000 28000-55000 55000-75000 >75000	1.42 1.43 1.68 1.72 1.73	≤15000 15000-28000 28000-55000 55000-75000 >75000	1.42 1.43 1.68 1.72 1.73
11	Umbria	≤15000 ≥15000*	1.23 1.43	≤15000 ≥15000*	1.23 1.43	≤15000 ≥15000*	1.23 1.43	≤15000 15000-28000 28000-55000 55000-75000 >75000	1.23 1.63 1.68 1.73 1.83
12	Marche	≤15500 15500 - 31000 ≥31.000	1.23 1.53 1.73	≤15500 15500 - 31000 ≥31.000	1.23 1.53 1.73	<15000 15000-28000 28000-55000 55000-75000 >75000	1.23 1.53 1.70 1.72 1.73	<15000 15000-28000 28000-55000 55000-75000 >75000	1.23 1.53 1.70 1.72 1.73
13	Lazio		1.73		1.73		1.73	<28000 If > 28000 0-15000 >15000	1.73 1.73 1.73 2.33
14	Abruzzo		1.73		1.73		1.73	<15000 15000-28000 >28000	1.54% 1.66% 1.73%
15	Molise		2.03		2.03		2.03	<15000 15000-28000 28000-55000 55000-75000 >75000	2.03% 2.23% 2.43% 2.53% 2.63%

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16	Campania	2.03	2.03	2.03	2.03
17	Puglia	≤28000	1.53	≤28000	1.53
		≥28000	1.73	≥28000	1.73
		<15000	1.33	15000-28000	1.43
		15000-28000	1.43	28000-55000	1.71
		28000-55000	1.71	55000-75000	1.72
18	Basilicata		1.23		1.23
			1.23		1.23
			1.23		1.23
			1.23		1.23
19	Calabria	2.03	2.03	2.03	2.03
20	Sardegna	1.23	1.23	1.23	1.23
21	Sicilia	1.73	1.73	1.73	1.73

Source: Agenzia delle Entrate, various years

* Tax rate applied on the total taxable income if taxable income within the range

** A tax credit of 252 euros is allowed for each dependent child.

*** If more than 4 children, tax rate equal to 1.23%

Table 22. Personal income regional additional tax rates, by region, 2015

Var. drgn2	Region	2015	
		Income Brackets	Tax rate %
1	Piemonte *	≤15000	1.62
		15000-28000	2.13
		28000-55000	2.75
		55000-75000	3.32
		>75000	3.33
2	Valle d'Aosta		1.23
3	Lombardia	≤15000	1.23
		15000-28000	1.58
		28000-55000	1.72
		55000-75000	1.73
		>75000	1.74
4	Bolzano		0
			1.23
		Tax deduction of 20.000 euro for all taxpayers. <i>A tax credit of 252 euros is allowed for each dependent child, if taxpayer has income (including rental income subject to separate taxation) below 70000 euro per year.</i>	
5	Trento	If taxable income < 15000 and pension income positive, tax rate equal to 0	1.23
6	Veneto		1.23
7	Friuli Venezia Giulia	<15000	0.7
		>15000*	1.23
8	Liguria	≤15000	1.23
		15000-28000	1.73
		28.000-55.000	2.31
		55.000-75.000	2.32
		>75000	2.33
9	Emilia Romagna	≤15000	1.33
		15000--28000	1.93
		28000-55000	2.03
		55000-75000	2.23
		≥75000	2.33
10	Toscana	≤15000	1.42
		15000-28000	1.43
		28000-55000	1.68
		55000-75000	1.72
		>75000	1.73
11	Umbria	≤15000	1.23
		15000-28000	1.63
		28000-55000	1.68
		55000-75000	1.73
		>75000	1.83

12	Marche	<15000	1.23
		15000-28000	1.53
		28000-55000	1.70
		55000-75000	1.72
		>75000	1.73
13	Lazio	<35000	1.73
		If > 35000	
		0-15000	1.73
		>15000	3.33
14	Abruzzo		1.73%
15	Molise	<15000	2.03%
		15000-28000	2.23%
		28000-55000	2.43%
		55000-75000	2.53%
		>75000	2.63%
16	Campania		2.03
17	Puglia *	<15000	1.33
		15000-28000	1.43
		28000-55000	1.71
		55000-75000	1.72
		>75000	1.73
18	Basilicata	<55.000	1.23
		55.000-75.000*	1.73
		>75000*	2.33
19	Calabria		1.73
20	Sardegna		1.23
21	Sicilia		1.73

Source: http://www.finanze.it/export/finanze/Per_conoscere_il_fisco/Fiscalita_locale/newaddregirpef/aliquote.htm

* In Piedmont and Puglia the tax credits for dependent children (usually if more than 3 in the family), are increased at regional level, not simulated

2.6.2 Taxation on Capital Income

Capital income is mainly subject to separate taxation. The separate taxation regime is articulated into two different tax rates shown in the table below. Long-term savings is encouraged by applying the lower rate.

In addition private pensions paid out in form of capital, arrears and severance pay are subject to separate taxation as well.

In the 2011 a reform of the taxation of capital incomes changed the tax rates levied on the Interests on bank and postal accounts (from 27% to 20%) and on the Interests on long-term bonds and dividends (from 12.5% to 20%). The exception remains related to the state bonds which are taxed at a lower 12.5% rate. From 1st July 2014 the standard rate increased to 26%.

Source of income (variable name)	Rates (%)		
	2011	2012-2013	2014-2015
Interests on bank and postal accounts (<i>yyitdp</i>)	27.0	20.0	26.0
Interests on State bonds and Postal Bonds (<i>yyitsb</i>)	12.5	12.5	12.5
Interests on long-term bonds - more than 18 months (<i>yyitob</i>)	12.5	20.0	26
Dividends (<i>yydv</i>)	12.5	20.0	26
Interests on Severity Benefit Funds and Private pensions Funds (Not simulated)	11.0	11.0	20
Private pensions paid out in form of capital (<i>ypp01</i>)	26.0	26.0	26.0
Arrears (<i>yempv</i>) and severance pay (<i>yunsv</i>)	26.0	26.0	26.0

Source: Bosi Guerra, various year. The increase of the tax rates from 1st July 2014 is simulated as if it was in place for the whole 2014.

2.6.3 Property tax

In 2009-2011, ICI is simulated (*tprob_s*) on the cadastral value of other buildings (raised by 5% and multiplied by a coefficient equal to 100) with an average tax rate equal to 0.64%.

Starting from fiscal year 2012, the Property Tax has been redesigned. The new tax is the IMU – *Imposta Municipale Propria*. The new tax is due by the same subjects as ICI.

The tax base for buildings registered at the cadastre is the cadastral value (*amriv* and *aobiv*, for main residence and other buildings respectively) raised by 5% and multiplied by a coefficient equal to 160.

Tax rates are different according to the type of building and municipalities can modify them. The baseline rates are: 0.4% for the main residence (*tprmr_s*); 0.76% for other buildings (*tprob_s*). In the case of main residences there is a deduction of 200 euro plus 50 euros for each dependent children aged 26 or less living in the household.

In 2013 the IMU on the main residence has been suspended.

In 2014 the new tax TASI has been applied to the cadastral income of main residences (*amriv*) raised by 5% and multiplied by a coefficient equal to 160. Tax rates are different according to the type of building and municipalities can modify them: in the simulation an average tax rate of 0.0017 has been applied, without considering any tax credit (due to lack of data).

2.6.4 Personal income tax on rental income

Starting from fiscal year 2011, rental incomes can be subject to a withholding tax rate equal to 21% instead of being part of the taxable income (with an exemption of 15% of total rental income). The choice is up to the tax payer.

Due to lack of data, and even if the new tax (“*cedolare secca*”) is more convenient for most of the tax payers, in EUROMOD the rental income is still included in the taxable base for national and regional IRPEF. This choice is made looking at the aggregate tax revenue statistics that show that the majority of taxpayers does not choose the *cedolare secca*.

2.6.5 Bonus “80 euro” (*tintcent_s*)

Since May 2014 a new bonus is given to employees with taxable income below 26.000 euro per year. The bonus has been made definitive since January 2015 and transferred every month, for a maximum total of 960 euro per year.

The maximum amount (i.e. 80 euro per month) is given to employees with a taxable income below 24.000 euro per year and then it is linearly decreasing up to a maximum taxable income of 26.000 euro. The annual amount depends on the number of days worked over the year.

In order to be eligible for the bonus the employees must earn over the year at least 8.173 euro, which is the limit below which the employee does not pay income tax.

DATA

2.1 General description

The Italian database is based on the national version (IT-SILC) of the European Union Statistics on Income and Living Conditions (EU-SILC). This is a rotating panel survey (4 rotational groups), representative of the Italian population in private households. The survey takes place in the second half of the year following the income reference year.

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

The User Data Base on which the EUROMOD database is based upon (ITSILC XUDB 2012 - version March 2014) is delivered by the Italian Institute of Statistics (ISTAT).

More information on technical issues concerning the Italian SILC 2012 can be found in the Intermediate Quality Reports provided by the Italian Institute of Statistics and Eurostat.

Table 24. EUROMOD database description

	Year 2011 (income reference period)
EUROMOD database	IT_2012_a1
Original name	ITSILC XUDB 2012 – 31 March 2014
Provider	ISTAT
Year of collection	2012
Period of collection	2012 Q1 – 2012 Q4 (most in 2012 Q4)
Income reference period	2011
Sampling	2-stage sampling; with stratification of sampling units (no clustering of sampling units)
Unit of assessment	Italian household defined as cohabitants related through marriage, kinship, affinity, adoption, patronage and affection.
Coverage	Private households
Sample size	47,149 individuals 19,579 households
Response rate	85.50%

2.1.1 Weights

The weights provided in the Italian SILC are household weights, imputed for each person in the household. The weights were developed in four steps. The initial weights are the inverse of the inclusion probability of each household. The second step contains a slight correction for non-response both at household and individual level. Later, correction for over/under representation of certain population groups is implemented through calibration taking account of NUTS I-level and NUTS II-level, age, sex, amount of national and non national population. Finally, an integrative calibration is performed to make sure that members in the same household all receive the same weight. The following Table presents some basic descriptive statistics of the Grossing-up weights.

Table 25. Descriptive Statistics of the Grossing-up weights

IT_2012_a1	
Number	47,149
Mean	1283.08
Median	1000.92
Minimum	95.63
Maximum	9916.89
Max/Min	103.70
Decile 1	325.75
Decile 9	2596.18
Dec 9 / Dec1	7.97

2.1.2 Item non-response and under-reporting

An overview of item non-response is provided in the Italian SILC Quality Report.

Concerning under-reporting, the Italian SILC Quality Report makes comparisons between some income target variables and the number of persons who receive income from each ‘income component’, with external sources. In particular, as external benchmarks, they use data from National Accounts and Labour Force Survey by ISTAT, Fiscal Agencies of the Ministry of the Economy and Pensions Register by INPS (National Institute for Social Security). The checked variables are: (i) Employee cash or near cash income (PY010N); (ii) a variable computed as the sum of Old-age benefits (PY100N), Survival benefits (PY110N) and Disability benefits (PY130N). No appreciable differences are found.

2.2 Data adjustment

Adjustments to variables are kept to a minimum. There is some minor data cleaning that is done to make sure that the relationships of individuals within households, are coherent (for example, that both partners identify each other correctly, to rule out inconsistencies in family structure).

2.3 Imputations and assumptions

2.3.1 Time period

All income information in EU-SILC 2012 (as well as in IT-SILC) refers to the fiscal year 2011 (January – December). Monetary amounts in the original variables are normally expressed in yearly totals, unless otherwise is indicated. For most income variables, information is included on how many months a certain income or benefit was received.

For the construction of the EUROMOD database from the Italian SILC, all monetary amounts are re-scaled to “an average month”, dividing yearly amount by 12.

In the EUROMOD database, the information refers as much as possible to the income reference period (i.e. 2011). Different sources of information available in EU-SILC are combined in order to ensure a consistent picture with regard to income sources and non-monetary information such as labour market and socio-economic characteristics. In order of preference:

- Direct information from EU-SILC referring to the income reference period (e.g. monthly labour market information) is being used where possible.
- In addition, information on the income reference period is derived from the current reference period (e.g. education activity, labour market activities).
- If no alternative is available, the current value is taken as the best proxy for the value during the income reference period (e.g. hours usually worked per week)

In this way, we approximate best the general consistency of the personal and household characteristics with the incomes that are reported.

Moreover, all children born after 31 December 2011 are dropped from the dataset.

2.3.2 Gross incomes

Although original data provide both net and gross incomes, we use only net value and reconstruct gross incomes, according to the tax rules in place in 2011, via a microsimulation procedure built upon TABELITA, a microsimulation models developed and maintained at Econpubblica (Ceriani, Fiorio and Gigliarano, 2013).

Because tax evasion is prevalent in particular among self-employed, self-employment income recorded in the survey has been split in two components, assuming that only part of the total income has been declared to the tax authority and then grossed up. A calibration factor has been applied in order to obtain an aggregate amount of the gross self-employment income corresponding to that reported in fiscal data. The user can decide whether running EUROMOD considering such a correction for tax evasion or not (sheet *TCA_it*).

2.3.3 Other imputed variables

Due to lack of information in the IT-SILC 2012 data, the variables *amriv* and *aobiv* (cadastral value of main and secondary residences, respectively) have been imputed by a statistical matching using more detailed information contained in the Survey of Household Income and Wealth released by Bank of Italy. For more details see Ceriani, Fiorio and Gigliarano (2013).

2.4 Updating

To account for any time inconsistencies between the input dataset and the policy year, updating factors are used. Each monetary variable (i.e. each income component) is updated so as to account for changes in the non-simulated variables that have taken place between the year of the data and the year of the simulated tax-benefit system. Updating factors are generally based on changes in the average value of an income component between the year of the data and the policy year.

As a rule, updating factors are provided both for simulated and non simulated income components present in the input dataset. Note however that in the case of simulated variables, the actual simulated amounts are used in the baseline rather than the updated original variables in the dataset. Updating factors for simulated variables are provided so as to facilitate the use of the model in cases when the user wishes to turn off the simulation of a particular variable. The list of updating factors can be found in Table 26.

No other updating adjustments are employed. Thus the distribution of characteristics (such as employment status and demographic variables) as well as the distribution of each non simulated income source remain as they were in 2011.

It is important to note that, as part of the austerity measures package (see Avram et al. 2013, Figari and Fiorio 2015) the public salaries and pensions (above three times the minimum level) are not fully indexed from 2011 on.

The indexation of public pensions follow the institutional rules (uprating by bands and up to some limits) and it is implemented in the policy *uprate_bands_it*. See the model for details.

Table 26. Raw indices for deriving EUROMOD uprating factors

Index	Constant name	Values of the raw indices								
		2007	2008	2009	2010	2011	2012	2013	2014	2015
Harmonized index of consumer prices	\$HICP	104.3	108	108.08	110.06	113.08	117.5	119	119.3	119.02
Salary index, private sector	\$f_yempri	104.3	107.7	111.1	113.8	116.1	118.5	120.01	121.52	122.77
Salary index, public sector	\$f_yempub	105.3	109.6	112.9	114.4	115.2	115.2	115.2	115.2	115.2
Interest rate	\$f_yiy	0.0414	0.0409	0.0218	0.021	0.0361	0.0311	0.0208	0.0135	0.0135
Property income index	\$f_ypr	1.73	1.77	1.81	1.82	1.87	1.94	1.97	1.98	1.98
Cadastral income index	\$f_aobiv	0.4754	0.4778	0.4808	0.4825	0.4958	0.5151	0.5217	0.5231	0.5218
Self-employment income index	\$f_yse	19.15	17.91	17.32	17.78	18.27	18.98	19.22	19.31	19.31
FOI index	\$f_foi	130	134.2	135.2	137.3	141	145.13	146.91	147.25	146.99
Total social assistance fund (x1000)	\$f_bsa	647945	534165	518226	380222	178584	178584	300000	258258	278192
Unemployment benefit threshold, EUR per month	\$f_bun	1014.48	1031.93	1065.26	1073.25	1089.89	1119.32	1152.9	1165.58	1167.91

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Disability benefit threshold, EUR per month	\$f_pdi	710	733.41	755.71	783.6	807.35	827.05	846.16	863.85	880.7
Disability pension contributory threshold, EUR per month	\$f_phl	262.62	267.09	275.64	277.57	282.02	289.36	298.33	301.91	302.53
Old age pension average	\$f_poa_avg	13626	14063	14752	15015	15497	15803	16060	16060	16060
Survivors pension average	\$f_psu_avg	7186	7351	7741	7851	8025	8205	8408	8408	8408
Disability pension average	\$f_pdi_avg	4500	4607	4703	4767	4823	4867	4899	4899	4899

Note: See EUROMOD for detailed sources of each index.

3. VALIDATION

3.1 Aggregate Validation

In this section we present the validation results from our model. First we compare how well the survey represents aggregate data for the main income sources included in the model and not simulated. This is followed by the tables which show how 2011 income data are updated to represent 2012-2015. After that we present the validation of the simulated instruments: income taxes (and its components), social insurance contributions, benefits (Family Allowance and Social Allowance for elderly). We present figures related to both income aggregates and the numbers of receivers or payers (where available). All the results are obtained correcting the self-employment income for tax evasion (see above). Section 3.2 includes distributional statistics, such as income deciles, inequality indices and poverty measures within socio-economic groups.

3.1.1 Non simulated incomes

To check how well the Italian SILC, which is the basis also for EU-SILC, represents actual aggregate data, we compare income components (wages and various benefits) between the survey and administrative source (Agenzia delle Entrate, various years). Aggregate amounts from EUROMOD are obtained using the gross incomes reconstructed by the net-to-gross procedure explained above.

Overall the survey matches quite well the administrative sources, with an overestimation of employment income and unemployment benefits around 10%. The comparison of the property income with external statistics is particularly problematic due to the inclusion of different components in the aggregate statistics (see Notes to the Tables). The comparison of the number of recipients needs to be done with caution because the unit of analysis in the survey and in the administrative statistics are not always strictly comparable. This is, in particular, the case of property income but also self-employment income because the same individual can have more than one source of self-employment income. On the one hand, we would expect aggregate number of recipients of self-employed income from EUROMOD being smaller than in the administrative source, while we get the opposite. On the other hand, the number of individuals with self-employment income from EUROMOD includes also potential tax evaders who do not declare their income to the tax authority at all. This effect seems to prevail.

Table 27. EUROMOD validation: income sources included and not simulated, 2011

	Recipients (unit)			Amount (unit)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employment income and Unemployment benefits	23,582,886	21,409,287	1.10	461,881,620,626	422,904,039,000	1.09
Self-employment income	6,955,803	5,909,345	1.18	100,178,614,231	99,610,987,000	1.01
Property income	30,739,534	20,996,887	1.46	43,173,512,435	38,765,866,516	1.11
Pensions	14,896,795	15,064,435	0.99	238,361,201,573	233,863,552,000	1.02

Notes: Property income in EUROMOD is obtained by the sum of taxable rent (i.e 85% of rent) and cadastral income of main residence and other buildings (imputed due to the lack of info in the original data). Self-employment income corrected for tax evasion. Amounts are expressed in euro per year. Sources: Agenzia delle Entrate, Analysis of Tax Records.

Next we evaluate how well the 2011 income data are updated to represent 2012-2015. Using the uprating factors of monetary values included in the model, we are able to capture quite well the aggregate amounts. The unchanged socio-economic structure of the data (i.e. we do not apply any re-weighting of the data) could be a potential problem in the representation of the aggregate numbers of recipients, in particular in years subject to important changes in the labour market as those affected by the economic crisis. However, it seems that the figures are not affected by substantial changes over the period, with the exception of self-employment income which results to be overestimated in EUROMOD over the period, due to the difficulty of defining accurate uprating factors.

Table 28. EUROMOD validation: income sources included and not simulated, 2012

	Recipients (unit)			Amount (unit)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employment income and Unemployment benefits	23,582,886	21,222,650	1.11	468,567,918,732	425,145,662,000	1.10
Self-employment income	6,955,803	5,564,924	1.25	104,094,307,560	100,852,163,000	1.03
Property income	30,739,534	---	----	44,861,042,085	38,544,693,222	1.16
Pensions	14,896,795	15,130,975	0.98	241,300,399,770	238,810,186,000	1.01

Notes: Property income in EUROMOD is obtained by the sum of taxable rent (i.e 85% of rent) and cadastral income on main residence and other buildings (imputed due to the lack of info in the original data). Self-employment income corrected for tax evasion. Amounts are expressed in euro per year. Sources: Agenzia delle Entrate, Analysis of Tax Records.

Table 29. EUROMOD validation: income sources included and not simulated, 2013

	Recipients (unit)			Amount (unit)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employment income and Unemployment benefits	23,582,886	20,871,131	1.13	473,105,481,576	424,676,074,000	1.11
Self-employment income	6,955,803	5,416,578	1.28	105,423,180,366	103,929,306,000	1.01
Property income	30,739,534	---	----	48,146,680,270	42,611,839,516	1.13
Pensions	14,896,795	14,963,459	1.00	245,005,854,750	243,617,069,000	1.01

Notes: Property income in EUROMOD is obtained by the sum of taxable rent (i.e 85% of rent) and cadastral income on main residence and other buildings (imputed due to the lack of info in the original data). Self-employment income corrected for tax evasion. Amounts are expressed in euro per year. Sources: Dipartimento delle Finanze, Analysis of Tax Records.

Table 30. EUROMOD validation: income sources included and not simulated, 2014

	Recipients (unit)			Amount (unit)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employment income and Unemployment benefits	23,582,886	---	---	476,474,233,876	---	---
Self-employment income	6,955,803	---	---	105,913,405,605	---	---
Property income	30,739,534	---	---	48,322,747,784	---	---
Pensions	14,896,795	---	---	247,126,162,458	---	---

Notes: Property income in EUROMOD is obtained by the sum of taxable rent (i.e 85% of rent) and cadastral income on main residence and other buildings (imputed due to the lack of info in the original data). Self-employment income corrected for tax evasion. Amounts are expressed in euro per year.

Table 31. EUROMOD validation: income sources included and not simulated, 2015

	Recipients (unit)			Amount (unit)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employment income and Unemployment benefits	23,582,886	---	---	479,280,883,572	---	---
Self-employment income	6,955,803	---	---	105,913,405,605	---	---
Property income	30,739,534	---	---	48,269,811,511	---	---
Pensions	14,896,795	---	---	247,749,966,257	---	---

Notes: Property income in EUROMOD is obtained by the sum of taxable rent (i.e 85% of rent) and cadastral income on main residence and other buildings (imputed due to the lack of info in the original data). Self-employment income corrected for tax evasion. Amounts are expressed in euro per year.

3.1.2 Simulated income tax

Income tax revenue (IRPEF) is simulated at about 98-100% level over the different years. The number of tax payers is slightly larger than in administrative sources, but again the caveat about the comparison of the numbers related to taxpayers should be borne in mind.

The validation of each component of the income tax is presented in the tables below.

In the current version of the model, the imputed deductions and tax credits are calibrated to external statistics referring to 2009 and lose a bit of precision over the years given that the calibration coefficient (in EUROMOD) is kept constant. However given their size relative to the total tax revenue they do not affect the results substantially.

The regional additional income tax is overestimated by 3-4%, probably due to the representation of the taxable income in the survey by regions. Over the years considered, it is important to note the increase in the tax revenue collected by the Regional additional income tax in 2011 due to the increase in the tax rates.

In 2012, the decrease in the number of tax payers with positive taxable income is due to the exclusion from it of the cadastral value related to the main residence (included in taxable income and then completely deducted in the previous years) and other residences (replaced by the new Property tax, see below). However, the caveat about the comparison of the numbers related to taxpayers should be borne in mind.

Due to the reform of the taxes on capital income, the revenue from these taxes decreases from 2012.

The revenue from Property tax refers to the tax on other buildings (“ICI seconda casa”) in 2011; to the tax on the main residence (“IMU prima casa”) and on other buildings (“IMU seconda casa”) in 2012, the tax on other buildings (“IMU seconda casa”) in 2013; to the tax on housing services (“TASI” on the main residence) and the tax on other buildings (“IMU seconda casa”) in 2014 and 2015.

Table 32. EUROMOD validation: income taxes, 2011

	Taxpayers (unit)			Revenue (unit)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Total taxable income	43,358,338	40,930,657	1.06	806,932,785,822	800,293,855,000	1.01
Deduction for main residence	28,575,311	---	---	12,395,440,468	12,275,538,516	1.01
Imputed deductions	2,427,008	2,653,718	0.91	1,227,129,711	1,553,423,000	0.79
Total deductions	12,252,928	13,590,840	0.90	23,791,656,301	22,219,662,000	1.07
Net taxable income	39,766,033	40,267,013	0.99	770,745,749,900	772,219,281,000	1.00
Gross tax (IRPEF)	39,663,209	39,334,446	1.01	205,369,587,073	208,215,753,000	0.99
Family tax credits	10,944,571	12,609,445	0.87	12,018,364,978	11,289,654,000	1.06
Tax credits for income sources	36,566,743	36,107,309	1.01	41,911,646,892	41,467,876,000	1.01
Tax credits for mortgage interest (at 19%)	3,322,796	3,846,769	0.86	1,517,349,351	1,235,228,760	1.23
Tax credit for health related expenditures	14,036,191	15,684,283	0.89	2,418,639,841	2,732,762,970	0.89
Tax credit for charitable givings	715,519	862,154	0.83	27,875,545	33,860,850	0.82
Other tax credits	4,182,330	3,409,883	1.23	1,484,301,862	1,776,081,000	0.84
Tax credit on life insurance	5,597,539	6,285,923	0.89	756,832,364	685,404,860	1.10
Tax credit on funeral expenditures	339,776	434,008	0.78	94,430,420	119,873,280	0.79
Tax credit on educational expenditures	1,963,413	2,031,551	0.97	246,905,961	319,894,640	0.77
Tax credits on refurbishment (at 36%)	5,028,512	5,641,161	0.89	2,457,808,153	2,457,789,000	1.00
Total tax credit	35,186,076	38,800,790	0.91	62,934,155,366	62,112,973,000	1.01
Net tax (IRPEF)	31,832,360	31,590,066	1.01	148,903,427,350	152,219,369,000	0.98
Regional additional income tax (IRPEF)	31,707,257	30,634,609	1.04	11,244,698,031	10,958,955,000	1.03
Tax on capital income	15,704,549	---	---	2,363,061,112	---	---
Property tax on other buildings (ICI seconda casa)	---	---	---	5,959,737,673	---	---

Notes: Revenue amounts are expressed in euro per year. Sources: Agenzia delle Entrate, Analysis of Tax Records; Agenzia del Territorio, Gli immobili in Italia (for data on deduction for main residence).

Table 33. EUROMOD validation: income taxes, 2012

	Taxpayers (unit)			Revenue (unit)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Total taxable income	39,287,847	40,530,766	0.97	802,334,140,761	800,371,453,000	1.00
Deduction for main residence	28,575,311	-	-	12,879,912,532	11,438,566,222	1.13
Imputed deductions	2,426,594	2,159,213	1.12	1,227,119,004	1,661,672,000	0.74
Total deductions	12,252,513	10,343,853	1.18	25,561,516,576	23,794,236,000	1.07
Net taxable income	39,289,889	40,062,256	0.98	776,682,760,493	773,562,156,000	1.00
Gross tax (IRPEF)	39,184,236	38,832,732	1.01	207,066,941,071	208,174,885,000	0.99
Family tax credits	10,710,792	12,780,836	0.84	11,686,782,873	11,468,969,000	1.02
Tax credits for income sources	36,558,507	36,563,581	1.00	41,993,000,545	41,642,375,000	1.01
Tax credits for mortgage interest (at 19%)	3,322,796	3,849,283	0.86	1,550,419,218	1,153,767,970	1.34
Tax credit for health related expenditures	13,999,346	16,400,628	0.85	2,242,277,018	2,888,931,570	0.78
Tax credit for charitable givings	715,105	873,590	0.82	27,696,524	32,961,390	0.84
Other tax credits	4,179,205	3,619,127	1.15	1,480,426,340	1,454,679,140	1.02
Tax credit on life insurance	5,588,855	6,027,604	0.93	755,853,146	630,153,050	1.20
Tax credit on funeral expenditures	339,776	457,069	0.74	94,430,420	125,334,450	0.75
Tax credit on educational expenditures	1,927,529	2,042,634	0.94	244,323,253	337,291,420	0.72
Tax credits on refurbishment (at 36%)	5,028,512	6,173,777	0.81	2,553,940,287	2,761,297,000	0.92
Total tax credit	35,101,123	39,129,023	0.90	62,799,394,441	62,984,526,000	1.00
Net tax (IRPEF)	31,257,187	31,216,838	1.00	149,727,600,107	152,270,261,000	0.98
Regional additional income tax (IRPEF)	31,203,154	30,321,649	1.03	11,379,882,123	11,009,521,000	1.03
Tax on capital income	15,704,549	---	---	1,873,036,630	---	---
Property tax on other buildings (ICI seconda casa)	---	---	---	16,410,595,871	---	---

Notes: Revenue amounts are expressed in euro per year. Sources: Agenzia delle Entrate, Analysis of Tax Records; Agenzia del Territorio, Gli immobili in Italia (for data on deduction for main residence).

Table 34. EUROMOD validation: income taxes, 2013

	Taxpayers (unit)			Revenue (unit)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Total taxable income	43,190,779	40,399,823	1.07	827,281,040,550	810,756,719,000	1.02
Deduction for main residence	28,575,311	-	-	13,044,741,627	-	-
Imputed deductions	2,426,594	2,490,122	0.97	1,232,802,567	1,775,895,000	0.69
Total deductions	12,252,513	10,071,034	1.22	26,204,614,345	24,089,696,000	1.09
Net taxable income	39,289,889	39,706,498	0.99	787,938,542,738	777,118,247,000	1.01
Gross tax (IRPEF)	39,183,316	38,732,142	1.01	210,481,226,984	209,525,072,000	1.00
Family tax credits	10,693,281	12,774,407	0.84	13,298,757,467	13,115,038,000	1.01
Tax credits for income sources	36,515,410	36,112,930	1.01	41,643,400,336	40,791,113,000	1.02
Tax credits for mortgage interest (at 19%)	3,322,796	3,760,293	0.88	1,561,221,888	1,032,383,050	1.51
Tax credit for health related expenditures	14,023,740	16,731,808	0.84	2,435,831,182	2,960,352,950	0.82
Tax credit on funeral expenditures	339,776	446,076	0.76	94,430,420	122,214,460	0.77
Tax credit on educational expenditures	1,945,329	1,957,681	0.99	243,580,861	336,045,210	0.72
Tax credits on refurbishment (at 36%)	5,028,512	6,993,020	0.72	2,586,468,730	3,502,828,000	0.74
Total tax credit	35,152,946	38,691,189	0.91	64,168,013,977	64,406,485,000	1.00
Net tax (IRPEF)	31,339,200	31,019,713	1.01	152,098,024,966	152,238,194,000	1.00
Regional additional income tax (IRPEF)	31,285,811	30,135,709	1.04	11,670,653,714	11,178,998,000	1.04
Tax on capital income	15,704,549	---	---	1,252,718,659	---	---
Property tax on other buildings (ICI seconda casa)	---	---	---	16,620,064,676	---	---

Notes: Revenue amounts are expressed in euro per year. Sources: Agenzia delle Entrate, Analysis of Tax Records; Agenzia del Territorio, Gli immobili in Italia (for data on deduction for main residence).

Table 35. EUROMOD validation: income taxes, 2014

	Taxpayers (unit)			Revenue (unit)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Total taxable income	43,190,779	-	---	833,273,191,997	-	---
Deduction for main residence	-	-	---	13,077,417,642	-	---
Imputed deductions	2,426,594	-	---	1,230,913,585	-	---
Total deductions	12,252,513	-	---	26,679,348,914	-	---
Net taxable income	39,289,889	-	---	793,421,969,388	-	---
Gross tax (IRPEF)	39,183,316	-	---	212,130,953,943	-	---
Family tax credits	10,685,807	-	---	13,271,265,888	-	---
Tax credits for income sources	36,493,246	-	---	43,222,880,198	-	---
Tax credits for mortgage interest (at 19%)	3,322,796	-	---	1,563,347,311	-	---
Tax credit for health related expenditures	14,023,740	-	---	2,441,618,083	-	---
Tax credit on funeral expenditures	339,776	-	---	94,430,420	-	---
Tax credit on educational expenditures	1,945,329	-	---	243,317,582	-	---
Tax credits on refurbishment (at 36%)	5,028,512	-	---	2,592,900,846	-	---
Total tax credit	35,152,946	-	---	65,744,876,776	-	---
Net tax (IRPEF)	31,337,231	-	---	152,253,401,942	-	---
Regional additional income tax (IRPEF)	31,283,842	-	---	12,035,369,742	-	---
Tax on capital income	15,704,549	-	---	1,034,676,545	-	---
Property tax on main residence (TASI)	---	-	---	3,734,843,392	-	---
Property tax on other buildings (IMU seconda casa)	---	-	---	16,661,984,278	-	---

Notes: Revenue amounts are expressed in euro per year.

Table 36. EUROMOD validation: income taxes, 2015

	Taxpayers (unit)			Revenue (unit)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Total taxable income	43,190,779	-	---	836,781,092,479	-	---
Deduction for main residence	-	-	---	13,046,502,149	-	---
Imputed deductions	2,426,594	-	---	1,232,500,436	-	---
Total deductions	12,252,513	-	---	27,054,908,834	-	---
Net taxable income	39,289,889	-	---	796,584,200,082	-	---
Gross tax (IRPEF)	39,184,236	-	---	213,139,489,965	-	---
Family tax credits	10,682,244	-	---	13,250,342,771	-	---
Tax credits for income sources	36,478,931	-	---	43,109,677,761	-	---
Tax credits for mortgage interest (at 19%)	3,322,796	-	---	1,561,364,476	-	---
Tax credit for health related expenditures	14,023,740	-	---	2,444,534,533	-	---
Tax credit on funeral expenditures	339,776	-	---	94,430,420	-	---
Tax credit on educational expenditures	1,943,279	-	---	243,412,364	-	---
Tax credits on refurbishment (at 36%)	5,028,512	-	---	2,586,939,054	-	---
Total tax credit	35,150,896	-	---	65,614,848,351	-	---
Net tax (IRPEF)	31,380,215	-	---	153,358,219,172	-	---
Regional additional income tax (IRPEF)	31,246,212	-	---	12,328,343,152	-	---
Tax on capital income	15,704,549	-	---	1,034,676,545	-	---
Property tax on main residence (TASI)	---	-	---	3,726,524,797	-	---
Property tax on other buildings (IMU seconda casa)	---	-	---	16,622,897,657	-	---

Notes: Revenue amounts are expressed in euro per year.

3.1.3 Simulated social contributions

Due to lack of external data we are not able to validate the number of individuals paying social insurance contributions. We simulate quite well self-employed SICs while we over-simulate the employee SICs and under simulate the employer SIC. One potential reason is that we apply the minimum contribution on an annual basis, but we lack important information to simulate the minimum correctly (a user can decide to simulate the minimum contribution on a monthly basis by simply switching on and off the relevant functions already implemented in EUROMOD).

Table 37. EUROMOD validation: social contributions, 2011

	Contributors (unit)			Revenue (unit)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employer SICs	18,612,992	---	---	138,888,763,815	166,768,000,000	0.83
Employee SICs	18,599,358	---	---	47,322,074,629	39,745,000,000	1.19
Self employment SICs	6,955,803	---	---	18,262,067,400	17,823,853,000	1.02

Notes: Revenue amounts are expressed in euro per year. Sources: MEF, *I conti della Protezione Sociale* - Tabella 6 and Agenzia delle Entrate, Analysis of Tax Records.

Table 38. EUROMOD validation: social contributions, 2012

	Contributors (unit)			Revenue (unit)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employer SICs	18,612,992	---	---	140,943,400,830	164,078,000,000	0.86
Employee SICs	18,599,358	---	---	48,035,516,279	39,370,000,000	1.22
Self employment SICs	6,955,803	---	---	19,968,040,063	19,062,322,000	1.05

Notes: Revenue amounts are expressed in euro per year. Sources: MEF, *I conti della Protezione Sociale* - Tabella 6 and Agenzia delle Entrate, Analysis of Tax Records.

Table 39. EUROMOD validation: social contributions, 2013

	Contributors (unit)			Revenue (unit)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employer SICs	18,612,992	---	---	142,293,722,571	162,219,000,000	0.88
Employee SICs	18,599,358	---	---	48,487,607,626	41,631,000,000	1.16
Self employment SICs	6,955,803	---	---	20,568,971,662	18,906,653,000	1.09

Notes: Revenue amounts are expressed in euro per year. Sources: MEF, *I conti della Protezione Sociale* - Tabella 6 and Agenzia delle Entrate, Analysis of Tax Records.

Table 40. EUROMOD validation: social contributions, 2014

	Contributors (unit)			Revenue (unit)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employer SICs	18,612,992	---	---	143,591,731,722	---	---
Employee SICs	18,599,358	---	---	49,086,709,574	---	---
Self employment SICs	6,955,803	---	---	21,012,624,758	---	---

Notes: Revenue amounts are expressed in euro per year.

Table 41. EUROMOD validation: social contributions, 2015

	Contributors (unit)			Revenue (unit)		
	EUROMOD	External source	Ratio	EUROMOD	External source	Ratio
Employer SICs	18,612,992	---	---	144,749,849,795	---	---
Employee SICs	18,599,358	---	---	49,246,235,281	---	---
Self employment SICs	6,955,803	---	---	21,360,828,202	---	---

Notes: Revenue amounts are expressed in euro per year.

3.1.4 Social benefits

The Family Allowances and the Social Allowance for elderly are the only benefits simulated in EUROMOD.

There are no information on the number of recipients in external statistics.

The simulated aggregates match quite well the external statistics from ISTAT. However, the caveat mentioned above about the simulation of the two benefits need to be borne in mind. In particular, comparing the simulated amount of the Family Allowances with the one recorded in the survey, it can emerge a mismatch of families receiving the benefits with a likely greater impact on poverty reduction of the simulated Family Allowances.

The social benefits included and not simulated match quite well the external statistics with the exception of the Supplementation wage scheme (CIG) that results to be underestimated due to massive use of this scheme to support firms affected by the economic crisis from 2011 (data year) on. The underestimation of the Supplementation wage scheme (and the overestimation of employment income) needs to be born in mind in the interpretation of the figures related to income distribution presented below.

Table 42. EUROMOD validation: benefits, 2011

	Recipients	Expenditure (euro)		
	(unit)	EUROMOD	External source	Ratio
	EUROMOD	EUROMOD	External source	Ratio
<i>Included</i>				
Old age pension and early retirement	11,313,829	184,327,646,293	197,952,000,000	0.93
Sickness and invalidity pension	4,436,904	28,308,634,247	31,622,000,000	0.90
Survivor pension	4,436,549	39,455,682,712	41,558,000,000	0.95
Unemployment	2,342,490	8,276,700,939	8,488,000,000	0.98
Supplementation wage scheme	713,316	2,119,185,743	2,996,000,000	0.71
Severance pay	4,253,761	21,409,991,686	27,059,000,000	0.79
Other allowances - assistance	1,175,663	2,845,194,032	3,232,000,000	0.88
<i>Simulated</i>				
Family allowances	6,797,126	6,308,370,815	6,428,000,000	0.98
Social pension	1,189,506	4,312,878,779	4,160,000,000	1.04
<i>Data variable</i>				
Family allowances	6,704,096	5,896,285,474	6,428,000,000	0.92
Social pension	809,874	3,866,532,821	4,160,000,000	0.93

Sources: ISTAT, *Conti della protezione sociale*

Table 43. EUROMOD validation: benefits, 2012

	Recipients	Expenditure (euro)		
	(unit)	EUROMOD	External source	Ratio
	EUROMOD	EUROMOD	External source	Ratio
<i>Included</i>				
Old age pension and early retirement	11,313,829	186,062,379,135	202,617,000,000	0.92
Sickness and invalidity pension	4,436,904	29,023,066,168	31,607,000,000	0.92
Survivor pension	4,436,549	40,280,747,433	42,080,000,000	0.96
Unemployment	2,342,490	8,500,192,512	9,557,000,000	0.89
Supplementation wage scheme	713,316	2,176,409,830	3,410,000,000	0.64
Severance pay	4,253,761	22,246,836,617	26,333,000,000	0.84
Other allowances - assistance	1,175,663	2,922,997,174	2,654,000,000	1.10
<i>Simulated</i>				
Family allowances	6,865,610	6,381,133,496	6,580,000,000	0.97
Social pension	1,190,705	4,433,893,081	4,284,000,000	1.03
<i>Data variable</i>				
Family allowances	6,704,096	6,126,764,565	6,580,000,000	0.93
Social pension	809,874	4,017,664,615	4,284,000,000	0.94

Sources: ISTAT, *Conti della protezione sociale*.

Table 44. EUROMOD validation: benefits, 2013

	Recipients (unit)		Expenditure (euro)		Ratio
	EUROMOD	EUROMOD	External source		
<i>Included</i>					
Old age pension and early retirement	11,313,829	188,304,079,206	208,669,000,000		0.90
Sickness and invalidity pension	4,436,904	29,811,776,383	28,423,000,000		1.05
Survivor pension	4,436,549	41,280,833,280	42,351,000,000		0.97
Unemployment	2,342,490	8,755,195,001	11,309,000,000		0.77
Supplementation wage scheme	713,316	2,241,702,075	3,841,000,000		0.58
Severance pay	4,253,761	22,530,853,812	25,184,000,000		0.89
Other allowances - assistance	1,175,663	3,530,538,123	3,657,000,000		0.97
<i>Simulated</i>					
Family allowances	6,975,061	6,517,108,900	6,310,000,000		1.03
Social pension	1,195,087	4,564,795,411	4,393,000,000		1.04
<i>Data variable</i>					
Family allowances	6,704,096	6,204,954,659	6,310,000,000		0.98
Social pension	809,874	4,068,958,431	4,393,000,000		0.93

Sources: ISTAT, *Conti della protezione sociale*

Table 45. EUROMOD validation: benefits, 2014

	Recipients (unit)		Expenditure (euro)		Ratio
	EUROMOD	EUROMOD	External source		
<i>Included</i>					
Old age pension and early retirement	11,313,829	189,810,699,247	---	---	
Sickness and invalidity pension	4,436,904	30,297,678,100	---	---	
Survivor pension	4,436,549	41,709,469,623	---	---	
Unemployment	2,342,490	8,851,498,833	---	---	
Supplementation wage scheme	713,316	2,266,355,553	---	---	
Severance pay	4,253,761	22,587,648,931	---	---	
Other allowances - assistance	1,175,663	3,336,031,353	---	---	
<i>Simulated</i>					
Family allowances	6,993,735	6,540,341,917	---	---	
Social pension	1,202,783	4,654,746,604	---	---	
<i>Data variable</i>					
Family allowances	6,704,096	6,220,712,436	---	---	
Social pension	809,874	4,079,216,940	---	---	

Sources: External data not available yet.

Table 46. EUROMOD validation: benefits, 2015

	Recipients	Expenditure (euro)		
	(unit)	EUROMOD	External source	Ratio
<i>Included</i>				
Old age pension and early retirement	11,313,829	190,281,874,312	---	---
Sickness and invalidity pension	4,436,904	30,616,372,012	---	---
Survivor pension	4,436,549	41,830,040,620	---	---
Unemployment	2,342,490	8,869,189,198	---	---
Supplementation wage scheme	713,316	2,270,887,233	---	---
Severance pay	4,253,761	22,534,629,852	---	---
Other allowances - assistance	1,175,663	3,426,489,941	---	---
<i>Simulated</i>				
Family allowances	7,003,573	6,516,922,775	---	---
Social pension	1,202,783	4,663,799,094	---	---
<i>Data variable</i>				
Family allowances	6,704,096	6,206,019,625	---	---
Social pension	809,874	4,069,616,155	---	---

Sources: External data not available yet.

3.2 Income distribution

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

For 2011, we compare our results with statistics based on the Italian version of SILC data (same sample of EUROMOD data).

3.2.1 Poverty

The overall relative poverty rate is well simulated by EUROMOD with respect to SILC. The differences are a bit larger with lower poverty lines. Without considering any change in the structure of the population, there is a slight decline in the poverty rates over the five years considered.

Table 47. EUROMOD validation: poverty rates at different poverty lines, 2011

Percentage of individuals below:	EUROMOD	SILC	Ratio
All			
40%	0.07	0.08	0.96
50%	0.11	0.12	0.94
60%	0.19	0.19	0.98
70%	0.27	0.27	0.99
Children (<= 18)			
40%	0.12	0.12	0.98
50%	0.17	0.17	0.97
60%	0.25	0.26	0.97
70%	0.35	0.35	1.00
Elderly (>=65)			
40%	0.02	0.03	0.76
50%	0.05	0.07	0.71
60%	0.16	0.16	0.96
70%	0.24	0.25	0.98
Females			
40%	0.08	0.08	0.97
50%	0.12	0.13	0.94
60%	0.20	0.21	0.98
70%	0.28	0.28	0.99
Males			
40%	0.07	0.07	0.95
50%	0.11	0.11	0.94
60%	0.18	0.18	0.98
70%	0.25	0.25	1.00

Notes: Computed for individuals according to their household disposable income (HDI) equivalised by the “modified OECD” equivalence scale. HDI are calculated as the sum of all income sources of all household members net of income tax and social insurance contributions.

Table 48. EUROMOD validation: poverty rates at different poverty lines, 2012 – 2015

Percentage of individuals below:		EUROMOD			
		2012	2013	2014	2015
All					
	40%	0.07	0.07	0.07	0.07
	50%	0.11	0.11	0.11	0.11
	60%	0.18	0.18	0.18	0.18
	70%	0.26	0.26	0.26	0.26
Children (<= 18)					
	40%	0.11	0.11	0.11	0.11
	50%	0.17	0.16	0.16	0.16
	60%	0.25	0.24	0.24	0.24
	70%	0.35	0.34	0.34	0.33
Elderly (>=65)					
	40%	0.02	0.02	0.02	0.02
	50%	0.05	0.05	0.05	0.06
	60%	0.15	0.14	0.15	0.16
	70%	0.25	0.24	0.25	0.25
Females					
	40%	0.07	0.07	0.07	0.07
	50%	0.12	0.12	0.12	0.12
	60%	0.20	0.19	0.19	0.19
	70%	0.28	0.27	0.27	0.27
Males					
	40%	0.07	0.07	0.07	0.07
	50%	0.11	0.11	0.11	0.11
	60%	0.17	0.17	0.17	0.17
	70%	0.25	0.24	0.24	0.24

Notes: Computed for individuals according to their household disposable income (HDI) equivalised by the “modified OECD” equivalence scale. HDI are calculated as the sum of all income sources of all household members net of income tax and social insurance contributions.

3.2.2 Income inequality

Tables below show the main inequality indices from EUROMOD and SILC. First of all, the Gini index for Original Income is reported from EUROMOD: it is around 0.52 in the five years considered. Gini coefficient of disposable income is slightly overestimated in EUROMOD. Comparison of disposable equivalised income (median) at different income deciles shows that we slightly undersimulate the median equivalised income. Without considering any change in the structure of the population, there is a slight decline in the inequality over the five years considered.

Table 49. EUROMOD validation: income inequality, 2011

	EUROMOD	SILC	Ratio
Gini Coefficient Original Income	0.520	---	---
Gini Coefficient Disposable Income	0.330	0.319	1.035
Median income per decile			
1	430.49	425.78	1.01
2	718.61	727.75	0.99
3	891.94	906.61	0.98
4	1064.51	1089.22	0.98
5	1230.51	1255.24	0.98
6	1395.09	1438.00	0.97
7	1588.56	1623.96	0.98
8	1826.71	1874.25	0.97
9	2183.93	2254.78	0.97
10	3126.70	3168.33	0.99
Mean income (unequalised)	1055.55	1049.32	1.01
Mean income (equalised)	1525.23	1520.74	1.00
Median income (equalised)	1310.66	1337.47	0.98

Notes: Computed for individuals according to their household disposable income (HDI) equalised by the “modified OECD” equivalence scale. With the exception of the first line, all figures refer to disposable income.

Table 50. EUROMOD validation: income inequality, 2012-2015

EUROMOD validation: income inequality, 2009 - 2013	EUROMOD			
	2012	2013	2014	2015
Gini Coefficient Original Income	0.520	0.521	0.522	0.521
Gini Coefficient Disposable Income	0.328	0.326	0.323	0.321
Median income per decile				
1	437.19	447.53	446.67	455.15
2	725.71	741.33	749.45	757.75
3	898.42	919.97	927.35	938.32
4	1066.29	1087.07	1099.55	1112.54
5	1232.00	1255.13	1271.23	1282.06
6	1399.40	1418.21	1437.06	1452.22
7	1586.18	1602.28	1624.84	1643.53
8	1823.51	1841.64	1856.77	1875.51
9	2172.77	2188.51	2205.94	2223.93
10	3095.45	3113.71	3115.37	3123.87
Mean income (unequalised)	1054.58	1068.23	1075.85	1083.62
Mean income (equalised)	1524.39	1544.01	1556.19	1568.01
Median income (equalised)	1312.41	1333.82	1352.81	1367.32

Notes: Computed for individuals according to their household disposable income (HDI) equalised by the “modified OECD” equivalence scale. With the exception of the first line, all figures refer to disposable income.

3.3 Summary of “health warnings”

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

- The correction of self-employment income for tax evasion is made by a coefficient proportional to the net self-employment income declared in the data. The user can decide to switch off such a correction in the *TCA_it* policy sheet.
- The simulation of the property tax is based on an imputed value of cadastral income for main and other residences, derived using information on the possession of residences, the imputed rent, other information included in the Survey of Household Income and Wealth (Bank of Italy) aggregated by decile groups, and finally calibrating the total amount of cadastral income according to the information provided in the official sources.
- The simulation of Family Allowances is subject to limitations related to the lack of information on disability status, income and family composition in the income reference period (which is the solar year before the 1st of July of each year, and it remains valid until the 30th of June of the following year). Therefore, for example, for the period between the 1st of July 2012 and the 30th of June 2013, income produced in 2011 is taken into account. For the simulation of the benefit, we assume the family income to stay constant in two consecutive years and we use the income thresholds as of 1st July (instead of 30th June).

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APPENDIX: POLICY EFFECTS

Table A1-A4 and Figure A1-A4 show the effect of policy changes in each year with respect to the previous year (e.g. 2011-2012, 2012-2013, ...) on mean equivalised household disposable income by income component and income decile group, as a percentage of mean equivalised household disposable income in the starting year. Each policy system has been applied to the same input data, deflating monetary parameters of the new year (i.e. 2012 for the analysis of the policy effects 2011-2012) policies by Eurostat's Harmonized Index of Consumer Prices (HICP).

For detailed analysis see Figari and Fiorio (2015).

2011-2012

The most relevant measures implemented in 2012, in terms of budgetary effects and hence distributional impact, concerned the new property tax (i.e. IMU) on main and other residences (blue bars in Figure A1). Please note that under "direct taxes" are reported all other changes to income taxes but these do not have a major impact. Cuts and limitations to the indexation of public pensions are shown in the brown bars. Please note that cuts and limitations to the indexation of public sector salaries are not captured here).

In addition, other policies include: a re-modulation of tax rates on income from capital, the increase in the social contributions rates paid by temporary workers and self-employed (orange bars in Figure A1), the increase in the regional personal income tax surcharge and a solidarity contribution equal to 3% of taxable income for those with income above 300.000 euro per year.

Changes to the VAT rates (main VAT rate from 20 per cent to 21 per cent in 2012 and then to 22 per cent in 2013) are not included in this analysis.

2012-2013

The main policy implemented in 2013 is the abolition of the property tax on the main residence which contributed to a lower tax burden (blue bars in Figure A1). Other changes to direct taxes include an increase in the tax credits for dependent children. The indexation of the public pensions up to three times the minimum amount has been more generous than the previous year, notwithstanding a CPI in 2013 lower than in 2012, resulting in a positive effect in particular at the bottom of the distribution (brown bars in Figure A1). The social assistance programmes have been slightly more generous benefitting the families at the bottom of the income distribution (green bars in Figure A1).

2013-2014

As shown in Table A3 and Figure A3, in the period 2013-14 the overall net effect of direct taxes on disposable income is the net effect of three policies contributing in opposite directions. In 2014 a new tax on the main residence (i.e. TASI) has been introduced; taxes on income from capital (excluding interests on sovereign debt) increased from 20% to 26%; at the same time a new "bonus" of at most 80 euro per month for employees with taxable income between 8.000 euro and 26.000 euro per year has been given since May (and the tax credit for employees have been slightly increased). The net effect (blue bars in Figure A3) is positive for all individuals with the exception of those in the bottom decile group because they are likely to be not entitled to the "bonus" (i.e. if they do not have taxable income of at least 8000 euro per year, meaning that they do not pay any income tax at all). Partial indexation of the public pensions up to three

times the minimum amount and a very low CPI in 2014 (closed to 0.25%) contributed to a positive effect of public pensions (brown bars in Figure A3).

2014-2015

In 2015 the “bonus” of 80 euro per month for employees has been extended to cover the whole year resulting in a more generous transfer than the previous year. As part of means-tested benefits, families with a new born child whose income is below a family-specific threshold are entitled for three years to a new bonus of 80 euro per month. Public pensions up to three times the minimum amount have been indexed at a level higher than the observed CPI contributing to a positive effect of public pensions (brown bars in Figure A4).

Table A1: Policy effects in 2011-2012, using the CPI-indexation, %

Decile	Original income	Public pensions	Means-tested benefits	Non means-tested benefits	Employee SIC	Self-employed SIC	Direct taxes	Disposable income
1	0.00	-0.26	-0.28	-0.07	0.02	-0.24	-1.46	-2.31
2	0.00	-0.47	-0.24	-0.03	0.01	-0.14	-1.30	-2.18
3	0.00	-0.64	-0.18	-0.04	0.01	-0.12	-1.12	-2.09
4	0.00	-0.68	-0.11	-0.02	0.02	-0.10	-1.43	-2.33
5	0.00	-0.82	-0.07	-0.02	0.01	-0.11	-1.47	-2.47
6	0.00	-0.81	-0.04	-0.02	0.01	-0.11	-1.55	-2.53
7	0.00	-0.78	-0.03	-0.02	0.01	-0.10	-1.64	-2.56
8	0.00	-0.79	-0.02	-0.01	0.01	-0.11	-1.67	-2.59
9	0.00	-0.83	-0.01	-0.01	0.01	-0.11	-1.92	-2.88
10	-0.14	-0.78	0.00	-0.01	0.01	-0.17	-1.74	-2.83
Total	-0.04	-0.75	-0.06	-0.02	0.01	-0.13	-1.62	-2.60

Notes: shown as a percentage change in mean equivalised household disposable income by income component and income decile group. Income decile groups are based on equivalised household disposable income in 2011, using the modified OECD equivalence scale. Each policy system has been applied to the same input data, deflating monetary parameters of 2012 policies by Eurostat's Harmonized Index of Consumer Prices (HICP).

Figure A1: Policy effects in 2011-2012, using the CPI-indexation, %

Table A2: Policy effects in 2012-2013, using the CPI-indexation, %

Decile	Original income	Public pensions	Means-tested benefits	Non means-tested benefits	Employee SIC	Self-employed SIC	Direct taxes	Disposable income
1	0.00	0.31	0.38	0.11	-0.01	-0.09	0.87	1.56
2	0.00	0.53	0.21	0.05	-0.01	-0.05	0.58	1.32
3	0.00	0.39	0.12	0.05	0.00	-0.04	0.58	1.09
4	0.00	0.34	0.08	0.03	0.00	-0.04	0.49	0.91
5	0.00	0.26	0.12	0.03	0.00	-0.04	0.50	0.87
6	0.00	0.16	0.05	0.03	0.00	-0.04	0.45	0.64
7	0.00	0.09	0.02	0.03	0.00	-0.03	0.39	0.49
8	0.00	0.02	0.09	0.02	0.00	-0.04	0.35	0.44
9	0.00	-0.08	0.07	0.02	0.00	-0.04	0.32	0.29
10	0.13	-0.14	0.03	0.01	-0.01	-0.06	0.13	0.09
Total	0.03	0.08	0.08	0.03	0.00	-0.05	0.36	0.53

Notes: shown as a percentage change in mean equivalised household disposable income by income component and income decile group. Income decile groups are based on equivalised household disposable income in 2012, using the modified OECD equivalence scale. Each policy system has been applied to the same input data, deflating monetary parameters of 2013 policies by Eurostat’s Harmonized Index of Consumer Prices (HICP).

Figure A2: Policy effects in 2012-2013, using the CPI-indexation, %

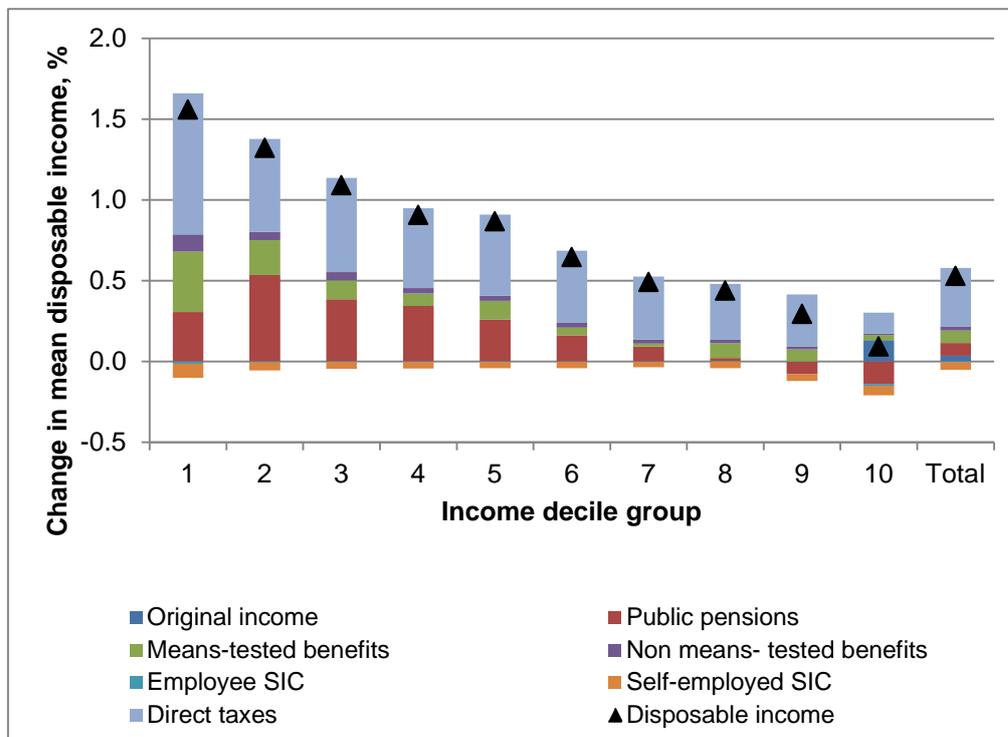


Table A3: Policy effects in 2013-2014, using the CPI-indexation, %

Decile	Original income	Public pensions	Means-tested benefits	Non means-tested benefits	Employee SIC	Self-employed SIC	Direct taxes	Disposable income
1	0.00	0.20	-0.06	0.05	-0.02	-0.09	-0.19	-0.10
2	0.00	0.31	-0.01	0.02	-0.02	-0.05	0.58	0.84
3	0.00	0.32	-0.01	0.03	-0.02	-0.04	0.74	1.03
4	0.00	0.32	0.01	0.02	-0.01	-0.04	0.74	1.04
5	0.00	0.34	0.00	0.02	-0.02	-0.04	0.69	1.00
6	0.00	0.28	0.01	0.02	-0.02	-0.04	0.84	1.09
7	0.00	0.25	-0.02	0.01	-0.02	-0.04	0.77	0.96
8	0.00	0.22	0.00	0.01	-0.03	-0.04	0.50	0.66
9	0.00	0.17	-0.03	0.01	-0.03	-0.04	0.17	0.24
10	0.00	0.05	-0.02	0.01	-0.07	-0.06	-0.23	-0.33
Total	0.00	0.20	-0.01	0.01	-0.04	-0.05	0.36	0.48

Notes: shown as a percentage change in mean equivalised household disposable income by income component and income decile group. Income decile groups are based on equivalised household disposable income in 2013, using the modified OECD equivalence scale. Each policy system has been applied to the same input data, deflating monetary parameters of 2014 policies by Eurostat’s Harmonized Index of Consumer Prices (HICP).

Figure A3: Policy effects in 2013-2014, using the CPI-indexation, %

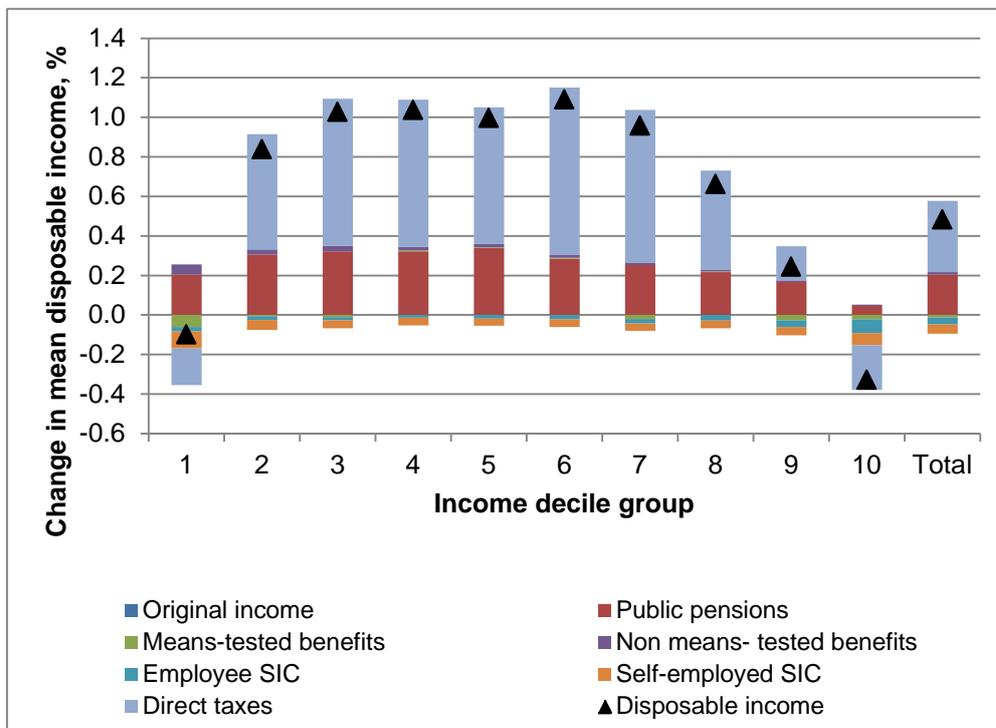


Table A4: Policy effects in 2014-2015, using the CPI-indexation, %

Decile	Original income	Public pensions	Means-tested benefits	Non means-tested benefits	Employee SIC	Self-employed SIC	Direct taxes	Disposable income
1	0.00	0.18	0.62	0.03	0.00	-0.09	0.40	1.13
2	0.00	0.21	0.27	0.01	0.00	-0.05	0.55	1.00
3	0.00	0.22	0.16	0.01	0.00	-0.04	0.57	0.93
4	0.00	0.24	0.12	0.01	0.00	-0.04	0.54	0.87
5	0.00	0.26	0.11	0.01	0.00	-0.04	0.54	0.87
6	0.00	0.22	0.13	0.01	0.00	-0.04	0.60	0.92
7	0.00	0.19	0.07	0.01	0.01	-0.03	0.56	0.80
8	0.00	0.17	0.04	0.01	0.01	-0.04	0.44	0.62
9	0.00	0.15	0.04	0.00	0.01	-0.04	0.29	0.45
10	0.00	0.11	0.01	0.00	0.03	-0.06	-0.03	0.06
Total	0.00	0.18	0.09	0.01	0.01	-0.05	0.35	0.59

Notes: shown as a percentage change in mean equivalised household disposable income by income component and income decile group. Income decile groups are based on equivalised household disposable income in 2014, using the modified OECD equivalence scale. Each policy system has been applied to the same input data, deflating monetary parameters of 2015 policies by Eurostat’s Harmonized Index of Consumer Prices (HICP).

Figure A4: Policy effects in 2014-2015, using the CPI-indexation, %

