

# **EUROMOD**

## **COUNTRY REPORT**



# **PORTUGAL (PT)**

## **2016 - 2019**

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**EUROMOD version I2.0**



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 covers the 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.

The European Commission is in the process of taking over responsibility for carrying out the annual update and release of EUROMOD. The transfer of responsibility is expected to be complete by the end of 2020 and the transition is being facilitated by close cooperation between the University of Essex and the Joint Research Centre (JRC) of the European Commission as well as Eurostat.

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

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The results presented in this report are derived using EUROMOD version I2.0. 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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## 1. BASIC INFORMATION

### 1.1 Basic information regarding the tax-benefit system

- The Portuguese tax-benefit system is a **single national system**. However, the autonomous regions (Azores and Madeira) have lower income tax rates.
- **Fiscal year** matches the calendar year (*i.e.*, January 1<sup>st</sup> to December 31<sup>st</sup>). Changes to the tax system generally take place in January, whereas changes in benefits can occur throughout the year.
- In 2015, the **legal retirement age** was 66 (both for men and for women). Notwithstanding, since 2016, the legal retirement age started to vary according to the evolution of life expectancy at the age at 65, during the 2<sup>nd</sup> and 3<sup>rd</sup> years prior to the date of the pension. It is given the option of retiring later with a pension bonus to workers that are already in the legal retirement age or have already exceeded it.
- For tax purposes, **dependent children** are children with 18 years old or less, or those under 25 years old that have a monthly income below the national minimum wage and attend – or successfully completed – 11<sup>th</sup> or 12<sup>th</sup> school year during the relevant fiscal year.
- For benefits and tax credit purposes, **single parents** are parents of resident dependent children who are not cohabiting with a partner of the opposite sex. For tax purposes, single parents are parents of resident dependent children who are not married.
- To compute the **income tax base**, the tax rate is applied to the half of the aggregate income, and then the resulting tax liability is multiplied by two to obtain couple's total tax liability. Some income components, like capital income, are taxed at source and may be left out of the final tax calculations.
- Taxpayers need to fill an **annual tax return**, since some differences between the withholdings at source and the exact tax liability can exist.
- The **means-tested component** relies on different time scales to assess income: entitlement to a means-tested benefit can depend on the income of the previous year, the previous month or even the current income, depending on the specific benefit.
- The majority of benefits and pensions are indexed to the **Social Support Index** (SSI), which is updated every year according to the real GDP growth and CPI variation. In 2019, SSI was €135.76.

### 1.2 Social benefits

**National Minimum Wage** (*'Retribuição Mínima Mensal Garantida'*): although not truly a social benefit, minimum wage guarantees, by law, a minimum remuneration to full-time workers. In 2019, the amount was €600.

**Unemployment benefits** (*'Subsídio de desemprego'*): unemployment insurance and unemployment assistance (social benefit) are the two main policies that provide financial compensation to the unemployed. The assistance benefit acts as an extension of the first one or as the only benefit for shorter warranty periods. Both benefits are means-tested and restricted to participants in the employees' social insurance scheme. The insurance benefit is related to earnings. A new benefit for long-term unemployed was implemented in 2016 (not simulated in EUROMOD, due to the lack of relevant information in the database).

**Old age contributory pension** (*'Pensão de velhice'*): pension to all the elderly (over 66 years old and 2 months in 2016 and one additional month for each year after) that contributed to the compulsory

social insurance scheme (both employees and self-employed workers). The amount is a function of the average monthly earnings adjusted over the person's entire insurance life, up to a maximum of 40 years.

**Old age social pension ('*Pensão social de velhice*')**: non-contributory means-tested pension that provides a minimum pension to low income elderly individuals at the legal age of retirement (66 years and 5 months in 2019).

**Minimum pension ('*Pensão mínima*')**: new pensioners entitled to an old age or disability pension who have contributed to the compulsory social insurance scheme are entitled to a minimum pension, of different amounts according to the career length. In the case of old age pensions, this safety net is only provided for those who retire at the legal age of retirement or later.

**Survivors' pension ('*Pensão de sobrevivência*')**: granted to the surviving spouse (with at least 35 years old) of a deceased insured person, or to the divorced surviving spouse if the latter was receiving alimony payments. It can also be granted to children until they have 18 years old (25 or 27 if they are studying – higher education) or, when there are no surviving children or spouses, to the dependent parents. There is also a non-earnings-related survivors' pension ('*Pensão de viuvez*' for widows and '*Pensão de orfandade*' for orphans). Not simulated in EUROMOD.

**Disability benefit/pension ('*Pensão de invalidez*')**: any worker under the legal retirement age who becomes unable to earn more than one third of his standard wage due to illness or a work-related accident not covered by health and safety legislation is entitled to this benefit. There is also a non-earnings-related disability benefit ('*Pensão social de invalidez*') for pensioners who were not able to fulfil the minimum career for the main benefit (but only until September 2017, after that it was replaced by the new disability benefit – the Social Benefit for the Inclusion). Not simulated in EUROMOD.

**Social Benefit for the Inclusion ('*Prestação Social para a Inclusão*')**: benefit created in October 2017 for disabled and handicapped people. Replaced the non-earnings-related disability benefit and '*Subsídio Mensal Vitalício*' (another handicapped/disability related benefit). Covers recipients with at least a 60% of disability. Since October 2018, it includes a supplement (means-tested) for poor handicapped people, and in 2019, it is expected to include a bonus to support certain expenses. Not simulated in EUROMOD.

**Sickness cash benefit ('*Subsídio de doença*')**: available to all insured employees as part of the compulsory social insurance scheme. Benefits are earnings-related. Not simulated in EUROMOD.

**Solidarity supplement for the elderly ('*Complemento Solidário para Idosos*')**: non-contributory means-tested benefit to help pensioners who have reached the legal age of retirement and live on low incomes. It considers a wide range of income sources which are not usually considered in this kind of schemes, like the monetary income of the recipients' descendants (even when they don't live with their parents), or residence in an old age care institution funded by the Social Security.

**Social integration income ('*Rendimento Social de Inserção*')**: cash benefit granted together with an integration contract. Aims to ensure that individuals and their family members have sufficient resources to cover their basic needs, while promoting their gradual social and professional integration.

**Child benefits ('*Abono de família para crianças e jovens*')**: social policy targeted to families with children and young people, as a compensation for their expenditure on educating. Belongs to the same group as funeral expenses allowances or special benefits paid to disabled and dependent people, essentially children. Even though it is means-tested, child benefits have a more universal nature than the other policies that rely on income testing.

**Prenatal family allowance ('*Abono de família pré-natal*')**: allowance assigned for 6 months to pregnant women starting from the 13<sup>th</sup> week of gestation, to encourage motherhood by compensating the costs increase during this period. Not simulated in EUROMOD.

**Parental allowance** (*‘Subsídio parental’*): allowance paid to the mother and/or father to replace the ‘lost’ work income during the period of childbirth leave. Parents need to have record of remunerations in Social Security. This allowance comprises several modalities (which have different concession periods): initial parental allowance, mother’s initial parental allowance, parent’s original parental allowance, and initial parental allowance of one parent in the event of the impossibility of the other. The daily amount of the allowance is calculated by applying a percentage to the value of the beneficiary’s reference remuneration. It is available an extended parental allowance. Not simulated in EUROMOD.

**Parental social allowance** (*‘Subsídio social parental’*): alongside the parental allowance, this is the main policy that provide financial compensation to the parents of a born child. This allowance is paid to the parents who are not qualify for the parental allowance. Not simulated in EUROMOD.

Besides the ones previously mentioned, there are other less important benefits (or specific bonus or complements to the main benefits) in the Portuguese social security system, which provide protection in areas like disability, death, or social inclusion.

It is also worth mentioning that, after august 2010, following the debt crisis, Portuguese authorities implemented a set of **austerity measures** with significant repercussions on social benefits. Notwithstanding, from the end of 2015, Portuguese Government has taken measures to improve families’ income, raising particularly the income levels of economically vulnerable families, by strengthening social support.

### 1.3 Social contributions

**Employee and employer social security contributions** (*‘Contribuições do trabalhador por conta de outrem e da entidade patronal’*): contributions are shared between employees (23.75%) and employers (11%). There are several different regimes reflecting specific occupations such as non-profit organizations, rural workers, football players, clergy, domestic services, young people in their first job, or disabled people.

**Self-employed social security contributions** (*‘Contribuições dos trabalhadores independentes’*): from 2011 to 2018, self-employed workers paid a flat rate of 29.6% upon a reference income. Since 2019, the rate changed to 21.4% over the actual income.

**Civil servants’ contributions**: workers that entered the Civil Service before 2006 belong to a separate social security scheme. From January 1<sup>st</sup> of 2006, new civil servants (and their employer institutions) contribute to the regular Social Security scheme and follow the general regime rules.

### 1.4 Taxes

**Personal income tax** (*‘Imposto sobre o Rendimento das Pessoas Singulares’, IRS*): paid by residents in Portugal and by non-residents receiving income in Portugal. If the resident is part of a family unit composed by spouse and dependents, the tax is applied to all the family members. Capital income is taxed at source (withholdings) and may be left out of the final tax calculations, meaning that a different tax rate can be applied. Labour income is also taxed at source, but it is re-evaluated at the annual tax calculations stage.

**Corporate income tax** (*‘Imposto sobre o Rendimento das Pessoas Coletivas’, IRC*): paid by companies on their profits at a flat rate of 21%. There is also a local government levy (*‘Derrama’*).

**Property transfer municipal tax** (*‘Imposto Municipal sobre as Transmissões Onerosas de Imóveis’, IMT*): local government tax on real estate transactions.

**Property municipal tax** (*‘Imposto Municipal sobre Imóveis’, IMI*): local government tax on rural and urban properties. In 2017, a new extension (*AIMI*) was created for highly valued real estates, which provides funding for the Social Security Financial Stabilisation Fund.

**Value Added Tax** (*‘Imposto sobre o Valor Acrescentado’, IVA*): general rate was set at 20% between July 2008 and June 2010, 21% between July and December 2010 and, finally, 23% since January 2011. Lower rates apply to specific classes of goods and in the autonomous regions of Azores and Madeira.

Special taxes on consumption include **alcohol duty/tax** (*‘Imposto sobre o Álcool e as Bebidas Alcoólicas’, IABA*), **fuel duty/tax** (*‘Imposto sobre Produtos Petrolíferos e Energéticos’, ISP*) and **tobacco duty/tax** (*‘Imposto sobre o Tabaco’, IT*).

Taxes on vehicles include the sales tax over new cars (*‘Imposto Sobre Veículos’, ISV*) and the annual **vehicles tax** (*‘Imposto Único de Circulação’, IUC*).

Besides the ones previously mentioned, there are other less important taxes in the Portuguese tax system.



## 2. SIMULATION OF TAXES AND BENEFITS IN EUROMOD

### 2.1 Scope of simulation

**Table 2.1 Simulation of benefits in EUROMOD**

|  | Variable name(s) | Treatment in EUROMOD |      |      |      | Why it is not fully simulated?   |
|--|------------------|----------------------|------|------|------|--|
|  |                  | 2016                 | 2017 | 2018 | 2019 |  |
| Old age contributory pension                           | poact_s          | PS                   | PS   | PS   | PS   | No data on contributory career (years, amount of contributions). Simulation of the minimum pension only.   |
| Old age social pension                                 | poanc_s          | PS                   | PS   | PS   | PS   | No data on contributory career (years, amount of contributions). Split of the original microdata aggregated variable related to old age pensions only.   |
| Survivors pension                                      | psu              | I                    | I    | I    | I    | No data on the loss of family members.   |
| Disability benefit                                     | pdi              | I                    | I    | I    | I    | No data on disability incidence.   |
| Sickness cash benefit                                  | bhl              | I                    | I    | I    | I    | No data on sick leave incidence  |
| Child benefit  | bch_s            | S                    | S    | S    | S    |  |
| Other family benefits                                  | bfa              | I                    | I    | I    | I    | Composed of several benefits impossible to split and simulate, including maternity cash benefits.  |
| Prenatal family allowance                              | bmapr_s          | S                    | S    | S    | S    | However, the simulation is switched off in the baseline, i.e. non-simulated components (bfa) are used.   |
| Parental allowance                                     | bplct_s          | S                    | S    | S    | S    | However, the simulation is switched off in the baseline, i.e. non-simulated components (bfa) are used.   |
| Parental social allowance                              | bplnc_s          | S                    | S    | S    | S    | However, the simulation is switched off in the baseline, i.e. non-simulated components (bfa) are used.   |
| Solidarity supplement for the elderly                  | bsaoa_s          | PS                   | PS   | PS   | PS   | No data on the descendants of beneficiaries that do not live in the same household. No data on residence in social security funded institutions. Difficulty in dealing with non-take up issue. |
| Social integration income                              | bsa00_s          | PS                   | PS   | PS   | PS   | Difficulty in matching the simulated family unit with the actual one. Difficulty in dealing with non-take up issue.  |
| Other social assistance benefits                       | bsaot            | I                    | I    | I    | I    | Composed of several benefits impossible to split and simulate.   |
| Education benefit                                      | bed              | I                    | I    | I    | I    | Composed of several benefits impossible to split and simulate.   |
| Housing benefit  | bho              | I                    | I    | I    | I    | Composed of several benefits impossible to split and simulate.   |
| Unemployment benefit (contributory) <sup>(1)</sup>     | bunct_s          | PS                   | PS   | PS   | PS   | No data on the reason for becoming unemployed (voluntary or compulsory?). Split of the original aggregated variable only.  |
| Unemployment benefit (non-contributory) <sup>(1)</sup> | bunnc_s          | PS                   | PS   | PS   | PS   | No data on the reason for becoming unemployed (voluntary or compulsory?). No data on benefits history. Split of the original aggregated variable only.   |

Note: “**I**” included in the micro-data but not simulated; “**PS**” partially simulated as some of its applicable rules are not simulated; “**S**” simulated, although some minor or very specific rules may not be simulated.

<sup>(1)</sup> Unemployment insurance and assistance benefits are partially simulated as not all required information (e.g. unemployment record) is available in SILC data. Benefit recipients are imputed using information of the reported receipt of the respective benefit in SILC data. Therefore, simulations are conditional on the report of the benefit receipt in the microdata.

**Table 2.2 Simulation of taxes and social contributions in EUROMOD**

|   | Variable name(s) | Treatment in EUROMOD |      |      |      | Why it is not fully simulated?  |
|---|------------------|----------------------|------|------|------|---|
|   |                  | 2016                 | 2017 | 2018 | 2019 |   |
| Personal income tax                         | tin_s            | PS                   | PS   | PS   | PS   | Influenced by individual choices. No data available on some of the tax allowances (particularly health, one of the most important). |
| Property transfer municipal tax             |                  | E                    | E    | E    | E    |   |
| Property municipal tax                      |                  | E                    | E    | E    | E    |   |
| Value added tax                             |                  | E                    | E    | E    | E    |   |
| Employee social insurance contribution      | tscee_s          | S                    | S    | S    | S    | General rules assumed.  |
| Employer social insurance contribution      | tscer_s          | S                    | S    | S    | S    | General rules assumed.  |
| Self-employed social insurance contribution | tscse_s          | PS                   | PS   | PS   | PS   | General rules assumed. Significantly influenced by individual choices.  |

Notes: “**E**” *excluded* from the model’s scope, as it is neither included in the microdata nor simulated by EUROMOD; “**PS**” *partially simulated* as some of its applicable rules are not simulated; “**S**” *simulated*, although some minor or very specific rules may not be simulated.

### 2.1.1 Structural changes in 2016

**Old age contributory and social pension:** minimum age rose to 66 years and 2 months.

**Unemployment benefit (assistance):** introduction of a new benefit for long-term unemployed (not simulated in EUROMOD).

**Child benefits:** increase in the benefit amount by 3.5%, 2.5% and 2% in the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> income bracket amounts, respectively (since February 2016); further increase by 0.5% in the 2<sup>nd</sup> and 3<sup>rd</sup> income bracket amounts (since April 2016); increase of 15p.p. in the bonus for single parent families; increase by 3% in the bonus for handicapped children.

**Social integration income:** change to the OECD equivalence scale. Indexation to the Social Support Index changed to 43.173%. Resulting amount: €180.99/month.

**Solidarity supplement for the elderly:** minimum age rose to 66 years and 2 months. Increase in the reference amount from €4,909 to €5,059/year.

**Personal income tax:** rules for the quotient were reverted to the scheme in place in 2014 (e.g., family quotient was suspended).

### 2.1.2 Structural changes in 2017

**Child benefits:** a new age bracket was created for ages between 12 and 36 months. The 4<sup>th</sup> income bracket was reinstated for children aged up to 36 months.

**Pensions and civil servants' wages cuts:** reductions on pensions and wages implemented during the adjustment period were fully extinguished.

**Social Support Index:** the SSI was updated to €21.32 (previous amount: €19.22).

### 2.1.3 Structural changes in 2018

**Child benefits:** the gradual changes introduced in 2017 continued (amount paid to children aged between 12 and 36 months increased). The amount paid in the 4<sup>th</sup> bracket increased extraordinarily to converge with the 2011 level.

**Personal Income Tax:** income brackets were segmented, creating two new ones (2<sup>nd</sup> and 4<sup>th</sup>).

**Extraordinary surtax on income:** ceased to be applied.

**Social Support Index:** the SSI was updated again, to €28.90 (previous amount: €21.32).

### 2.1.4 Structural changes in 2019

**Social Support Index:** the SSI was updated again, to €35.76 (previous amount: €28.90).

**Old age contributory and social pension:** minimum age rose to 66 years and 5 months. The social pension base amount was updated to €10.32 (previous amount: €07.01).

**Child benefits:** extension of the 4<sup>th</sup> income bracket age (fixed amount of €38.31 will be paid until the child is 6 years old). Amount paid to children aged between 12 and 36 months is increased.

**Solidarity supplement for the elderly:** minimum age rose to 66 years and 5 months. Increase in the reference amount from €1,175.82 to €2,258.63/year.

**Social integration income:** increase in the reference amount from €86.68 to €89.66/month.

**Self-employed social insurance contributions:** self-employed scheme has undergone several changes. Base of incidence is now the actual income (instead of a conventional income based on brackets). The regular contribution rate is now 21.4% (previous amount: 29.6%).

## 2.2 Order of simulation and interdependencies

The following table shows the benefits and taxes simulated by EUROMOD for the years of 2016-2019. As there were only a few structural changes in the Portuguese tax-benefit system during this period, the order by which the policies are simulated remains unchanged.

Essentially, the simulation order results from policies' interdependence, as the income simulated by some policies is then taken as an input by others. For example, the minimum wage and minimum pension policies are simulated first, as their outcomes are employment and pension's income, which will be used by subsequent policies. Unemployment benefits should be simulated next, as all inputs required are now available (either from the original data or simulated) and its output (unemployment benefit income) will be used after. Then parental leave benefits are simulated<sup>1</sup> as their income tests include unemployment benefits and pensions. Afterwards, a second run of the unemployment benefits takes place in order to limit the benefit duration for those individuals on parental leave, i.e. unemployment benefits are suspended while being on maternity or paternity leave. Child benefits comes next, although it is not used in later policies, and therefore its ordering becomes irrelevant.

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<sup>1</sup> Even though their simulation is switched off in the baseline. See section 2.3 and the corresponding policies' descriptions for more information.

Following are the taxes and contribution policies and, finally, the minimum means-tested schemes and social integration income (although the order is now irrelevant).

Table 2.3 EUROMOD spine: order of simulation, 2016-2019

| Policy           | 2016   | 2017   | 2018   | 2019   |  |
|------------------|--------|--------|--------|--------|--|
| SetDefault_pt    | on     | on     | on     | on     | DEF: DEFAULT VALUES FOR VARIABLES  |
| uprate_pt        | on     | on     | on     | on     | DEF: UPRATING FACTORS  |
| Uprate_bands_pt  | on     | on     | on     | on     | DEF: UPRATING IN BANDS: PENSIONS   |
| ConstDef_pt      | on     | on     | on     | on     | DEF: CONSTANTS   |
| ilsdef_pt        | on     | on     | on     | on     | DEF: STANDARDISED INCOME LISTS   |
| ilsUDBdef_pt     | on     | on     | on     | on     | DEF: UDB-RELATED STANDARDISED INCOME LISTS   |
| tundef_pt        | on     | on     | on     | on     | DEF: ASSESSMENT UNITS  |
| InitVars_pt      | on     | on     | on     | on     | DEF: Initialise variables  |
| random_pt        | on     | on     | on     | on     | DEF: Random assignment for bsaoa_s   |
| yem_pt           | switch | switch | switch | switch | INC: Minimum wage ('salário mínimo')   |
| yempb_pt         | on     | n/a    | n/a    | n/a    | INC: Public sector wage cuts   |
| poacm_pt         | off    | off    | off    | off    | BEN: Minimum pension ('pensão mínima')   |
| pcuts_pt         | on     | n/a    | n/a    | n/a    | INC: Pensions cuts and solidarity contributions  |
| neg_pt           | on     | on     | on     | on     | DEF: Recode negative self-employment income to zero  |
| bunct_pt         | on     | on     | on     | on     | BEN: Unemployment insurance ('subsídio de desemprego'). Partially simulated                                      |
| bunnc_pt         | on     | on     | on     | on     | BEN: Unemployment assistance ('subsídio social de desemprego'). Partially simulated                              |
| buncm_pt         | on     | on     | on     | on     | BEN: Unemployment benefit bonus  |
| poanc_pt         | on     | on     | on     | on     | BEN: Old age social pension ('pensão social de velhice')   |
| bmapr_pt         | switch | switch | switch | switch | BEN: Prenatal family allowance ("Abono de família pré-natal")  |
| bplct_pt         | switch | switch | switch | switch | BEN: Parental allowance ("Subsídio parental")  |
| bplnc_pt         | switch | switch | switch | switch | BEN: Parental social allowance (Subsídio social parental")   |
| bunct_pt         | switch | switch | switch | switch | BEN: Unemployment insurance (Subsídio de desemprego) PART- SIMULATED (repetition of policy with order 16)        |
| bunnc_pt         | switch | switch | switch | switch | BEN: Unemployment assistance (subsídio social de desemprego) PART-SIMULATED (repetition of policy with order 17) |
| buncm_pt         | switch | switch | switch | switch | BEN: Unemployment benefit bonus (repetition of policy with order 18)   |
| bch_pt           | on     | on     | on     | on     | BEN: Family benefit ('abono de família para crianças e jovens')  |
| tscee_pt         | on     | on     | on     | on     | SIC: Employee social insurance contributions   |
| tscer_pt         | on     | on     | on     | on     | SIC: Employer social insurance contributions   |
| tscse_pt         | on     | on     | on     | on     | SIC: Self-employed social insurance contributions  |
| tin00_pt         | on     | on     | on     | on     | TAX: Progressive personal income tax   |
| tiniy_pt         | on     | on     | on     | on     | TAX: Income tax on capital income  |
| bsaoa_pt         | on     | on     | on     | on     | BEN: Solidarity supplement for older persons ('Complemento Solidário para Idosos')                               |
| bsa00_pt         | on     | on     | on     | on     | BEN: Social integration income ('Rendimento Social de Inserção')   |
| output_std_pt    | on     | on     | on     | on     | DEF: STANDARD OUTPUT INDIVIDUAL LEVEL  |
| output_std_hh_pt | off    | off    | off    | off    | DEF: STANDARD OUTPUT HOUSEHOLD LEVEL   |

### 2.3 Policy extensions

There are four extensions included in the Portuguese model:

- **Up-rating by Average Adjustment (UAA)**, allowing the user to choose between uprating (non-simulated) public pensions based on the growth in average amounts (if extension is on) or by using statutory indexation rules (if extension is off). The default for the baselines is off.
- **Minimum Wage Adjustment (MWA)**, allowing the user to switch on/off the minimum wage simulation. The default for the baselines is off.
- **Full Year Adjustments (FYA)**. While EUROMOD usually simulates policies as of June 30<sup>th</sup> of the respective year, it is also possible to simulate within-year policy changes. This extension was important because in 2012 the reform in the Social Integration Income was introduced in August. It is now switched off in the baseline scenario.
- **Parental Benefits Extension (PBE)**, allowing the user to choose between the observed (non-simulated) parental leave benefits (extension off) or the simulated ones (extension on). The default for the baselines is off.

Apart from the abovementioned extensions, there is one policy that is **turned off** in the baseline: ‘**minimum pensions**’ (poacm\_pt). The underlying EU-SILC data seems to prevent the simulation of this policy.

### 2.4 Social benefits

#### 2.4.1 Unemployment benefit: insurance (*bunct\_s*)

The unemployment benefits cannot be fully simulated in EUROMOD, as there is no information on the reason why people became unemployed (voluntary or compulsory), nor on the duration of the most recent jobs. These constraints apply to the main unemployment benefit – called contributory or insurance unemployment benefit – and to the social unemployment benefit (see next section), also referred to as non-contributory benefit (although there was some limited contribution) or assistance unemployment benefit.

Nonetheless, a split of the original variable in the database (*bun*) can be simulated by observing some of the occurrences more easily associated with the latter kind of benefit (see next section for a more detailed description of the splitting process).

- **Definition**

The unit of analysis is the individual. There are no benefit units (*i.e.* the units are single), and no income test.

- **Eligibility conditions**

- Have been fired (exclusively by decision of the employer) after working for at least 360 days over the previous 24 months (insurance period). It excludes self-employment.
- Actively looking for work.

- **Benefit amount**

- Reference remuneration: wages’ average of the first 12 of the 14 months before the firing date.

- Amount: 65% of the reference remuneration. Lower bound: SSI, unless amount is higher than that remuneration. Upper bound: 2.5 x SSI.
- Bonus of 10% for couples with children if both partners claim insurance or assistance unemployment benefit.

For claims after April 2012, after six months the benefit amount was reduced by 10% (even if it becomes lower than the lower bound). From June 2017, the decrease cannot result in an amount lower than the lower bound, except in the cases where the amount was already lower than it. In 2018, this reduction was eliminated.

- ***Unemployment benefit for chairmen and self-employed***

Chairmen and self-employed may also be entitled to an unemployment benefit, under specific rules (not simulated in EUROMOD).

**Table 2.4 Characteristics of the unemployment insurance benefit**

|                             |                               | 2016  | 2017-2019                          |            |
|-----------------------------|-------------------------------|---|------------------------------------|------------|
| <b>Eligibility</b>          | Contribution period           | 1 year out of the last 2  | No changes                         |            |
|                             | Other conditions              | Have been fired & listed on the unemployment register (actively looking for work)   | No changes                         |            |
|                             | Eligibility of self-employed* | Yes (under specific rules)  | No changes                         |            |
| <b>Payment</b>              | Contribution base             | Wages' average of the first 12 of the 14 months before the firing date              | No changes                         |            |
|                             | Basic amount                  | 65% of the contribution base  | No changes                         |            |
|                             | Additional amount             | 10% bonus for couples with children if both partners claim any unemployment benefit | No changes                         |            |
|                             | Floor                         | SSI   | No changes                         |            |
|                             | Ceiling                       | 2.5 x SSI   | No changes                         |            |
| <b>Duration (in months)</b> | Up to 29 years old            | Up to 14 months   | 5 months                           | No changes |
|                             |                               | 15-23   | 7 months                           | No changes |
|                             |                               | 24+   | 11 months                          | No changes |
|                             |                               | Bonus   | 30 days for every 5 years employed | No changes |
|                             | 30-39 years old               | Up to 14 months   | 6 months                           | No changes |
|                             |                               | 15-23   | 11 months                          | No changes |
|                             |                               | 24+   | 14 months                          | No changes |
|                             |                               | Bonus   | 30 days for every 5 years employed | No changes |
|                             | 40-49 years old               | Up to 14 months   | 7 months                           | No changes |
|                             |                               | 15-23   | 12 months                          | No changes |
|                             |                               | 24+   | 18 months                          | No changes |
|                             |                               | Bonus   | 45 days for every 5 years employed | No changes |
|                             | 50+ years old                 | Up to 14 months   | 9 months                           | No changes |
|                             |                               | 15-23   | 16 months                          | No changes |
|                             |                               | 24+   | 18 months                          | No changes |
|                             |                               | Bonus   | 60 days for every 5 years employed | No changes |
|                             | <b>Subject to</b>             | Taxes   | No                                 | No changes |
|                             |                               | SIC   | No                                 | No changes |

\* Not simulated in EUROMOD.

#### 2.4.2 Unemployment benefit: assistance (*bunnc\_s*)

As mentioned above, the unemployment benefits cannot be fully simulated, but it is possible to simulate a split of the original unemployment benefit variable (*bun*) into assistance/social and insurance/contributory related variables (*bunnc\_s* and *bunct\_s*, respectively).

Since April 2016, a new benefit was created to address the long-term unemployed. Previous recipients of the means-tested social unemployment benefit who are unemployed six months (one year before 2018) after the end of the benefit and still fulfil the remaining conditions are entitled to a new six-month benefit amounting 80% of the previous one. This benefit is not simulated in EUROMOD.

- **Definition**

Either this benefit is granted as an initial benefit to claimants who have not worked long enough to claim the main unemployment benefit, or as an extension to those who cease to be entitled to the main unemployment benefit (as long as they meet the additional conditions listed below).



Unlike the main benefit, the social benefit considers both individual and family units. Family units are defined as:

- The individual;
- His/her partner;
- Any dependent children (those below 18 years old).

• **Eligibility conditions**

- For the ‘initial benefit modality’: Have been fired (exclusively by decision of the employer) after working for at least 180 days over the previous 12 months (insurance period). It excludes self-employment.
- For the ‘extended modality’: Having ended the main assistance unemployment benefit.
- For the long-term unemployed: Previous recipients of the means-tested social unemployment benefit who are still unemployed six months (one year before 2018) after the end of the benefit and still fulfil the remaining conditions.
- Actively looking for work.

• **Income test**

The family unit equivalent income must be less than 80% of the SSI. The equivalent income is defined by total income after applying the following equivalence scale:

- Recipient – 1
- Every other adult (18+) – 0.7
- Every under-18 – 0.5

**Table 2.5 Unemployment benefit (assistance): assessed income**

| Variable | Label  |
|----------|--|
| yem      | INCOME: Employment   |
| yse      | INCOME: Self-employment  |
| poact_s  | BENEFIT/PENSION: Old age: contributory                         |
| poanc_s  | BENEFIT/PENSION: Old age: non-contributory (simulated)         |
| psu      | BENEFIT/PENSION: Survivors                                     |
| pdi      | BENEFIT/PENSION: Disability                                    |
| bed      | BENEFIT/PENSION: Education                                     |
| ypp      | INCOME: Private pension  |
| ypr      | INCOME: Property   |
| ypt      | INCOME: Private transfers received                             |
| yyi      | INCOME: Investment   |
| bho      | BENEFIT/PENSION: Housing (new from August 2010) <sup>(1)</sup> |

<sup>(1)</sup> For non-monetary housing benefits (benefits in kind), the maximum amount of rent subsidy is considered, in progressive terms along the duration of the unemployment benefit. Impossible to simulate in EUROMOD.

Specific rules regarding investment and property income (impossible to simulate in EUROMOD):

- Financial assets: If 5% of the total financial assets is higher than the yearly investment income declared, that will be the amount considered. The family’s total financial assets amount must be lower than 240 x SSI.

- Property assets: If 5% of the total estate assets is higher than the yearly property income declared, that will be the amount considered. Total estate assets must not include the house where the household lives permanently, at least until the amount of 600 x SSI.

- **Benefit amount**

- Amount: 80% of the SSI for individuals in a single benefit unit and 100% of the SSI if the benefit unit size is larger than one.
- Bonus of 10% for couples with children if both partners claim insurance or assistance unemployment benefit.
- Amount of the long-term unemployed benefit: 80% of the previous one.

- **Benefit's length**

‘Initial modality’: Same as for the unemployment insurance benefit.

‘Extended modality’: if age at the end of the insurance benefit is below 40 years old, the length is half of that benefit’s length. Otherwise, it is the same as the ‘initial modality’.

- **Split**

The original splitting of the unemployment benefit variable (*bun*) into two variables, namely the ones respecting to the unemployment contributory benefit (*bunct*) and the unemployment non-contributory benefit (*bunnc*), was made through the EU-SILC variables py092g and py091g, respectively.

**Table 2.6 Characteristics of the unemployment assistance benefit**

|                             |                              | 2016  | 2017-2019  |
|-----------------------------|------------------------------|---|------------|
| <b>Eligibility</b>          | Contribution period          | 180 days over the last year (“ <i>initial modality</i> ”)<br><b>OR</b><br>having ended the main unemployment benefit (“ <i>extended modality</i> ”)<br>Family unit equivalent income < 80% of the SSI | No changes |
|                             | Other conditions             | <b>&amp;</b><br>actively looking for work)  | No changes |
|                             | Eligibility of self-employed | No  | No changes |
|                             | Contribution base            | n/a   | No changes |
| <b>Payment</b>              | Basic amount                 | 80% of the SSI for single benefit units<br><b>OR</b><br>100% of the SSI for larger benefit units  | No changes |
|                             | Additional amount            | 10% bonus for couples with children if both partners claim any unemployment benefit   | No changes |
|                             | Floor                        | No  | No changes |
|                             | Ceiling                      | No  | No changes |
| <b>Duration (in months)</b> | Standard                     | <i>Initial modality</i> : same as for the insurance unemployment benefit  | No changes |
|                             | Special cases                | <i>Extended modality</i> : if < 40 years old, the length is half of that benefit’s length. Otherwise, it’s the same as the “ <i>initial modality</i> ”  | No changes |
| <b>Subject to</b>           | Taxes                        | No  | No changes |
|                             | SIC                          | No  | No changes |

### 2.4.3 Minimum pension (*poacm\_s*)

The simulation of the old age contributory pensions is not achievable using the available microdata, due to the lack of information on several attributes. However, it is possible to simulate the non-

contributory pensions and, with some degree of simplification, the level of minimum pensions. Furthermore, this methodology offers the possibility of ‘correcting’ the original data regarding the low declared old age pension income.

**EUROMOD note:** this policy is switched off (*i.e.*, not executed) in the baseline, due to its underestimating effect on elderly poverty.

- **Definition**

The unit of analysis is the individual.

- **Eligibility conditions**

Minimum pensions are guaranteed to individuals with past contributions that retire at legal age or later and have a statutory pension amount lower than the minimum that the pensioner is entitled.

- **Benefit amount**

Minimum pensions are composed by two parts: the statutory pension and the ‘social supplement’ (difference between the statutory and the minimum amount). The former is financed by the social security budget, while the latter is financed by the state budget. The minimum value is fixed each year and varies with the pensioners’ working career length. In the simulation, the variable *liwwh* (work history, in months) is used as a proxy to the working career length. Thus, every old age contributory pension (*poact*) in the database is ‘corrected’ accordingly to the following grid:

**Table 2.7 Old age contributory pension: minimum values, 2016-2019 (monthly, in €)**

| Career length      | 2016   | 2017   | 2018   | 2019   |
|--------------------|--------|--------|--------|--------|
| Less than 15 years | 263.00 | 264.32 | 269.08 | 273.39 |
| 15 to 20 years     | 275.89 | 277.27 | 282.26 | 286.78 |
| 21 to 30 years     | 304.44 | 305.96 | 311.47 | 316.45 |
| More than 30 years | 380.56 | 382.46 | 389.34 | 395.57 |

The 2007 reform brought in a new rule for the automatic **update of pensions**, in line with inflation and GDP growth. In 2016, every pension amounting up to 1.5 x SSI was updated by 0.4% and every other amount remained frozen (only in that year). In 2017, 2018 and 2019, pensions amounting up to 2 x SSI were updated by 0.5%, 1.8% and 1.6%, respectively.

#### 2.4.4 Old age social pension (*poanc\_s*)

- **Definition**

The recipient is the individual, although if living with a partner, the income of the couple is considered in the income test.

- **Eligibility conditions**

Minimum age: 66 years old and 2 months in 2016, 66 years old and 3 months in 2017, 66 years and 4 months in 2018, and 66 years and 5 months in 2019.

- **Income test**

- Single recipient: monthly gross income up to 40% of the SSI.

- Couple: monthly gross income up to 60% of the SSI.

The framework of the old age social pension is unclear regarding which types of income should be included in the means-test evaluation, but they should include, at least:

**Table 2.8 Old age social pension assessed income**

| Variable | Label                                  |
|----------|--|
| yem      | INCOME: Employment                     |
| yse      | INCOME: Self-employment                |
| bun      | BENEFIT/PENSION: Unemployment          |
| poact_s  | BENEFIT/PENSION: Old age: contributory |
| psu      | BENEFIT/PENSION: Survivors             |
| pdi      | BENEFIT/PENSION: Disability            |
| bed      | BENEFIT/PENSION: Education             |
| ypp      | INCOME: Private pension                |
| ypr      | INCOME: Property                       |
| bsaot    | Other social assistance benefits       |
| bho      | BENEFIT/PENSION: Housing               |
| yy       | INCOME: Investment                     |
| yot      | INCOME: Other                          |

Important rule to consider while simulating the old age social pension (especially when testing couples): although the social pension itself (of the partner, in this case) amounts to the total couple income, it should be considered only its base value. So, for example, Extraordinary Solidarity Supplement should not be included.

- **Benefit amount**

The monthly amount of the old age social pension was €10.32 in 2019. Notwithstanding, besides that amount, every recipient receives an Extraordinary Solidarity Supplement (*Complemento Extraordinário de Solidariedade*), that differs according to their age (€8.31 for those aged between 65 to 69 years old, and €6.60 for those with more than 70 years old).

**Table 2.9 Old age social pension amounts, 2016-2019 (monthly, in €)**

|                                     | 2016          |               | 2017          |               | 2018          |               | 2019          |               |
|-------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                                     | 65-69         | 70+           | 65-69         | 70+           | 65-69         | 70+           | 65-69         | 70+           |
| Old age social pension base amount  | 202.34        |               | 203.35        |               | 207.01        |               | 210.32        |               |
| Extraordinary solidarity supplement | 17.61         | 35.20         | 17.70         | 35.38         | 18.02         | 36.02         | 18.31         | 36.60         |
| <b>Sum</b>                          | <b>219.95</b> | <b>237.54</b> | <b>221.05</b> | <b>238.73</b> | <b>225.03</b> | <b>243.03</b> | <b>228.63</b> | <b>246.92</b> |

These amounts are paid on a monthly basis and there is a 13<sup>th</sup> (in July) and 14<sup>th</sup> (in December) extra payment in the same amounts. In 2017, the 14<sup>th</sup> payment was 50% distributed evenly by the 12 months, while the remaining 50% were paid in December. But in 2018 it was again fully paid in December.

- **Split**

The original EU-SILC py102g, py103g and py104g variables are used to split old age benefits into old age contributory pension (*poact*) and old age social pension (*poanc*). The values of this initial splitting

are checked in order to assure that the value of *poanc* cannot be higher than the maximum value of the old age social pension.

This disaggregation should be done according to the policy rules described before and if the original value of the variable *poa* is within the band [-3.5%, +3.5%] of the individual income.

#### 2.4.5 Solidarity supplement for older persons (*bsaoa\_s*)

- **Definition**

The recipient is the individual, although if living with a partner, the income of the couple is observed. Their children/descendants' income is also indirectly observed. Thus, the family unit is the individual, if living alone, or the couple otherwise.

Equivalence scale for the recipient's 'family unit': 1 for the single recipient and 1.75 for the couple. This benefit also considers a second family unit: the household of the recipient's children.

- **Eligibility conditions**

Minimum age: 66 years old and 2 months in 2016, 66 years old and 3 months in 2017, 66 years and 4 months in 2018, and 66 years and 5 months in 2019.

From January 2018, in order to compensate the penalties in early pensions since 2014, an exception to the minimum age is granted in cases where the pensioner has an early pension starting since January 2014. Not possible to simulate in EUROMOD due to lack of data.

From October 2018, invalidity pensioners who are not recipients of the new benefit for handicapped people (*'Prestação Social para a Inclusão'*), may also be entitled to the solidarity supplement.

- **Income test**

- Single recipient: annual gross income up to the reference amount.
- Couple: annual gross income up to 1.75 x reference amount. However, the single recipient means-test must also be met.

**Table 2.10 Solidarity supplement for the older persons: reference amounts, 2016-2019 (annual, in €)**

|                      | 2016     |           | 2017     | 2018     | 2019     |
|----------------------|----------|-----------|----------|----------|----------|
|                      | Jan-Mar  | Since Apr |          |          |          |
| Single               | 5,022.00 | 5,059.00  | 5,084.30 | 5,175.82 | 5,258.63 |
| Couple (1.75xsingle) | 8,788.50 | 8,853.25  | 8,897.53 | 9,057.69 | 9,202.60 |

The income of both elements of the family unit ( $Y_1$  and  $Y_2$  in the formula in Table 2.22 below) include a wide range of income variables in EUROMOD, as listed below (although some types of income are impossible or difficult to simulate).

**Table 2.11 Solidarity supplement for the older persons: assessed income**

| Variable | Label   |
|----------|---|
| yem      | INCOME: Employment  |
| yse      | INCOME: Self-employment (only 65% of the amount)  |
| bunct_s  | BENEFIT/PENSION: Unemployment: insurance  |
| bunnc_s  | BENEFIT/PENSION: Unemployment: assistance   |
| poact_s  | BENEFIT/PENSION: Old age: contributory  |
| poanc_s  | BENEFIT/PENSION: Old age: non-contributory (simulated)  |
| psu      | BENEFIT/PENSION: Survivors  |
| pdi      | BENEFIT/PENSION: Disability   |
| bed      | BENEFIT/PENSION: Education  |
| ypp      | INCOME: Private pension   |
| ypr      | INCOME: Property  |
| bsaot    | Other social assistance benefits  |
| bho      | BENEFIT/PENSION: Housing  |
| yy       | INCOME: Investment  |
| yot      | INCOME: Other   |
| ypt      | INCOME: Private transfers   |
| -        | Family solidarity (not fully simulated – see below)   |
| -        | Institution attendance: annual subsidy paid by Social Security to social institutions. Impossible to simulate.  |
| -        | Income imputation from wealth: 5% of the value of financial assets (when this value is higher than the investment income declared) and 5% of real estate (when this value is higher than the property income declared). Impossible to simulate. |

**‘Family Solidarity’**

As mentioned above, this benefit also considers the income of the recipients’ children/descendants. They are evaluated within their own households and comprise their own partners and any dependent children. The income level of each recipients’ descendants is thus observed, and the family solidarity income calculated. This income is then added to the recipients’ own income, and if a descendants’ income is high enough, the parent/recipient is excluded from the Solidarity Supplement for Older persons. However, it is only possible to simulate the Family Solidarity income when both the recipient and descendants live in the same household.

The types of income of the recipients’ descendants that are evaluated are:

**Table 2.12 Solidarity supplement for the older persons: assessed income (Family Solidarity)**

| Variable | Label                            |
|----------|----------------------------------|
| yem      | INCOME: Employment               |
| yse      | INCOME: Self-employment          |
| poa      | BENEFIT/PENSION: Old age         |
| psu      | BENEFIT/PENSION: Survivors       |
| pdi      | BENEFIT/PENSION: Disability      |
| bed      | BENEFIT/PENSION: Education       |
| ypp      | INCOME: Private pension          |
| ypt      | INCOME: Private transfers        |
| ypr      | INCOME: Property                 |
| bsaot    | Other social assistance benefits |
| bho      | BENEFIT/PENSION: Housing         |

Then, the household's total income is equivalised through an 'OECD modified' resembling scale of equivalence (1 for the first adult, 0.5 for other adults with more than 18 years old, and 0.3 for every child aged 0-17). The computed equivalent income is then used to position the descendant on a scale.

**Table 2.13 Solidarity supplement for the older persons: Family Solidarity scale**

| Equivalent income                            | Rank            |
|--|-----------------|
| Below or equal to 2.5 x reference value (RV) | 1 <sup>st</sup> |
| Between 2.5 and 3.5 x RV                     | 2 <sup>nd</sup> |
| Between 3.5 and 5 x RV                       | 3 <sup>rd</sup> |
| Above 5 x RV                                 | 4 <sup>th</sup> |

Note: RV amounts for 2016-2019 are given in Table 2.17 above.

Each ranking is translated into a Family Solidarity amount as defined in the table below:

**Table 2.14 Solidarity supplement for older persons: Family Solidarity amounts**

| Rank            | Family Solidarity (FS)               |                                  |
|-----------------|--------------------------------------|----------------------------------|
|                 | Parent (recipient) has no partner    | Parent (recipient) has a partner |
| 1 <sup>st</sup> | No FS                                | No FS                            |
| 2 <sup>nd</sup> | 5% of the RV                         | 5% of the RV x 1.75              |
| 3 <sup>rd</sup> | 10% of the RV                        | 10% of the RV x 1.75             |
| 4 <sup>th</sup> | Automatic exclusion from the benefit |                                  |

This process is repeated for each descendant of the same recipient, and all FS amounts are then added to the recipient's income. If the rank of one of these descendants is equal to 4, the parent is immediately excluded from the benefit.

Two important remarks:

- A descendant 'generates' a FS amount to each parent (and only to them). For example, if two recipients who live as a couple have a son in the 2<sup>nd</sup> rank, then each of them will be awarded an extra Solidarity Supplement for older persons of 5% of €5,175.82 x 1.75. But if the person is the son of only one of the recipients, it will only 'generate' one extra amount awarded to the parent, and the partner will not be entitled to any Solidarity Supplement from this FS 'source'.
- The FS only happens when a parent is a recipient. For example, if an elderly couple have a daughter together, but only the wife is a recipient, then she will only "generate" the FS to her mother.

- **Benefit amount**

The amount paid is the difference between the reference value (€5,258.63 in 2019) and the annual income of the recipient. Calculations are simple when the recipient lives alone, but complicated when living in couples:

- When there is only one recipient in the couple, the amount paid is the minimum of two values: the difference between the reference value and the actual individual income of the recipient (or half of the actual income of the couple), and the difference between the 'total equivalent reference value' (€5,258.63 x 1.75 in 2019) and the couple's total income.
- When both are recipients, the amount paid is given by the difference between the 'total equivalent reference value' and the couple's total income. This amount is then divided between the two recipients according to specific rules.

**Table 2.15 Calculation of the Solidarity Supplement for older persons**

|                         |   |
|-------------------------|---|
| Single recipient:       | $amount = RV - Y_1$   |
| Couple, one recipient:  | $amount = \min \left\{ \begin{array}{l} RV - Y_1 \\ RV \times 1.75 - Y_1 - Y_2 \end{array} \right.$ |
| Couple, two recipients: | $amount = RV \times 1.75 - Y_1 - Y_2$   |

Note:  $Y_1$  is the total individual income of the sole recipient or of the first recipient in a couple where both are recipients, while  $Y_2$  is the total individual income of the partner or second recipient in the couple.  $RV$  is the reference value.  $Y_1$  and  $Y_2$  include the FS, but only in the case of the recipients.

The Solidarity Supplement for older persons is paid monthly, twelve times a year.

- **EUROMOD notes**

Given the impossibility of simulating all means-tested conditions of the non-resident descendants, the simulation overestimates the number of recipients and the benefit amounts. Thus, the number of recipients was **calibrated** (*random\_pt* policy) to guarantee consistency with official statistics.

- **Split**

The EU-SILC hy060g variable (*Social Exclusion Not Elsewhere Classified*) contains information about several benefits. These are Solidarity Supplement for Older Persons, the Social Integration Income and other.

In EU-SILC UDB hy061g, hy062g and hy064g are missing and have the flag=-2. This implies that hy060g = hy063g and all the hy060g amount is non-contributive and means-tested. The option is to split *bsa* into *bsaoa* and *bsa00* and make *bsaot*=0 for all cases.

The Solidarity Supplement for Older Persons is the first variable to get from the split, considering the rules of this policy. Basically, for households with a positive amount of this variable (*bsa* > 0) and with at least one person within the legal retirement age or more, the expected amount of Solidarity Supplement for Older Persons is calculated. If the original value (*bsa*) is greater or equal to that expected amount, then the Solidarity Supplement is equal to that amount, otherwise it is equal to the original value of *bsa*.

#### 2.4.6 Social Integration Income (*bsa00\_s*)

- **Definition**

The unit of analysis is the family. This unit comprises:

- The head of the family;
- His/her partner;
- All of his/her under-18 relatives;
- Other direct descendants of the head aged 18+ that are his dependents. Dependency is defined by having an income level up to 70% of the social pension.

Equivalence scale for income evaluation (from March 2016): 1 for the first adult (aged 18+); 0.7 for each additional adult; 0.5 for each child.

- **Eligibility conditions**

Individuals of all ages. However, the head of the family must be an adult (aged 18 or older).



• *Income test*

The family’s total income must be lower than their ‘Social Integration Income (SII) value’, which is equal to the scale of equivalence multiplied by the SII reference amount (€180.99 in 2016, €183.84 in 2017, €186.68 in 2018 and €189.66 in 2019).

There is also a specific test on financial assets, which must be less than 60 x SSI. Not possible to simulate in EUROMOD.

**Table 2.16 Social integration income: assessed income**

| Variable | Label  |
|----------|--|
| yem      | INCOME: Employment (only 80% of the amount)            |
| yse      | INCOME: Self-employment (only 80% of the amount)       |
| bunct_s  | BENEFIT/PENSION: Unemployment: insurance               |
| bunnc_s  | BENEFIT/PENSION: Unemployment: assistance              |
| poact_s  | BENEFIT/PENSION: Old age: contributory                 |
| poanc_s  | BENEFIT/PENSION: Old age: non-contributory (simulated) |
| psu      | BENEFIT/PENSION: Survivors                             |
| pdi      | BENEFIT/PENSION: Disability                            |
| bed      | BENEFIT/PENSION: Education                             |
| ypp      | INCOME: Private pension                                |
| ypt      | INCOME: Private transfers                              |
| ypr      | INCOME: Property                                       |
| yy       | INCOME: Investment                                     |
| yot      | INCOME: Other  |

• *Benefit amount*

The amount paid results from the difference between the ‘SII value’ and the family’s total income. The SII is paid in a monthly basis, twelve times a year.

Other modifications (beyond the equivalence scale and threshold) not documented here, can affect the benefits claiming, renewal and administrative processes, and may have a negative impact on the number of recipients, such as:

- New rules for new claims and renewals of the SII may increase the bureaucratic process and create additional difficulties to families, leading to an increase in non-take-up and exit issues.
- Increased emphasis in inspection checks to combat fraudulent claims.
- Individuals must now follow stricter rules concerning their integration programs. If an individual fails to attend a social security services meeting without reasonable motive, the benefit is cancelled.
- Individuals who live in institutions funded by the state (including jail) are no longer eligible.

• *Split*

SII is just one of the possible benefits included in the original variable hy060g. Previously, Solidarity Supplement for Older Persons has been extracted by estimation from hy060g. The difference between *bsa* and *bsaa* is attributed to *bsa00*.

• **EUROMOD notes**

The simulation of the Social Integration Income (bsa00\_s) is adjusted in a way individuals who were eligible for the Solidarity Supplement for Older Persons (bsaoa\_s) but didn't take it up as a result of the calibration procedure, are automatically excluded from receiving bsa00\_s.

**2.4.7 Child benefit (bch\_s)**

• **Definition**

The unit of analysis is the family. The recipients are the children. The number of recipients is the only data needed for the equivalence scale calculations, although the family income is also observed.

It assumes a wider concept of benefit unit than the one that is generally used. The *de facto benefit* unit is a tax unit including the recipient child (or children), siblings, parents, tutors and stepparents.

Equivalence scale for income evaluation: 1 for each recipient plus one (e.g. the income of a family with 2 recipient children is divided by 3).

• **Eligibility conditions**

Children up to 16 years old. It can be extended to individuals up to 24 years under certain conditions:

- Aged 17 or 18: if attending primary education (1<sup>st</sup> to 6<sup>th</sup> grade) or higher.
- Aged 19 or 20: if attending secondary education (7<sup>th</sup> to 12<sup>th</sup> grade) or higher.
- Until 24 years old: if attending higher/superior education.
- Also until 24 years old: if disabled children and receiving disability allowance (not simulated), and children not working.

• **Income test**

The annual 'reference income' cannot exceed 5 x SSI. It results from the total annual family unit income divided by the total number of recipients plus one. According to the 'reference income', families are ranked along four income brackets:

**Table 2.17 Child benefit income brackets, 2016-2019**

| Income bracket                 | Income bracket upper bounds <sup>(1)</sup> | In 2019    |
|--------------------------------|--|------------|
| 1 <sup>st</sup>                | 0.5 x 14 x SSI                             | €3,050.32  |
| 2 <sup>nd</sup>                | 1.0 x 14 x SSI                             | €6,100.64  |
| 3 <sup>rd</sup>                | 1.5 x 14 x SSI                             | €9,150.96  |
| 4 <sup>th</sup> <sup>(2)</sup> | 2.5 x 14 x SSI                             | €15,251.60 |

<sup>(1)</sup> The SSI is not necessarily the amount of SSI in the year that the benefit is paid, but rather the amount that was in force in the income reference year. For example, in 2019 the income assessed will probably date to 2018 or even 2017, so it should be assessed by the SII amount of that corresponding year.

<sup>(2)</sup> This income bracket is not applicable in 2016, where only the first three were in force.

**Table 2.18 Child benefit: assessed income**

| Variable | Label   |
|----------|---|
| yem      | INCOME: Employment                                      |
| yse      | INCOME: Self-employment (70% of earnings, 20% of sales) |
| bunct_s  | BENEFIT/PENSION: Unemployment: insurance                |
| bunnc_s  | BENEFIT/PENSION: Unemployment: assistance               |
| poact_s  | BENEFIT/PENSION: Old age: contributory                  |
| poanc_s  | BENEFIT/PENSION: Old age: non-contributory (simulated)  |
| psu      | BENEFIT/PENSION: Survivors                              |
| pdi      | BENEFIT/PENSION: Disability                             |
| bed      | BENEFIT/PENSION: Education                              |
| ypp      | INCOME: Private pension                                 |
| ypr      | INCOME: Property  |
| yy       | INCOME: Investment                                      |
| yot      | INCOME: Other   |

- *Benefit amount*

The amount paid every month depends on the child's age and on the income bracket of the child's family.

**Table 2.19 Child benefit amounts, 2016 (monthly, in €)**

| Income bracket  | Until April |            | Since April |            |
|-----------------|-------------|------------|-------------|------------|
|                 | <=12 months | >12 months | <=12 months | >12 months |
| 1 <sup>st</sup> | 145.69      | 36.42      | 145.69      | 36.42      |
| 2 <sup>nd</sup> | 119.66      | 29.92      | 120.26      | 30.07      |
| 3 <sup>rd</sup> | 94.14       | 27.07      | 94.61       | 27.21      |

**Table 2.20 Child benefit amounts, 2017 (monthly, in €)**

| Income bracket  | From January to June |                     |            | From July to December |                     |            |
|-----------------|----------------------|---------------------|------------|-----------------------|---------------------|------------|
|                 | <=12 months          | >12 and <=36 months | >36 months | <=12 months           | >12 and <=36 months | >36 months |
| 1 <sup>st</sup> | 146.42               | 54.90               | 36.60      | 146.42                | 73.21               | 36.60      |
| 2 <sup>nd</sup> | 120.86               | 45.33               | 30.22      | 120.86                | 60.43               | 30.22      |
| 3 <sup>rd</sup> | 95.08                | 38.64               | 27.35      | 95.08                 | 49.93               | 27.35      |
| 4 <sup>th</sup> | 9.46                 | 9.46                | -          | 18.91                 | 18.91               | -          |

**Table 2.21 Child benefit amounts, 2018 (monthly, in €)**

| Income bracket  | From January to June |                     |            | From July to December |                     |            |
|-----------------|----------------------|---------------------|------------|-----------------------|---------------------|------------|
|                 | <=12 months          | >12 and <=36 months | >36 months | <=12 months           | >12 and <=36 months | >36 months |
| 1 <sup>st</sup> | 148.32               | 91.99               | 37.08      | 148.32                | 110.77              | 37.08      |
| 2 <sup>nd</sup> | 122.43               | 75.93               | 30.61      | 122.43                | 91.43               | 30.61      |
| 3 <sup>rd</sup> | 96.32                | 73.12               | 27.71      | 96.32                 | 73.12               | 27.71      |
| 4 <sup>th</sup> | 28.61                | 28.61               | -          | 38.31                 | 38.31               | -          |

Table 2.22 Child benefit amounts, 2019 (monthly, in €)

| Income bracket  | From January to June |              |              |            | From July to December |              |              |            |
|-----------------|----------------------|--------------|--------------|------------|-----------------------|--------------|--------------|------------|
|                 | <=12 months          | >12 and <=36 | >36 and <=72 | >72 months | <=12 months           | >12 and <=36 | >36 and <=72 | >72 months |
| 1 <sup>st</sup> | 149.85               | 130.31       | 43.44        | 37.46      | 149.85                | 149.85       | 49.95        | 37.46      |
| 2 <sup>nd</sup> | 123.69               | 107.56       | 35.85        | 30.93      | 123.69                | 123.69       | 41.23        | 30.93      |
| 3 <sup>rd</sup> | 97.31                | 85.22        | 28.41        | 28.00      | 97.31                 | 97.31        | 32.44        | 28.00      |
| 4 <sup>th</sup> | 48.35                | 48.35        | 16.12        | -          | 58.39                 | 58.39        | 19.46        | -          |

Note: in EUROMOD it is used the average amounts referring to the two semesters.

#### Supplement for large families:

- Every child between 12 and 36 months entitled to the benefit with one other sibling, receives an additional amount equal to what a child aged 36+ receive in the same income bracket.
- Every child between 12 and 36 months entitled to the benefit with two or more other siblings, receives an additional amount equal to two times what a child aged 36+ receive in the same income bracket.

**Number of payments:** the child benefit is paid in a monthly basis, twelve times a year. There is an extra payment (of the same amount) in September, for children that fulfil the following conditions:

- a) The child's heir family is in the 1<sup>st</sup> income bracket.
- b) The child is between 6 and 16 years old (age attained during the civil year);
- c) The child attends school.

**Bonus for lone parent families:** 35% increase in the above amounts.

**Education allowance:** twice the amount of the benefit that the child is receiving. Conditions that must be fully observed:

- a) The family income bracket is the 1<sup>st</sup> or the 2<sup>nd</sup>.
- b) The child is attending the 10-12<sup>th</sup> grade.
- c) The child's age is less than 18 years (can be 18 if that age is attained during the school year).
- d) The child has school success (not able to be simulated).

- **Split**

The EU-SILC variable hy050g (Family/children related allowances) contains information regarding two benefits: child benefit (*bch*) and other family/children related allowances (*bfa*). The identification of the *bch* variable was done using the information of the EU-SILC variable hy053g (Family/children-related allowances non-contributory and means-tested). The remains components of the variable hy050g were affected to *bfa*.

#### 2.4.8 Prenatal family allowance (*bmapr\_s*)

- **Brief description**

A pregnant woman receives the benefit. It is an allowance attribute to the pregnant woman from the 13<sup>th</sup> week of gestation, which aims to encourage motherhood by compensating for the increased costs during the period of pregnancy. The applicant cannot have a reference income higher than 1.5 x SSI x 14.

• *Definition*

The unit of analysis is the family.

• *Eligibility conditions*

- Have reached the 13th week of gestation.
- Be resident in Portugal or equivalent to a resident.
- Have the reference income equal to or less than the value established for the third income bracket (equal to or less than 1.5 x SSI x 14).
- Do not have financial capital more than 240 x SSI.

• *Income test*

The income brackets are established in the basis of the SSI. Currently, families are ranked in three income brackets.

The reference income is calculated by summing the total income of each family member divided by the number of children and young people entitled to the family allowance in that same household plus one and the number of unborn children.

**Table 2.23 Prenatal family allowance income brackets, 2016-2019**

| Income bracket  | Income bracket upper bounds | In 2019   |
|-----------------|-----------------------------|-----------|
| 1 <sup>st</sup> | 0.5 x 14 x SSI              | €3,050.32 |
| 2 <sup>nd</sup> | 1.0 x 14 x SSI              | €6,100.64 |
| 3 <sup>rd</sup> | 1.5 x 14 x SSI              | €9,150.96 |

**Table 2.24 Prenatal family allowance: assessed income**

| Variable | Label  |
|----------|--|
| yem      | INCOME: Employment                                       |
| yse      | INCOME: Self-employment                                  |
| bunct_s  | BENEFIT/PENSION: Unemployment: insurance                 |
| bunnc_s  | BENEFIT/PENSION: Unemployment: assistance                |
| poact_s  | BENEFIT/PENSION: Old age: contributory                   |
| poanc_s  | BENEFIT/PENSION: Old age: non-contributory               |
| psu      | BENEFIT/PENSION: Survivors                               |
| bsaoa_s  | BENEFIT/PENSION: Solidarity supplement for older persons |
| bsa00_s  | BENEFIT/PENSION: Social integration income               |
| bsaot    | BENEFIT/PENSION: Other social assistance benefits        |
| bho      | BENEFIT/PENSION: Housing benefits                        |
| bed      | BENEFIT/PENSION: Education                               |
| ypp      | INCOME: Private pension                                  |
| ypt      | INCOME: Private transfers                                |
| ypr      | INCOME: Property   |
| yi       | INCOME: Investment                                       |
| yot      | INCOME: Other  |

- **Benefit amount**

The prenatal family allowance is assigned for 6 months, from the month following that in which the 13<sup>th</sup> week of pregnancy is reached.

If the period of pregnancy is:

- Over 40 weeks, it is attributed for 6 months or until the month of birth, inclusive.
- Less than 40 weeks, it is attributed for 6 months, and can be accumulated with the child benefit after birth.

If an interruption of pregnancy occurs, it is attributed until the month of termination of pregnancy.

The amount of prenatal family allowance is variable based on the reference income of the household and corresponds to the amount of the child benefit in the first year of life. It is increased by 35% in single parenting situations.

**Table 2.25 Prenatal family allowance amounts, 2016-2019 (monthly, in €)\***

| Income bracket  | 2016   | 2017   | 2018   | 2019   |
|-----------------|--------|--------|--------|--------|
| 1 <sup>st</sup> | 145.69 | 146.42 | 148.32 | 149.85 |
| 2 <sup>nd</sup> | 119.66 | 120.86 | 122.43 | 123.69 |
| 3 <sup>rd</sup> | 94.14  | 95.08  | 96.32  | 97.31  |

\* The amounts in case of twins are doubled (tripled if triplets).

- **Subject to taxes/SIC**

Not taxable. Not subject to SICs.

- **EUROMOD notes:**

In the EUROMOD Public Release of 2020 (I2.0) this benefit is only simulated from 2015 to 2019. The simulation is, however, switched off as part of the baselines, i.e., non-simulated components (*bfa*) are being used.

The benefit can only be simulated for those women who already gave birth and therefore could be eligible for the allowance for up to 6 months before the childbirth during each policy year. The duration of this allowance depends on the month of birth of the child.

## 2.4.9 Parental allowance (*bplct\_s*)

- **Brief description**

This benefit is intended for citizens beneficiaries of the social security system and is intended to replace the lost work income (of the mother and/or the father) during the period of childbirth leave. It is not compatible with work income and unemployment benefits (that will be suspended while receiving the parental allowance). There are different concession periods considering the different modalities that this allowance comprises.

- **Definition**

This benefit is intended for citizens:

- Beneficiaries of the social security system covered by the employees/self-employed/voluntary social insurance scheme;

- Beneficiaries in pre-retirement status who carry out an activity under any of the aforementioned schemes;
- Beneficiaries receiving unemployment benefits (insurance and assistance);
- Beneficiaries who receive a relative disability pension or survivor's pension and that are working and with records of remuneration in the Social Security.

This allowance comprises several modalities (which have different concession periods):

- **Initial parental allowance:** attributed for a period up to 120 or 150 consecutive days, according to the parents' option. This period can be extended by 30 days in cases of shared license or birth of twins (for each twin, in addition to the first).
  - **Mother's exclusive initial parental allowance:** assigned to the mother for a period up to 72 days (30 days, at most, before childbirth and 42 mandatory days immediately after delivery). This period is included in period corresponding to the initial parental allowance.
  - **Father's exclusive initial parental allowance:** assigned to the father for a period of 15 mandatory working days (of which 5 immediately after the birth and 10 within 30 days of the birth) and 10 optional working days (consecutive or not) which must be taken after the 15 mandatory days and within the period of the mother's maternity leave. This period is additional to the initial parental allowance.
  - **Initial parental allowance of one parent in the event of impossibility of the other:** assigned to the father or mother in the event of physical or mental incapacity, or death of one of them, for the period of the initial parental allowance which the other parent lacked.
- **Eligibility conditions**
    - Have a minimum period of contributions of at least 6 months.
    - Enjoy the respective licenses, absences and unpaid waivers under the Labour Code or equivalent periods.
    - Have Social Security contributions paid by the end of the third month immediately preceding the month in which the parents leave work for the birth child (if self-employed person or if covered by the voluntary social insurance scheme).

- **Income test**

This is not a means-tested benefit.

- **Benefit amount**

The daily amount of the allowance is calculated by applying a percentage to the amount of the beneficiary's reference remuneration (RR), defined by:

- $RR = R/180$ , where R is equal to the total of the salaries registered in Social Security in the first six calendar months immediately preceding the second month preceding the beginning of the incapacity for work; or
- $RR = R/(30 \times n)$  if there is no remuneration record in that six-month period because there has been a totalization of taxable periods, and where R is equal to the total remuneration recorded in Social Security since the beginning of the reference to the day before the impediment to work, and n is the number of months to which they report.

**Table 2.26 Parental allowance amounts, 2016-2019**

| Periods of concession               | Monthly amounts |
|-------------------------------------|-----------------|
| 120 days of leave                   | 100% of RR      |
| 150 days of shared leave (120 + 30) |                 |

|   |           |
|---|-----------|
| 30 additional days for each twin (plus the first) |           |
| Days of father's exclusive license                |           |
| 180 days of shared leave (150 + 30)               | 83% of RR |
| 150 days of leave                                 | 80% of RR |

**Minimum daily amount:** the amount of the allowance cannot be less than 80% of 1/30 of the SSI, which corresponded to €1.62 in 2019, €1.44 in 2018, €1.24 in 2017, and €1.18 in 2016.

- **Extended parental allowance**

Allowance paid to the mother or the father or both, alternatively aiming to replace the lost work income during the period of childbirth leave, provided that the leave is taken immediately after the end of the period of the parental allowance or the extended parental allowance of the other parent.

It is assigned for a period up to 3 months.

The daily amount of the allowance is calculated by applying 25% to the value of the beneficiary's reference remuneration.

**Minimum daily amount:** the amount of the allowance cannot be less than 40% of 1/30 of the SSI, which corresponded to €5.81 in 2019, €5.72 in 2018, €5.62 in 2017, and €5.59 in 2016.

- **Subject to taxes/SIC**

Not taxable. Not subject to SICs.

- **EUROMOD notes:**

In the EUROMOD Public Release of 2020 (I2.0) this benefit is only simulated from 2015 to 2019. The simulation is, however, switched off as part of the baselines, i.e., non-simulated components (bfa) are being used.

We assume that the mother takes the whole duration of leave and chooses to take a shorter leave at higher replacement rate (120 days including 30 days before the childbirth, extended to 150 days in total in case of multiple births)<sup>2</sup>. For the partner we assume that they take the maximum duration (25 working days given the 6 working days week or 29 calendar days). We also assume that parents do not decide to make use of the extended parental allowance.

Besides, as the benefit amount depends on the previous earnings, we assume those to be equal to the imputed wage (*yivwg*) or the current wage, whichever is higher. The imputed wage is recorded in hourly terms, hence we assume a country-specific standard number of hours worked per week (40 hours) and we recalculate *yivwg* in monthly terms ( $yivwg * 40 * (52/12)$ ).

### 2.4.10 Parental social allowance (*bplnc\_s*)

- **Brief description**

This benefit is intended for citizens that are not covered by any compulsory social protection scheme or by the voluntary social insurance scheme. This allowance is paid to the father and/or mother who do not work and do not have Social Security contributions, or who do not qualify for parental allowance.

---

<sup>2</sup> However, external statistics shows that it exists a clear preference on choosing 150 days (for the mothers, in the initial parent allowance). The same does not happen when one consider the initial parental social allowance.



It is not compatible with work income and unemployment benefits (that will be suspended while receiving the parental social allowance).

• **Definition**

This benefit is intended for citizens:

- Not beneficiaries of any compulsory social protection scheme or by the voluntary social insure scheme;
- Beneficiaries receiving unemployment benefits (insurance and assistance).

This allowance comprises several modalities (which have different concession periods): initial parental social allowance, mother’s exclusive initial parental social allowance, parent’s exclusive initial parental social allowance, and initial parental social allowance of one parent in the event of the impossibility of the other. The concession periods are the ones equal to the contributory parental allowance.

• **Eligibility conditions**

- Be resident in Portugal or equivalent to a resident.
- Have a monthly income, per person, of the household, equal or less than 80% of the SSI.
- Do not have financial capital more than 240 x SSI.

• **Income test**

The reference income is the sum of all the monthly income of the household of the applicant divided by the elements of his household, considering the following weighting for each element of the household:

- Recipient: 1
- Every other adult (18+): 0.7
- Every under 18: 0.5

**Table 2.27 Parental social allowance: assessed income**

| <b>Variable</b> | <b>Label</b>   |
|-----------------|--|
| yem             | INCOME: Employment                                       |
| yse             | INCOME: Self-employment                                  |
| bunct_s         | BENEFIT/PENSION: Unemployment: insurance                 |
| bunnc_s         | BENEFIT/PENSION: Unemployment: assistance                |
| poact_s         | BENEFIT/PENSION: Old age: contributory                   |
| poanc_s         | BENEFIT/PENSION: Old age: non-contributory               |
| psu             | BENEFIT/PENSION: Survivors                               |
| bsaoa_s         | BENEFIT/PENSION: Solidarity supplement for older persons |
| bsa00_s         | BENEFIT/PENSION: Social integration income               |
| bsaot           | BENEFIT/PENSION: Other social assistance benefits        |
| bho             | BENEFIT/PENSION: Housing benefits                        |
| bed             | BENEFIT/PENSION: Education                               |
| ypp             | INCOME: Private pension                                  |
| ypt             | INCOME: Private transfers                                |
| ypr             | INCOME: Property   |
| yi              | INCOME: Investment                                       |

Yot INCOME: Other

- **Benefit amount**

The amount of the allowance corresponds to a percentage of the SSI, as indicated below:

**Table 2.28 Parental social allowance amounts, 2016-2019**

| Periods of concession                             | Monthly amounts |
|---|-----------------|
| 120 days of leave                                 |                 |
| 150 days of shared leave (120 + 30)               |                 |
| 30 additional days for each twin (plus the first) | 80% x SSI       |
| 10 days of father's exclusive license             |                 |
| 180 days of shared leave (150 + 30)               | 66% x SSI       |
| 150 days of leave                                 | 64% x SSI       |

- **Subject to taxes/SIC**

Not taxable. Not subject to SICs.

- **EUROMOD notes:**

In the EUROMOD Public Release of 2020 (I2.0) this benefit is only simulated from 2015 to 2019. The simulation is, however, switched off as part of the baselines, i.e., non-simulated components (bfa) are being used.

The duration of this allowance is modelled for both parents as exactly the same way as for the contributory parental allowance.

## 2.5 Social contributions

### 2.5.1 Employee social contributions (*tscee\_pt*)

Generally, employees pay contributions on their gross employment income at an 11% flat rate. Civil servants that started working before 2006 contribute to a separate scheme with multiple rates, but their average rate is similar to the private sector general regime rate.

**EUROMOD note:** There are several regimes, according to specific activities/situations (non-profit organizations, rural workers, football players, clergy, domestic services, young people in their first job, handicapped). Due to the lack of detailed information in the available data, EUROMOD can only simulate the general rule.

### 2.5.2 Employer social contributions (*tscer\_pt*)

Employers pay contributions on their employees' gross income according to a flat rate of 23.75%.

### 2.5.3 Self-employed social contributions (*tscse\_pt*)

#### Self-employment social contributions since 2011 to 2018

- **Contribution rates:** 29.6% (28.3% for rural workers).
- **Contribution base:** approximately the actual self-employment income. However, the individuals may choose a base higher than the actual income. The contribution base is defined as that of the

bracket immediately below one twelfth of the previous year's income. The annual income is defined as 70% of services or 20% of sales, according to the nature of the business.

- **Contribution level:** fixed each October (brackets given below) and remains fixed for 12 months if the individual remains self-employed for that period. There is a progressive adjustment: every October the income bracket position of all self-employed individuals is revised. New self-employed individuals (or those who had no income during the previous year) are placed in the 1st bracket.
- **Exemptions:** the self-employed workers are exempt of paying social contributions if their annual income from self-employment is less than 6 x SSI, if they have received as employees an income above 12 x SSI, or if they receive old age/disability pensions. All these exemptions are simulated in EUROMOD.
- **Self-employed 'employers' contribution:** if the self-employed individual works on a regular basis for one institution, *i.e.*, more than 80% of the self-employment income is paid by this institution and the individual has no other source of employment income, then the institution must pay a contribution of 5% of the total amount paid for the services.

**Table 2.29 Self-employed contribution amounts (2016-2018)**

| Contribution bracket | Monthly amount |
|----------------------|----------------|
| 1 <sup>st</sup>      | 1 x SSI        |
| 2 <sup>nd</sup>      | 1.5 x SSI      |
| 3 <sup>rd</sup>      | 2 x SSI        |
| 4 <sup>th</sup>      | 2.5 x SSI      |
| 5 <sup>th</sup>      | 3 x SSI        |
| 6 <sup>th</sup>      | 4 x SSI        |
| 7 <sup>th</sup>      | 5 x SSI        |
| 8 <sup>th</sup>      | 6 x SSI        |
| 9 <sup>th</sup>      | 8 x SSI        |
| 10 <sup>th</sup>     | 10 x SSI       |
| 11 <sup>th</sup>     | 12 x SSI       |

### Self-employment social contributions since 2019

The self-employed scheme was completely reformed in 2019. Changes and new features:

- **Contribution rates** (applied to the monthly average income): 21.4% (25.2% for rural workers).
- **Contribution base:** actual income, rather than a conventional income based on brackets. Still, not all the gross income is considered. Relevant income: 70% of services or 20% of sales, according to the nature of the business. In the income declaration, the self-employed has the option to change the total income used for the calculation of contributions, increasing or lowering it by up to 25%.
  - o Maximum base: 12 x SSI.
  - o Minimum base: a base of incidence resulting in a contribution amount lower than €5 is considered null.
- **Quarterly reporting:** every quarter (end of January, April, July, October) the self-employed are obliged to communicate their income from the previous quarter. The quarterly income is then divided by three in order to get the monthly average income. Quarterly update: every quarter, contribution amounts are updated according to the updated monthly average income derived from the quarterly income declaration.

- **Minimum contribution:** €20/month.
- **Exemptions:** the self-employed workers are exempt of paying social contributions if they receive old age/disability pensions, and if they simultaneously have received as employees an income above 12 x SSI and a monthly average income from self-employment below 4 x SSI (the exceeding amount is relevant and is considered in the contribution base).
- **Self-employed ‘employers’ contribution:** if the self-employed individual works on a regular basis for one institution, *i.e.*, more than 50% (or 80%) of the self-employment income is paid by this institution and the individual has no other source of employment income, then the institution must pay a contribution of 7% (or 10%, respectively) of the total amount paid for the services.

## 2.6 Taxes

### 2.6.1 Personal income tax (*tin00\_pt*)

- **Tax unit**

Personal income tax (*‘Imposto sobre o Rendimento Singular’* – IRS) is due by individuals residing in Portugal and by non-residents receiving income in Portugal. When the individual residing in Portugal is part of a family unit, the income tax applies to all its members. The basic tax unit is composed by the two partners and their dependent children who are defined as:

- Children, adopted children and stepchildren younger than 18 years old and not emancipated.
- Children, adopted children and stepchildren aged between 18 and 25 (adults), with a monthly income below the national minimum wage, who have attended school the 11<sup>th</sup> or 12<sup>th</sup> grade of schooling or have attended the compulsory military or civic service.
- Children, adopted children and stepchildren aged 18+ that have been declared unfit for work and have a monthly income below the national minimum wage (the model assumes that all disabled individuals are unfit to work);
- Minors (less than 18) living with a guardian and earning no income.

The age assessment’s date is December 31<sup>st</sup>.

Dependent parents do not belong to the tax unit. They constitute a different tax unit of their own, that is only accounted in the deductions phase. However, if they fulfil the conditions required to be considered dependent parents (*i.e.*, income below the minimum pension) they are exempt from tax obligations. So, for simplicity in the calculation of the deductions, the model assumes them as being part of the son/daughter’s tax unit.

Joint taxation for unmarried couples is not compulsory (although it is by far the most frequent option), but for EUROMOD purposes it is assumed as such.

- **Taxable income**

Methods for income determination and tax collection may vary between different income sources. Nevertheless, the taxable income is always the total income resulting from the aggregation of gross incomes of different sources minus income specific deductions applied to each income category, and specific reductions/ allowances.

**Table 2.30 Personal income tax: assessed income (before allowances deduction)**

| Variable | Label  |
|----------|--|
| yem      | INCOME: Employment   |
| yse      | INCOME: Self-employment  |
| poact_s  | BENEFIT/PENSION: Old age: contributory   |
| poanc_s  | BENEFIT/PENSION: Old age: non-contributory   |
| psu      | BENEFIT/PENSION: Survivors   |
| pdi      | BENEFIT/PENSION: Disability  |
| ypp      | INCOME: Private pension  |
| ypr      | INCOME: Property   |
| yyi      | INCOME: Investment (Although interest is subject to personal income tax, it is generally taxed at source, through the banking system, at a flat rate of 25%. Thus, in EUROMOD, it is simulated separately and not added to the families' income) |

- **Tax allowances**

Deductions are applied at the individual level, even on joint taxation. For instance, if both partners work, the deductions of the first income category (see next table) are applied separately to their individual incomes, with zero as limit for the outcome for each of them. Hence, if only one of the partners received employment income, only one deduction is applied. The same rule applies to pensions.

**Table 2.31 Personal income tax deductions, 2016-2019**

| Income category                                     | Deductions   |            |
|---|--|------------|
|   | 2016   | 2017 -2019 |
| A – Employment income <sup>(1)</sup>                | Deduction limit: €4,104. If contributions to Social Security are superior, then their amount will be the limit.  | No changes |
| B – Business and professional income <sup>(1)</sup> | Simplified regime: taxable income is 15% of sales or 75% of liberal job earnings or 35% of other services provision earnings. For the simulation, we assume a 25% tax allowance on self-employment income. | No changes |
| E – Investment income                               | No deduction, but only 50% of the yearly gain is taxable. (Not simulated)  | No changes |
| F – Rental income                                   | Repairs and maintenance expenses effectively incurred, municipal tax and expenses with building administration. (Not simulated)  | No changes |
| G – Net worth increases                             | 50% of the net yearly gain is taxable. This rule does not apply to realized gains from the sale of financial assets, where a 10% special rate is applied. (Not simulated)                                  | No changes |
| H – Pensions <sup>(1)</sup>                         | Deduction limit: €4,104 (or yearly pension, if lower)  | No changes |

<sup>(1)</sup> Specific considerations regarding income in A, B and H from disabled/handicapped people (90% incapacity): only 90% of income from categories A, B and H is considered as taxable (as long as the reduction obtained in each category is €2,500 maximum).

- **Tax base**

**Personal Income Tax** = Tax base \* Rate – Tax credits,

Where **Tax base** = **Gross income** – **Income specific deductions** – **Reductions**

According to the splitting system, income from married couples is divided by 2 before applying the tax rate. In the case of married couples, the resulting tax is multiplied by two to obtain the tax liability (before tax credits).

- **Tax schedule**

The taxable income is subjected to tax rates according to income brackets.

**Table 2.32 Personal income tax marginal rates 2016**

| Marginal Rate | 2016             |           |
|---------------|------------------|-----------|
|               | Income bracket   | Deduction |
| 14.5%         | Up to 7,035      | 0         |
| 28.5%         | >7,035 – 20,100  | 984.9     |
| 37.0%         | >20,100 – 40,200 | 2,693.4   |
| 45.0%         | >40,200 – 80,000 | 5,880.0   |
| 48.0%         | Above 80,000     | 8,280.0   |

Plus ‘**additional solidarity tax**’: income above €80,000 and below €250,000 is additionally taxed at 2.5%. Income above €250,000 is additionally taxed at 5%.

**Table 2.33 Personal income tax marginal rates 2017**

| Marginal Rate | 2017             |          |
|---------------|------------------|----------|
|               | Income bracket   | Deduct   |
| 14.5%         | Up to 7091       | 0        |
| 28.5%         | >7091 – 20,261   | 992.74   |
| 37.0%         | >20,261 – 40,522 | 2,714.93 |
| 45.0%         | >40,522 – 80,640 | 5,965.69 |
| 48.0%         | Above 80,640     | 8,375.89 |

Plus ‘**additional solidarity tax**’: income above €80,000 and below €250,000 is additionally taxed at 2.5%. Income above €250,000 is additionally taxed at 5%.

**Table 2.34 Personal income tax marginal rates 2018-2019**

| Marginal Rate | 2018-2019        |           |
|---------------|------------------|-----------|
|               | Income bracket   | Deduction |
| 14.5%         | Up to 7091       | 0         |
| 23.0%         | >7091 – 10,700   | 602.74    |
| 28,5%         | >10,700 – 20,261 | 1,191.24  |
| 35,0%         | >20,261 – 25,000 | 2,508,20  |
| 37.0%         | >25,000 – 36,856 | 3,008.20  |
| 45.0%         | >40,522 – 80,640 | 5,965.68  |
| 48.0%         | Above 80,640     | 8,375.88  |

Plus ‘**additional solidarity tax**’: income above €80,000 and below €250,000 is additionally taxed at 2.5%. Income above €250,000 is additionally taxed at 5%.

Note: In Azores and Madeira the marginal tax rates are lower than in the mainland (not simulated).

**Table 2.35 Net income guarantee ('*Mínimo de Existência*'), 2016-2019 (€/year)**

|  | 2016   | 2017       | 2018                          | 2019       |
|--|--------|------------|-------------------------------|------------|
| Tax rates can't reduce net income below X euros if income originates mainly from employment and pensions               | 8,500  | 8,500      | 14 x 1.5 x SSI <sup>(2)</sup> | No changes |
| Households with 3 or 4 dependent children and a taxable income less or equal to X euros/year are exempt <sup>(1)</sup> | 11,320 | No changes | No changes                    | No changes |
| Households with 5+ dependent children and a taxable income less or equal to X euros/year are exempt <sup>(1)</sup>     | 15,560 | No changes | No changes                    | No changes |

<sup>(1)</sup> Or half the amount in couples choosing individual taxation.

<sup>(2)</sup> 14 x NMW if higher, which has not been the case neither in 2018 nor in 2019.

- **Tax credits**

Certain expenses related to health, education, old age-care, housing, insurance premiums, and disability can be deducted from the taxable income, reducing the total tax liability. Table below lists all personal tax credits and other deductions.

Besides the ones presented, there are also other tax credits associated with private retirement plans, stocks, shares savings plans, mortgage savings accounts, acquisition of computers, acquisition of renewable energy equipment, legal counselling fees, among others. These are not simulated in EUROMOD.

Table 2.36 Personal income tax credits, 2016-2019

| Tax credit group  | Maximum limit  |             |
|---|--|-------------|
|   | 2016   | 2017 - 2019 |
| Tax credits regarding taxpayers and their dependent children or dependent parents or grandparents (defined has having income below minimum pension) | €600 per dependent child (or €725 if aged <3) + €25 per dependent parent (€35 if only one)   | No changes  |
| Health <sup>(1)</sup>   | 15% of expenses (up to €1,000)   | No changes  |
| Education and training <sup>(1)</sup>   | 30% of expenses (up to €800)   | No changes  |
| Retirement homes residency <sup>(1)</sup>   | 25% of expenses (up to €403.75)  | No changes  |
| Housing (for mortgages – both capital and interest – and rents)   | 15% of expenses (up to €296 for mortgages or up to €502 for renters in the official renting regime and other specific limits – see below)  | No changes  |
| Paid alimonies <sup>(1)</sup>   | 20% of the alimonies annual amount (up to €419.22)   | No changes  |
| Disability  | €3,800 per couple both disabled (or €1,900 per individual) + €1,187.50 per disabled dependent + 30% of expenses on special education + 25% of expenses on life insurance of covering exclusively the risks of death, disability or old age | No changes  |
| Invoice claiming <sup>(1)</sup>   | 15% of the VAT paid in products and services from specific sectors (restaurants, hotels, car repair, ...) up to €250   | No changes  |
| Household general expenses <sup>(2)</sup>   | 35% of expenses (up to €250) supported by each partner in the couple or by each single taxpayer or 45% of expenses (up to €35) in the case of lone parents – see below   | No changes  |

<sup>(1)</sup> EU-SILC contains no data on these expenses, so the simulated tax credits are equal to zero.

<sup>(2)</sup> From 2015 on, a new tax credit is given according to documented general expenses. Data may not yield information on consumption, but the limit of €250/year (€35 if single parent) should prove to be easily attainable for every non-exempt taxpayer, thus providing strong arguments to simulate the full limit to every household without the need to regard consumption.

Table 2.37 Specific limits for housing tax credit, 2016-2019

|                            | 2016  | 2017-2019   |
|----------------------------|---|---|
|                            | For individual tax bases up to the 1 <sup>st</sup> income bracket, the limit is augmented to €800   | No changes  |
| For renters paying rent    | For individual tax bases between the 1 <sup>st</sup> income bracket and €30,000, the limit is augmented to:<br>$Limit = 502 + 298 \times \frac{30,000 - Ind. Tax Base}{22,965}$ | ..., the limit is augmented to:<br>$Limit = 502 + 298 \times \frac{30,000 - Ind. Tax Base}{22,909}$ |
|                            | For individual tax bases up to the 1 <sup>st</sup> income bracket, the limit is augmented to €450   | No changes  |
| For owners paying mortgage | For individual tax bases between the 1 <sup>st</sup> income bracket and €30,000, the limit is augmented to:<br>$Limit = 296 + 154 \times \frac{30,000 - Ind. Tax Base}{22,965}$ | ..., the limit is augmented to:<br>$Limit = 502 + 298 \times \frac{30,000 - Ind. Tax Base}{22,909}$ |



**Limits for tax credits:** the tax credits total amount (only on health, education, housing, alimonies, invoice claiming, residential homes and fiscal benefits) is restricted accordingly to the table below. Note: the limits refer to the sum of the tax credits due to expenses on health, education, housing, alimonies, invoice claiming, residential homes and other fiscal benefits. Fixed tax credits regarding the number of taxpayers or other elements in the tax units, disability or tax credits regarding general expenses are not considered for these limits.

**Table 2.38 Limits for tax credit, 2016-2019**

| 2016   | 2017-2019  |
|--|--|
| For individual tax bases up to the 1 <sup>st</sup> income bracket, there is no limit.  | No changes   |
| For individual tax bases between the 1 <sup>st</sup> income bracket and the 4 <sup>th</sup> one, the limit is:<br><br>$\text{Limit} = 1,000 + 1,500 \times \frac{80,000 - \text{Ind. Tax Base}}{73,000}$ | For individual tax bases between the 1 <sup>st</sup> income bracket and the 4 <sup>th</sup> one, the limit is:<br><br>$\text{Limit} = 1,000 + 1,500 \times \frac{80,640 - \text{Ind. Tax Base}}{73,549}$ |
| For individual tax bases above €80,000, the limit is €1,000.   | No changes   |

Note: In tax units with 3+ dependent children, all the above limits are further increased in 5% for each one.

- **Extraordinary surtax on income (2015-2017)**

The **Extraordinary surtax on income** (*‘Sobretaxa extraordinária sobre rendimentos’*) was a special one-off flat rate tax of 3.5%, paid on the personal taxable income earned during the year deducted of an amount equivalent to the annual national minimum wage (14 months). Since 2016, it ceased to be calculated based on the flat rate, being differentiated accordingly to specific income brackets. In 2018, it ceased to be applied.

**Tax credit in the surtax:** 2.5% of the monthly national minimum wage per each dependent child (or half the amount in case of joint taxation), and the amounts deducted at source by the employers or pension providers related to the surtax (not needed for EUROMOD’s simulation). The resulting surtax may not be negative.

**Safeguard clause:** for a certain surtax rate, net income should not be inferior to what would result if gross income was at the top limit of the previous bracket.

**Table 2.39 Surtax rates, 2016-2017**

| 2016               |          | 2017               |          |
|--------------------|----------|--------------------|----------|
| Income bracket (€) | Rate (%) | Income bracket (€) | Rate (%) |
| Up to 7,070        | 0.00     | Up to 20,261       | 0.00     |
| > 7,070 <= 20,000  | 1.00     | > 20,261 <= 40,522 | 0.88     |
| > 20,000 <= 40,000 | 1.75     | > 40,522 <= 80,640 | 2.75     |
| > 40,000 <= 80,000 | 3.00     | > 80,000           | 3.21     |
| > 80,000           | 3.50     |                    |          |

Note: In joint taxation, the income brackets limits are halved, and the resulting surtax is multiplied by 2.

### 2.7 Pension cuts (*pcuts\_pt*)

Due to the public debt crisis, pensions were reduced by the introduction of the **Extraordinary Solidarity Contribution** on pensions (ESC) (*Contribuição Extraordinária de Solidariedade*).

Notwithstanding, the ESC was been reduced over the years, and in 2016 the ESC cuts were halved (7.5% cut to the amounts between 11 and 17 x SSI, and 20% cut to the amounts above 17 x SSI). In 2017, the ESC was abolished.

Note: for all years, a pensioner's total pension amount is observed (not just the single pension). For instance, if someone receives an old age and a survivor pension, both amounts should be summed to attain the total liabilities. Total pension = old age pension + survivor pension + disability benefit.

### 2.8 Public wage cuts (*yempb\_pt*)

Due to the public debt crisis, public wages were reduced. Notwithstanding, the cuts was been reduced over the years, and in 2016 they were due to be eliminated in a phased schedule, meaning that at the start of every quarter, the wage cuts were reduced 20% more.

**EUROMOD note:** the simulation of these cuts and changes between years consider that they are already implicit in the wages at the gross level, in more recent datasets. For instance, when using a dataset from 2011, the policy concerning wage cuts must be turned off in 2011-2014 (because data already shows its effect). Also, the set of reductions occurred in the cuts in 2016 must take that into account.

### 3. DATA

#### 3.1 General description

EUROMOD database results from EU-SILC, UDB version 2017-2 (EU-SILC – Cross 2017 Version 181109). The Portuguese EU-SILC survey is an annual survey with a four-year rotational panel. Fieldwork was carried out in 2017, between March 18<sup>th</sup> and June 18<sup>th</sup>, and contains data regarding the incomes of 2016. The database is provided by Eurostat.

The EU-SILC sample is composed of four independent sub-samples, where each one follows a stratified two-stage cluster sampling design. The 2017 sampling frame was selected from the National Dwellings Register (NDR), which uses information gathered in the 2011 Census. It is constituted by private dwellings of usual residence and excludes collective households and institutions. Its size is approximately 1,4 million dwellings of usual residence.

The selection of the sample followed a stratified (NUTS II stratification) and multistage sampling design. The primary sampling units, consisting of cells of the INSPIRE grid of 1km<sup>2</sup>, were selected with probability proportional to the number of dwellings of usual residence. And the secondary sampling units (dwellings) were systematically selected in each primary sampling unit. Information is collected on all households and individuals living in the selected dwelling.

**Table 3.1 EUROMOD database description**

|                         |   |
|-------------------------|---|
| EUROMOD database        | PT_2017_a2  |
| Original name           | EU-SILC UDB   |
| Provider                | Eurostat  |
| Year of collection      | 2017  |
| Period of collection    | Fieldwork executed between March 18 <sup>th</sup> and June 18 <sup>th</sup>   |
| Income reference period | 2016  |
| Sampling                | Stratified, multi-stage, clustered  |
| Unit of assessment      | Household and personal  |
| Coverage                | Private households (households living at private residential addresses). Individuals living in institutional households (e.g. in care or imprisonment institutions, etc.) are excluded. |
| Final sample size       | 12,091 households (of which 30,007 individuals)   |

Source: Statistics Portugal (2017) 'ICOR 2017 – Documento Metodológico Versão 3.7'

#### 3.2 Sample quality and weights

##### 3.2.1 Non-response

The original sample size is composed by 14,052 households. However, only 12,091 households had interviews completed and accepted in the database. The number of persons in those households was 30,007 (25,848 with 16+ years old).

The household response rate for the total sample was of 92.2%, and it is defined as:

$$\frac{\text{No. of addresses successfully contacted}}{\text{No. of valid addresses contacted}} \times \frac{\text{No. of household interviews completed and accepted for the database}}{\text{No. of eligible households at contacted addresses}}$$

Non-response is corrected by reweighting the final sample, *i.e.*, by recalculating the sample weights.

### 3.2.2 Weights

Adjustments to the sample weights are made for the whole sample (combining the four sub-samples) at household and individual level using the SAS macro CALMAR. An integrative calibration is applied to ensure consistency between households and individuals, because all household members receive the same cross-sectional weight as the household they belong to.

In the case of households, the calibration variables are ‘*number of households by household size (1, 2, 3 and 4 or more household members)*’ and ‘*number of households by NUTS II*’. The source of information is the Labour Force Survey.

The calibration variables for individuals are the distribution of the population by five-year age groups and by gender, according to the Independent Estimates of the Population.

The following table shows the descriptive statistics for the grossing-up weights used.

**Table 3.2 Descriptive statistics of the grossing-up weight *rb050***

|                     | EU-SILC UDB Portuguese data |
|---------------------|-----------------------------|
| Number              | 30,007                      |
| Mean                | 343.57                      |
| Median              | 232.22                      |
| Maximum             | 2,112.68                    |
| Minimum             | 7.08                        |
| Max/Min             | 298.31                      |
| Decile 1            | 38.45                       |
| Decile 9            | 763.20                      |
| Decile 9 / Decile 1 | 19.85                       |

### 3.3 Data adjustment

Adjustments to the variables are kept to a minimum. Some minor data cleaning is done to ensure that the relationships of individuals within households are consistent. In order to guarantee consistency between demographic and income variables which refer to the previous year (and on which EUROMOD simulation are based), all children born between the end of the income reference period and the data of the interview (57 cases) were dropped from the sample.

However, the weights were not readjusted to consider the drop of these individuals. EUROMOD final sample contains 12,091 households and 29,950 individuals.

### 3.4 Imputations and assumptions

#### 3.4.1 Time period

In the EU-SILC dataset, the income reference period is the previous year of the survey. All monetary amounts are expressed in annual terms. Dividing them by 12, these are converted into monthly amounts for the EUROMOD database.

There are two age variables in the EU-SILC dataset: one relates to the age of the individual at the moment of the survey, and the other to the age at the end of the income reference period. EUROMOD uses the first one to characterise all individuals in the dataset.

### 3.4.2 Gross incomes

The EU-SILC survey contains information on both gross and net monetary incomes, if applicable, and flag variables, which indicate if the observation has been collected in a gross or net form.

Income data can be provided by respondents in either gross or net values. Hence, the net series is obtained by Statistics Portugal using a specific gross-to-net micro simulation model (see more information regarding the model in Rodrigues, 2007).

### 3.4.3 Disaggregation of harmonized variables and other imputations

Some variables required for the simulation of the tax-benefit system in Portugal are not available in the EU-SILC UDB. Thus, they must be fully imputed in the EUROMOD dataset by splitting the original variables.

- a. **Old age pension** splits into contributory pensions (*poac*) and means-tested non-contributory benefit for the elderly (*poanc* – old age social pension). The splitting is based on the variables PY102G (Old age benefits – Contributory and non-means-tested), PY103G (Old age benefits – Non-Contributory and means-tested) and PY104G (Old age benefits – Non-contributory and non-means-tested), on the benefit eligibility rules relating to age and income of the elderly, and the observed total amount of this benefit in the dataset.
- b. **Unemployment benefit** in the UDB split into contributory unemployment benefit (*bunct*) and the means-tested unemployment benefit (*bunnc*). The splitting is based on the variables PY091G (Unemployment benefits – Contributory and means-tested) and PY092G (Unemployment benefits – Contributory and non-means-tested).
- c. **The aggregate family benefits** variable in the UDB splits into two components: child benefit (*bch*), which is based on the variable HY053G (family/children-related allowances – Non-contributory and means-tested), and Other family benefits (*bfa*), based on the residual amount (HY050G – HY053G).
- d. **Social exclusion benefits** split into three components: Solidarity supplement for older persons (*bsaoa*), minimum income benefit (*bsa00*) and Other social assistance benefits (*bsaot*). However, in the Portuguese EU-SILC 2017 the new variables HY061g, HY062g and HY064g are missing and have the flag=-2. This implies that  $HY060g = HY063g$  and all the HY060g amount is non-contributory and means-tested. The approach followed begins to identify the beneficiaries of Solidarity supplement for older persons between the households that have  $HY060g > 0$ , using both the benefit rules and the age and income of the potential beneficiaries. Secondly, we identify the eligibility to *bsa00* within households with  $HY060g - bsaoa > 0$ . Finally, Other social assistance benefits are computed as  $HY060g - bsaoa - bsa00$ . The three components of *bsa* are attributed to the same member of the household that get *bsa*. This allows that in EUROMOD dataset  $bsa = bsaoa + bsa00 + bsaot$  for all persons.

Education level is imputed to children aged under 16 according to their age and the rules of the Portuguese education system.

Incomes reported at household level are assigned to the relevant member of the household or to the first member closer to 45 years old.

### 3.5 Uprating factors

Uprating factors are used to account for any time inconsistencies between the input dataset and the policy year. Each monetary variable (*i.e.*, each income component) is updated to account for changes

in the non-simulated variables that have taken place between the year the data was collected and the simulation year of the tax-benefit system. Uprating factors are generally based on the changes in the average value of the relevant income component between the two years. For detailed information on the construction of each uprating factor and corresponding sources, see Annex I.

As a rule, uprating factors are given in Annex I for both simulated and non-simulated income components included 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 uprated original variables in the dataset. Uprating factors for simulated variables are given to enable the user to turn off the simulation of a particular variable if and when required.

## **4. VALIDATION**

### **4.1 Aggregate Validation**

EUROMOD results are validated against external benchmarks. Detailed comparisons of the number of individuals receiving a particular income component and total annual amounts are given in Annex III. Market incomes, non-simulated taxes and benefits in the input dataset, and simulated taxes and benefits are validated against external official data. The main discrepancies between EUROMOD results and external benchmarks are discussed in the following subsections, as well as the factors that may explain the differences.

#### **4.1.1 Components of disposable income**

This subsection outlines the differences in the disposable income definition in EUROMOD and EU-SILC 2017. The major components of disposable income are the same in both sources: original incomes (+); benefits (+), taxes (-), employee social insurance contributions (-); and self-employed social insurance contributions (-). However, there are two differences at the individual level components:

- i) The EU-SILC 2017 definition includes the (imputed) annual value of (using) a company car, while EUROMOD excludes it; and
- ii) Pensions from individual private plans are included in the EUROMOD definition used in EUROMOD, while EU-SILC 2017 excludes it.

Besides these differences, the amount of the disposable income of the same household can be different because the simulated income components in EUROMOD can differ from their observed counterparts in EU-SILC dataset.

**Table 4.1 Components of disposable income**

|  | EUROMOD   | EU-SILC<br>2017            | Notes   |
|--|-----------|----------------------------|---|
| Household disposable income                    | ils_dispy | hy020                      |   |
| Employee cash or near cash income              | yem       | py010g                     | yem derived from py010g   |
| Company car                                    | -         | py021g                     |   |
| Cash benefits or losses from self-employment   | yse       | py050g                     | yse derived from py050g   |
| Pension from individual private plans          | ypp       | -                          | ypp derived from py080g   |
| Investment income                              | yi        | hy090g                     | yi derived from hy090g  |
| Income from rental of a property or land       | yprrt     | hy040g                     | yprrt derived from hy040g   |
| Income received by people aged under 16        | yot       | hy110g                     | yot derived from hy110g   |
| Regular inter-household cash transfer received | ypt       | hy080g                     | ypt derived from hy080g   |
| Regular inter-household cash transfer paid (-) | xmp       | hy130g                     | xmp derived from hy130g   |
| Old-age benefits                               | poact_s   | py100g                     | poact_s and poanc_s derived from the split of py100g into contributory and non-contributory old age pensions  |
|  | poanc_s   | py102g<br>py103g<br>py104g |   |
| Survivors benefits                             | bsu       | py110g                     | bsu derived from py110g   |
| Disability benefits                            | bdi       | py130g                     | bdi derived from py130g   |
| Unemployment benefits                          | bunct_s   | py090g                     | bunct_s derived from py092g   |
|  | bunnc_s   | py091g<br>py092g           | bunnc_s derived from py091g   |
| Housing allowances                             | bho       | hy070g                     | bho derived from hy070g   |
| Family/children related allowances             | bfa       | hy050g                     | bfa derived from the difference between hy050 and hy053   |
|  | bch_s     | hy053g                     | bch_s derived from hy053g   |
| Education related allowances                   | bed       | py140g                     | bed derived from py140g   |
| Sickness benefits                              | bhl       | py120g                     | bhl derived from py120g   |
| Social exclusion not elsewhere classified      | bsaot     | hy060g                     | hy060g split into social integration income (bsa00_s), solidarity supplement for the elderly (bsaoa_s) and other social assistance benefits (bsaot)         |
|  | bsaoa_s   |                            |   |
|  | bsa00_s   |                            |   |
| Tax on income and social contributions (-)     | tin_s     | hy140g                     | EUROMOD data includes three simulated components: tin_s (simulated income tax); tscee_s (simulated SIC employee) and tscse_s (simulated SIC self-employee). |
|  | tscee_s   |                            |   |
|  | tscse_s   |                            |   |
| Regular taxes on wealth (-)                    | tpr       | hy120g                     | tpr derived from hy120g   |

Note: all “\_s” variables are EUROMOD simulated benefits or taxes.

#### 4.1.2 Validation of incomes inputted into the simulation

Note: Please see Annex III for tables.

Table 4.2 (in Annex III) compares the number of **employed** and **unemployed** people estimated in EUROMOD against the external data source. The latter’s evolution shows the crisis aftermath developments, with employment increasing by 5.7% between 2016 and 2018 and unemployment falling by 36.1% during the same period. It also shows that there is a clear overestimation of the number of unemployed in EU-SILC (27% to 26% ‘extra’ unemployed compared with the external



source, between 2016 and 2018), and underestimation of employed people (around 4% in EU-SILC). There are certainly differences in the methodologies used by each source to calculate these figures, but it is always to be expected that using EU-SILC data will lead to different values.

However, what is most important for the EUROMOD validation process is the evolution of these comparison ratios. As the number of employed people is kept constant for the entire period in EUROMOD, it is not surprising that the rise in the employed numbers in the official statistics results in bringing these two figures apart (comparing ratio evolved from 0.94 to 0.98). An opposite and less expressive deviation happens within the unemployment figures: as the number of unemployed was held constant in EUROMOD, the drop on the external source figure narrowed the gap between the two amounts until 2018 (comparing ratio evolved from 1.27 to 1.26).

Tables 4.3 and 4.4 in Annex III show the number of recipients and annual levels of income earned from different sources reported but not simulated in EUROMOD. Unfortunately, it is not possible to obtain data from external sources to validate all types of income and for all the simulation years. The number of **employees** and the level of **total wages** are quite similar to the figures obtained from external sources. Actually, the number of employees remains fixed in EUROMOD, while it rises in the external statistics as expected due to the recovery in employment. Concerning the wages, they also rise in EUROMOD, but this is only due to the uprating factors and changes in the policies – namely civil servants cuts reductions and the updates in the private aggregates – rather than the increase in employment, while the external statistics rise should result from both factors, amongst others. However, the values of gross wages clearly overestimated the official data by around 10%. This overestimation of gross incomes comes directly from the EU-SILC 2017 data and is not a consequence of EUROMOD modelling.

The number of recipients of **self-employment** income are very similar, whereas the level of self-employment income appears clearly over-estimated (1.57 in 2016). The complexity of the social security contributions system could explain part of this difference. The Portuguese version of the EU-SILC (and EUROMOD) attributes social security contributions to most of the self-employed that actually do not pay them due to the multiple exemption schemes and to the lack of capacity to deal with tax evasion<sup>3</sup>.

Tables 4.5 and 4.6 (in Annex III) show the number of recipients of the non-simulated taxes and benefits and the respective aggregate amounts. **Disability** and **survivor's** benefits are taken from Social Security (SS) data sources and are not corrected or simulated in EUROMOD. The number of recipients are underestimated in the EU-SILC dataset compared to the SS external sources (except in 2018, in the disability benefit case). Consequently, EUROMOD reproduces this underestimation. However, the aggregate amount appears to be close to the one recorded by the external sources (1.03 in 2016).

The number of **sickness benefits** recipients is clearly underreported in the EU-SILC data. The number of recipients is below one third of the number reported by the SS external sources. The aggregate amount also appears to be underestimated. One possible explanation is that external data is constructed using sickness episodes along the year and there is no information on the EU-SILC data about the number of individuals experiencing various episodes along the year (e.g., counting of a same individual experiencing various episodes along the year).

### 4.1.3 Validation of outputted (simulated) incomes

*Note: Please see Annex III for tables.*

Tables 4.7 and 4.8 (show that the figures on the **non-contributory pension** (“*Social Pension*”) are underestimated, especially when it comes to the aggregate amounts (0.37 in 2016).

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<sup>3</sup> On the informal economy and tax evasion in Portugal, see CEAFGA (2008).

The validation process reveals a differentiated performance of the simulation of the number of **unemployment benefits** recipients between 2016 and 2018 (62 to 77% in the main benefit, although comparison ratios are lower for the less expressive ‘unemployment assistance benefit’ – 47% in 2016 to 68% in 2018). Such differences over time may be explained by the decrease in unemployment in Portugal over the period and the corresponding impact on its total expenditure, whilst EUROMOD relies on the structural data from the first year, *i.e.*, the number of recipients is kept constant throughout (the default simulation process is basically a split of the original unemployment benefit variable).

The simulation of **child benefit** shows that the figures are quite accurate between 2016 and 2018, both in number of recipients and total amounts.

The difficulty of simulating the minimum income program in Portugal (“*social integration income*”) stems from the difficulties in capturing the means tested entitlement conditions in the simulations, the complex issue of non-take up, and the changes occurred in the entitlement conditions. The overvaluation of the number of recipients is particularly relevant during the whole period of 2016-2018 (around 40%). The simulated benefit amount shows an overestimation of around 38% in 2016.

An adjustment at the core of the simulation was made regarding the number of recipients of the **solidarity supplement for the elderly**, due to a misalignment of the EUROMOD values and the external source. The amounts in 2016 shows an underestimation of around 20%.

Tables 4.7 and 4.8 also include the **number of taxpayers** and **amount of taxes** collected during the period 2016-2019 as simulated by EUROMOD. Unfortunately, there is little external statistics to compare against EUROMOD’s results. However, the EUROMOD seems to reveal an important overestimation of the amount of the income tax in 2016 (21%) that could be associate with the overestimation of gross wages amounts detected before. Besides, the impossibility of simulating some tax credits as well as the lower tax rates in the autonomous regions of Azores and Madeira could be also leading the observed overestimation.

The simulation of **social contributions** seems quite accurate when compared with external sources. However, some caution must be held against the external statistics, which result from gathering complex and somewhat ambiguous data on different regimes, sources and administrative or budgetary statistics. No information is available regarding the number of individuals paying contributions.

## 4.2 Income distribution

*Note: Please see Annex III for tables.*

The analysis in this section provides the indicators of income distribution, poverty and inequality. 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 is 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 individuals aged 14+ = 0.5; additional individuals aged under 14 = 0.3.

### 4.2.1 Income inequality

In this section, the changes in income distribution estimated by EUROMOD are compared with the “official” results published by Eurostat and Statistics Portugal as computed from different waves of the EU-SILC. Currently, the latest available EU-SILC operation is 2018’s thus enabling its use as a benchmark for the EUROMOD estimates between 2016 and 2017.

The equivalised disposable income simulated in EUROMOD is slightly different from the original EU-SILC data. Several reasons may explain this difference:

- i) Inclusion of different sources of income in the definition of household income as mentioned earlier. For example, the EU-SILC includes in disposable income (variable hy020) the company car (py021), which is not included in EUROMOD; and EUROMOD includes pensions received from individual private plans (py080) and repayments/receipts for tax adjustment, not included EU-SILC;
- ii) Changes in the sample and weighting of the observations;
- iii) Changes in the amounts of some income sources due to their simulation in EUROMOD:
  - a. In general, simulated social benefits rely on full take up, which should generate significant differences in disposable income when compared to EU-SILC;
  - b. The social supplement for the elderly constitutes an exception, as it is adjusted so that simulated take up is coherent with actual take up. But as EU-SILC underestimates the total amount received, there are again differences between simulated and actual disposable income.

Table 4.9 shows the distribution of equivalised income by deciles according to EUROMOD and Eurostat. The mean disposable income simulated by EUROMOD is slightly higher (3% in the base year and in 2017) than the figures provided by Eurostat. However, the share of the first decile estimated by EUROMOD is higher (19% in 2016 and 6% in 2017), possibly due to the assumption of full take-up in the simulation for most of the benefits. The differences between EUROMOD and Eurostat figures are almost unnoticeable for the other nine deciles.

The same table also shows the main inequality indices. Compared to the EU-SILC figures, the EUROMOD simulation estimates slightly lower income inequality indices in 2016 (EUROMOD higher income share of the bottom decile (see above) can explain, at least partially, this discrepancy) and slightly higher in 2017 (1%).

### 4.2.2 Poverty rates

Table 4.10 shows that the poverty rates estimated by EUROMOD for the base year are very similar to those computed using the EU-SILC data for poverty lines defined as 60% and 70% of the median equivalent income. The most expressive differences happen when comparing poverty rates defined at 40% and 50% of the median. These results suggest that the increase in incomes in the lower part of the distribution as discussed above is “taking individuals out of poverty” the lower the threshold is, this meaning that the difference between the two income distributions is higher at the extreme lower part.

### 4.3 Validation of minimum wage

Including minimum wage adjustments as part of the EUROMOD only influence very slightly the results (less than 1%), as it can be seen in table 4.11. For example, the equivalised disposable income will be only 1% higher when minimum wage adjustments are switched on,.

### 4.4 Summary of “health warnings”

This final section summarises the main findings in terms of particular aspects of the Portuguese part of EUROMOD or its database that should be considered while using the model and interpreting its results.

- Care should be taken in interpreting results for small sub-groups due to small sample sizes.
- The weights do not control for the variations of unemployment in Portugal over the period under consideration.
- No adjustments are made for structural changes in the characteristics of the population between the data income collection year (2016) and the simulation years.
- The Portuguese version of the EU-SILC clearly underestimates some social benefits, and this is not corrected by EUROMOD unless these benefits are simulated.

- The simulation of some benefits in EUROMOD is conditioned by the difficulty of splitting some income variables from the EU-SILC user database and by the difficulty some of the recipients have in clearly identifying the source of their incomes.
- Non-take-up of benefits is not modelled in most policies (the exception being the Social Supplement for the Elderly). This has the effect of inflating the simulated incomes of households who do not actually take up these benefits. This is particularly relevant in the simulation of child benefits and social integration income. And although the Social Supplement for the Elderly simulation adjusts the number of recipients to match the actual benefit's take-up, as EU-SILC underestimates the same number (and amounts), this has an impact on the comparison between EUROMOD results and other indicators based on disposable income obtained from EU-SILC (poverty rate, inequality indices, etc.).
- Comparisons between EUROMOD and administrative figures on personal income tax must take into consideration the existence of tax evasion, as well as the lack of adequate information for the simulation of a number of tax allowances and deductions.
- Parental leave benefits are only simulated from 2015 to 2019 in EUROMOD I2.0. They are defined in an extension (Parental Benefits Extension) that is switched off in the baselines, i.e. the non-simulated component (*bfa*) is being used. When the extension is switched on, the non-simulated component is reduced by subtracting the value of the simulated components (*bmapr\_s*, *bplct\_s*, *bplnc\_s*). The simulated numbers might differ significantly from external statistics as some policy rules cannot be simulated accurately due to lack of information in the underlying data.

## 5. REFERENCES

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Eurostat (2019). Website database available at [www.ec.europa.eu/eurostat](http://www.ec.europa.eu/eurostat)

- *Sources for tax-benefit descriptions/rules*

Social benefits descriptions and rules (in Portuguese): [www.seg-social.pt](http://www.seg-social.pt)

Online legislation (in Portuguese): [www.dre.pt](http://www.dre.pt)

## ANNEX I: UPRATING FACTORS

Table I.1 Monetary updating raw indices (in relation to 2006)

| Variable  |                        | 2016   | 2017   | 2018   | 2019   | Source/comments  |
|---|------------------------|--------|--------|--------|--------|--|
| <b>Employment income</b>                                    |                        |        |        |        |        |  |
| Dependent employment income                                 |                        |        |        |        |        |  |
| Civil servants  | <b>yem</b>             | 106.64 | 106.64 | 107.71 | 108.78 |  |
| Private sector employees                                    |                        | 121.36 | 123.97 | 127.86 | 131.88 | Soc. Security (Annual rate of change of average wages declared by employees for contributory purposes) |
| Self-employed income  | <b>yse</b>             | 121.36 | 123.97 | 127.86 | 131.88 | In line with private wages   |
| <b>Pensions</b>   |                        |        |        |        |        |  |
| Main old age pension, survivors pension, disability pension | <b>poact, psu, pdi</b> | *      | *      | *      | *      | PT Law on pensions updating (pensions updated according to every year updating schedule)               |
| Social pension  | <b>poanc</b>           | 202.34 | 203.35 | 207.01 | 210.32 | Base amount of the social pension  |
| Private pension   | <b>ypp</b>             | 115.09 | 116.66 | 117.81 | 118.76 | 2006-16: Inflation "without deflation" (inflation as 0 on years with deflation)                        |
| <b>Unemployment benefits</b>                                |                        |        |        |        |        |  |
| Insurance and assistance                                    | <b>bun, bunn</b>       | 123.57 | 125.73 | 128.43 | 132.47 | In line w/private wages, but lagged one year   |
| <b>Sickness benefits</b>                                    |                        |        |        |        |        |  |
| Sickness benefit (for civil servants)                       |                        | 106.64 | 106.64 | 107.71 | 108.78 | In line with civil servant wages   |
| Sickness benefit (for private sector employees)             | <b>bhl</b>             | 121.36 | 123.97 | 127.86 | 131.88 | In line with private wages   |
| <b>Family and child benefits</b>                            |                        |        |        |        |        |  |
| Family benefits (for civil servants)                        |                        | 106.64 | 106.64 | 107.71 | 108.78 | Essentially, parental leave benefits (updated in line w/civil servant wages)                           |
| Family benefits (for private sector)                        | <b>bfa</b>             | 121.36 | 123.97 | 127.86 | 131.88 | Essentially, parental leave benefits (updated in line w/private wages)                                 |
| Child benefit   | <b>bch</b>             | 419.22 | 421.32 | 428.9  | 435.76 | In line with Social Support Index  |
| <b>Social assistance</b>                                    |                        |        |        |        |        |  |
| Social assistance and social assistance (other)             | <b>bsa, bsaot</b>      | 419.22 | 421.32 | 428.9  | 435.76 | In line with Social Support Index  |
| Social integration income                                   | <b>bsa00</b>           | 180.99 | 183.84 | 186.68 | 189.66 | PT law on social integration income's threshold update   |
| Social supplement for the elderly                           | <b>bsaoa</b>           | 5059   | 5084.3 | 5175.8 | 5258.6 | PT law on social supplement for the elderly's threshold update   |

| Variable  |                            | 2016   | 2017   | 2018   | 2019   | Source/comments   |
|---|----------------------------|--------|--------|--------|--------|---|
| <b>Other benefits</b>                                 |                            |        |        |        |        |   |
| Education benefits                                    | <b>bed</b>                 | 419.22 | 421.32 | 428.9  | 435.76 | In line with Social Support Index   |
| Housing benefits                                      | <b>bho</b>                 | 419.22 | 421.32 | 428.9  | 435.76 | In line with Social Support Index   |
| Imputed benefit in kind                               | <b>kfbbc</b>               | 113.81 | 115.37 | 116.51 | 117.45 | 2006-15: Inflation Dec'xx (Total aggregates; src: Statistics Office);         |
| <b>Investment/property income</b>                     |                            |        |        |        |        |   |
| Investment income                                     | <b>yi</b>                  | 186.5  | 194.6  | 201.6  | 206.64 | 2006-2015: Annual GDP current prices (src: Statistics Office);                |
| Property income (rent)                                | <b>ypr</b>                 | 113.81 | 115.37 | 116.51 | 117.45 | INE (Statistics Portugal) – inflation   |
| <b>Other income</b>                                   |                            |        |        |        |        |   |
| Private transfers                                     | <b>ypt</b>                 | 121.36 | 123.97 | 127.86 | 131.88 | In line w/private wages   |
| Non-cash income                                       | <b>kfb</b>                 | 113.81 | 115.37 | 116.51 | 117.45 | INE (Statistics Portugal) - inflation   |
| Income received by <16                                | <b>yot</b>                 | 113.81 | 115.37 | 116.51 | 117.45 | INE (Statistics Portugal) - inflation   |
| <b>Assets</b>   |                            |        |        |        |        |   |
| Financial capital                                     | <b>afc</b>                 | 113.81 | 115.37 | 116.51 | 117.45 | INE (Statistics Portugal) - inflation   |
| <b>Expenditure items</b>                              |                            |        |        |        |        |   |
| Rent paid; housing costs (other); maintenance payment | <b>xhert, xhcot, xmp</b>   | 113.81 | 115.37 | 116.51 | 117.45 | INE (Statistics Portugal) - inflation   |
| Interest on mortgage payment                          | <b>xhcmomi</b>             | 237.92 | 238    | 241    | 241    | 2006-2015: average mortgage cost (interest+mortgage) (src: Statistics Office) |
| Expenditure on private pensions                       | <b>xpp</b>                 | 113.81 | 115.37 | 116.51 | 117.45 | INE (Statistics Portugal) - inflation   |
| <b>Tax and SICs</b>                                   |                            |        |        |        |        |   |
| Property tax  | <b>tpr</b>                 | 113.81 | 115.37 | 116.51 | 117.45 | INE (Statistics Portugal) - inflation   |
| Income tax; Income tax repayments/receipts            | <b>tin, tad</b>            | 121.36 | 123.97 | 127.86 | 131.88 | In line w/private wages   |
| SIC employee, SIC self-employed; SIC employer         | <b>tscee, tscse, tscer</b> | 121.36 | 123.97 | 127.86 | 131.88 | In line w/private wages   |
| Income tax and SICs                                   | <b>tis</b>                 | 121.36 | 123.97 | 127.86 | 131.88 | In line w/private wages   |
| <b>Other</b>  |                            |        |        |        |        |   |
| Disposable income                                     | <b>yds</b>                 | 113.81 | 115.37 | 116.51 | 117.45 | INE (Statistics Portugal) - inflation   |
| Imputed house rent                                    | <b>kivho</b>               | 113.81 | 115.37 | 116.51 | 117.45 | INE (Statistics Portugal) - inflation   |

Note: for more information refer to the model and DRD. Not all updated components are used for EUROMOD calculations. Simulated values used instead of updated ones where relevant.

## ANNEX II: POLICY EFFECTS IN 2018-2019

Table II.1 and figure II.1 show the effect that 2019 policies have on disposable income by income component and income decile group. The effect is estimated as the difference between simulated household income under 2019 tax-benefit policies (deflating monetary parameters by Eurostat's Harmonized Index of Consumer Prices, HICP) and net incomes simulated under the year 2018 policies, as a percentage of mean equivalised household disposable income in 2018.

Changes in 2019 have almost no effect on the income distribution. In general, households' disposable income is increased by 0.18%, with the bottom income deciles recording a greater increment (increase in the first decile of 0.84%). Still, when looking at the changes in income broke down by decile, there are some results that reflect the impact of some of the other policies. For instance, means-tested benefits grow larger in the first deciles (0.93% and 0.56% in the first two deciles compared to an overall 0.19%) – this is the expected outcome of increasing child benefits for toddlers, especially in the lower income families, or of increasing in real terms the social integration income amount.

Besides, changes in social insurance contributions (SICs) paid by the self-employed had, on average, a slightly positive effect (0.05%) on households' disposable income. The self-employed SICs scheme experienced significant changes in 2019 such as the implementation of a new base of incidence based on an actual income, the removal of the exemption for low self-employment income and the decrease in the contributory rate. These changes had, however, different effects along the income distribution: household disposable income decreased at the bottom, most likely due to the abolition of the exemption for low self-employment income; whilst the top decile groups gained on average, mainly due to the decrease in the contributory rate.

Conversely, the effect of direct taxes on mean household disposable income was negative (-0.14%). The main explanation driving the income losses might be the “bracket creep”, i.e. the fact tax brackets did not change along with inflation while wages increased leading, eventually, to higher average tax rates. In this regard, the top income deciles were the ones experiencing the higher income losses in relative terms (from -0.14 to -0.19%).

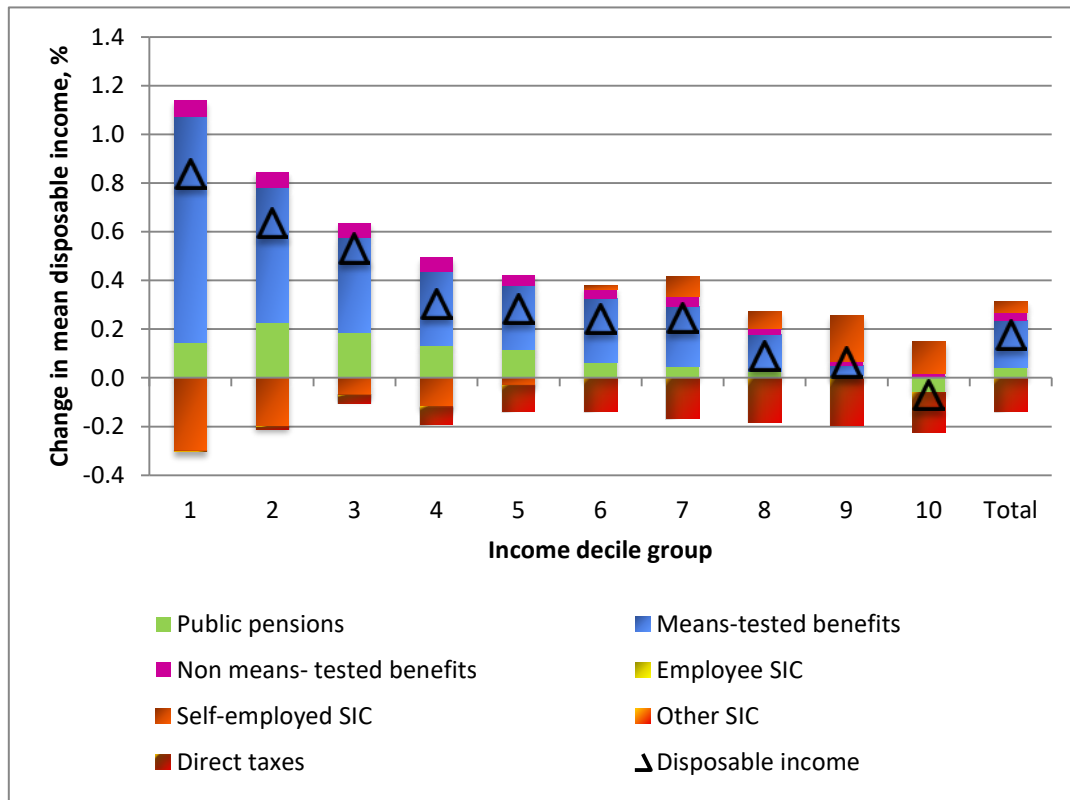
**Table II.1 Policy effects in 2018-2019, using the CPI-indexation (CPI= 1.010638), %**

| Decile       | Original income | Public pensions | Means-tested benefits | Non-means-tested benefits | Employee and pensioners SIC | Self-employed SIC | Other SIC   | Direct taxes | Disposable income |
|--------------|-----------------|-----------------|-----------------------|---------------------------|-----------------------------|-------------------|-------------|--------------|-------------------|
| 1            | 0.00            | 0.14            | 0.93                  | 0.07                      | 0.00                        | -0.30             | 0.00        | 0.00         | 0.84              |
| 2            | 0.00            | 0.23            | 0.56                  | 0.06                      | 0.00                        | -0.20             | 0.00        | -0.01        | 0.63              |
| 3            | 0.00            | 0.19            | 0.39                  | 0.06                      | 0.00                        | -0.07             | 0.00        | -0.03        | 0.53              |
| 4            | 0.00            | 0.13            | 0.30                  | 0.06                      | 0.00                        | -0.12             | 0.00        | -0.07        | 0.30              |
| 5            | 0.00            | 0.12            | 0.26                  | 0.05                      | 0.00                        | -0.03             | 0.00        | -0.11        | 0.28              |
| 6            | 0.00            | 0.07            | 0.26                  | 0.04                      | 0.00                        | 0.02              | 0.00        | -0.14        | 0.24              |
| 7            | 0.00            | 0.05            | 0.24                  | 0.04                      | 0.00                        | 0.08              | 0.00        | -0.17        | 0.25              |
| 8            | 0.00            | 0.03            | 0.15                  | 0.02                      | 0.00                        | 0.07              | 0.00        | -0.18        | 0.09              |
| 9            | 0.00            | 0.01            | 0.04                  | 0.02                      | 0.00                        | 0.19              | 0.00        | -0.19        | 0.06              |
| 10           | 0.00            | -0.06           | 0.01                  | 0.01                      | 0.00                        | 0.13              | 0.00        | -0.16        | -0.07             |
| <b>Total</b> | <b>0.00</b>     | <b>0.04</b>     | <b>0.19</b>           | <b>0.03</b>               | <b>0.00</b>                 | <b>0.05</b>       | <b>0.00</b> | <b>-0.14</b> | <b>0.18</b>       |

Note: 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 2018, using the modified OECD equivalence scale. Each policy system has been applied to the same input data, deflating monetary parameters of 2019 policies by Eurostat's Harmonized Index of Consumer Prices (HICP).



Figure II.1 Policy Effects 2018-19, using CPI indexation (CPI= 1.010638), %



## **ANNEX III: MACROVALIDATION TABLES**

## Table 4.2-Number of employed and unemployed

|                      | EUROMOD | External | Ratio |      |      |      |      |      |      |
|----------------------|---------|----------|-------|------|------|------|------|------|------|
|                      | 2016    | 2016     | 2017  | 2018 | 2019 | 2016 | 2017 | 2018 | 2019 |
| Number of employed   | 4340    | 4605     | 4757  | 4867 | N/A  | 0.94 | 0.97 | 0.98 | N/A  |
| Number of unemployed | 728     | 573      | 463   | 366  | N/A  | 1.27 | 1.24 | 1.26 | N/A  |

Notes: EUROMOD number of employed and unemployed computed based on months in employment/unemployment - numbers computed as averages of monthly data over the year.

Source: Statistics Portugal

Table 4.3-Market income in EUROMOD -Number of recipients (in thousands)

|                        | EUROMOD | External | Ratio |      |      |      |      |      |      |
|------------------------|---------|----------|-------|------|------|------|------|------|------|
|                        | 2016    | 2016     | 2017  | 2018 | 2019 | 2016 | 2017 | 2018 | 2019 |
| Employment income      | 4088    | 3787     | 3949  | 4057 | N/A  | 1.08 | 1.04 | 1.01 | N/A  |
| Self-employment income | 572     | 570      | 560   | 554  | N/A  | 1.01 | 1.02 | 1.03 | N/A  |
| Private pensions       | 44      | N/A      | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  |
| Rent income            | 464     | N/A      | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  |
| Investment income      | 1298    | N/A      | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  |

Source: Social Security, Statistics Portugal

Table 4.4-Market income in EUROMOD -Annual amounts (in mil.)

|                        | EUROMOD  |          |          |          | External |      |      |      | Ratio |      |      |      |
|------------------------|----------|----------|----------|----------|----------|------|------|------|-------|------|------|------|
|                        | 2016     | 2017     | 2018     | 2019     | 2016     | 2017 | 2018 | 2019 | 2016  | 2017 | 2018 | 2019 |
| Employment income      | 59918.29 | 61040.37 | 62790.45 | 64596.44 | 54444.19 | N/A  | N/A  | N/A  | 1.10  | N/A  | N/A  | N/A  |
| Self-employment income | 6902.61  | 7051.06  | 7272.31  | 7500.96  | 4392.84  | N/A  | N/A  | N/A  | 1.57  | N/A  | N/A  | N/A  |
| Private pensions       | 181.24   | 183.71   | 185.52   | 187.02   | N/A      | N/A  | N/A  | N/A  | N/A   | N/A  | N/A  | N/A  |
| Rent income            | 1714.84  | 1738.34  | 1755.52  | 1769.69  | N/A      | N/A  | N/A  | N/A  | N/A   | N/A  | N/A  | N/A  |
| Investment income      | 1187.66  | 1239.27  | 1283.84  | 1315.92  | N/A      | N/A  | N/A  | N/A  | N/A   | N/A  | N/A  | N/A  |

Source: Social Security, Statistics Portugal

Table 4.5-Tax benefit instruments included but not simulated in EUROMOD -  
Number of recipients/ payers (in thousands)

|   | EUROMOD | External | Ratio |      |      |      |      |      |      |
|---|---------|----------|-------|------|------|------|------|------|------|
|   | 2016    | 2016     | 2017  | 2018 | 2019 | 2016 | 2017 | 2018 | 2019 |
| <b>Benefits</b>                                 |         |          |       |      |      |      |      |      |      |
| Disability pensions                             | 229     | 238      | 229   | 175  | N/A  | 0.96 | 1.00 | 1.31 | N/A  |
| Survivor pensions                               | 557     | 880      | 882   | 712  | N/A  | 0.63 | 0.63 | 0.78 | N/A  |
| Sickness benefit                                | 171     | 577      | 629   | 686  | N/A  | 0.30 | 0.27 | 0.25 | N/A  |
| Family benefits (other than child benefits)     | 84      | 171      | 168   | 173  | N/A  | 0.49 | 0.50 | 0.48 | N/A  |
| Education benefits                              | 119     | N/A      | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  |
| Housing benefit                                 | 473     | N/A      | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  |
| Social assistance - other                       | 43      | N/A      | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  |
| <b>Taxes and Social Insurance contributions</b> |         |          |       |      |      |      |      |      |      |
| Property tax                                    | 2442    | N/A      | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  |

Source: Social Security, Statistics Portugal

Table 4.6-Tax benefit instruments included but not simulated in EUROMOD - Annual amounts (in mil.)

|   | EUROMOD |         |         |         | External |         |      |      | Ratio |      |      |      |
|---|---------|---------|---------|---------|----------|---------|------|------|-------|------|------|------|
|   | 2016    | 2017    | 2018    | 2019    | 2016     | 2017    | 2018 | 2019 | 2016  | 2017 | 2018 | 2019 |
| <b>Benefits</b>                                 |         |         |         |         |          |         |      |      |       |      |      |      |
| Disability pensions                             | 1327.85 | 1332.27 | 1353.77 | 1372.62 | 1283.22  | N/A     | N/A  | N/A  | 1.03  | N/A  | N/A  | N/A  |
| Survivor pensions                               | 2283.04 | 2291.61 | 2329.94 | 2363.89 | 2223.31  | N/A     | N/A  | N/A  | 1.03  | N/A  | N/A  | N/A  |
| Sickness benefit                                | 360.38  | 367.89  | 379.18  | 390.85  | 470.04   | N/A     | N/A  | N/A  | 0.77  | N/A  | N/A  | N/A  |
| Family benefits (other than child benefits)     | 190.04  | 193.72  | 199.40  | 205.26  | 476.11   | N/A     | N/A  | N/A  | 0.40  | N/A  | N/A  | N/A  |
| Education benefits                              | 196.73  | 197.72  | 201.28  | 204.50  | N/A      | N/A     | N/A  | N/A  | N/A   | N/A  | N/A  | N/A  |
| Housing benefit                                 | 26.60   | 26.73   | 27.21   | 27.65   | N/A      | N/A     | N/A  | N/A  | N/A   | N/A  | N/A  | N/A  |
| Social assistance - other                       | 59.40   | 59.70   | 60.77   | 61.74   | N/A      | N/A     | N/A  | N/A  | N/A   | N/A  | N/A  | N/A  |
| <b>Taxes and Social Insurance contributions</b> |         |         |         |         |          |         |      |      |       |      |      |      |
| Property tax                                    | 927.11  | 939.81  | 949.10  | 956.77  | 1478.60  | 1477.06 | N/A  | N/A  | 0.63  | 0.64 | N/A  | N/A  |

Source: Social Security, Statistics Portugal

Table 4.7-Tax benefit instruments simulated in EUROMOD -Number of recipients/ payers (in thousands)

|   | EUROMOD |      |      |      | SILC | Ratio | External |      |      |      | Ratio |      |      |      |
|---|---------|------|------|------|------|-------|----------|------|------|------|-------|------|------|------|
|   | 2016    | 2017 | 2018 | 2019 | 2016 | 2016  | 2016     | 2017 | 2018 | 2019 | 2016  | 2017 | 2018 | 2019 |
| <b>Benefits</b>                                 |         |      |      |      |      |       |          |      |      |      |       |      |      |      |
| Old Age Pension (non contributive)              | 33      | 33   | 33   | 33   | 23   | 1.43  | 44       | N/A  | N/A  | N/A  | 0.74  | N/A  | N/A  | N/A  |
| Unemployment benefit - regular                  | 239     | 239  | 239  | 239  | 256  | 0.93  | 384      | 338  | 313  | N/A  | 0.62  | 0.71 | 0.77 | N/A  |
| Unemployment benefit - social                   | 55      | 55   | 55   | 55   | 55   | 1.00  | 118      | 98   | 81   | N/A  | 0.47  | 0.57 | 0.68 | N/A  |
| Child benefit                                   | 780     | 824  | 814  | 882  | 598  | 1.30  | 805      | 829  | 816  | N/A  | 1.02  | 0.98 | 1.08 | N/A  |
| Social Insertion Income                         | 190     | 187  | 184  | 182  | 58   | 3.25  | 133      | 135  | 134  | N/A  | 1.41  | 1.36 | 1.35 | N/A  |
| Solidarity Supplement for the Elderly           | 177     | 177  | 177  | 176  | 43   | 4.09  | 173      | 175  | 177  | N/A  | 1.02  | 1.01 | 0.99 | N/A  |
| <b>Taxes and Social Insurance contributions</b> |         |      |      |      |      |       |          |      |      |      |       |      |      |      |
| Personal Income Tax                             | 2841    | 2900 | 2870 | 2910 | 0    | N/A   | 2631     | N/A  | N/A  | N/A  | 1.10  | N/A  | N/A  | N/A  |
| Tax base  | 4504    | 4521 | 4532 | 4552 | 0    | N/A   | 4653     | N/A  | N/A  | N/A  | 0.97  | N/A  | N/A  | N/A  |
| Tax credits                                     | 4487    | 4504 | 4515 | 4535 | 0    | N/A   | 4655     | N/A  | N/A  | N/A  | 0.97  | N/A  | N/A  | N/A  |
| Child tax credit                                | 1215    | 1216 | 1219 | 1222 | 0    | N/A   | 1220     | N/A  | N/A  | N/A  | 1.00  | N/A  | N/A  | N/A  |
| Employer social contributions                   | 4088    | 4088 | 4088 | 4088 | 4088 | 1.00  | N/A      | N/A  | N/A  | N/A  | N/A   | N/A  | N/A  | N/A  |
| Employee social contributions                   | 4088    | 4088 | 4088 | 4088 | 4088 | 1.00  | N/A      | N/A  | N/A  | N/A  | N/A   | N/A  | N/A  | N/A  |
| Self-employed social contributions              | 210     | 210  | 219  | 370  | 320  | 0.66  | N/A      | N/A  | N/A  | N/A  | N/A   | N/A  | N/A  | N/A  |

Notes: Child benefit recipient data in terms of households

Sources: Social Security, Statistics Portugal, Ministry of Finance



Table 4.8-Tax benefit instruments simulated in EUROMOD -Annual amounts (Mil.)

|   | EUROMOD |         |         |         | SILC    |         |         |         | Ratio |      |      |      | External |         |      |      | Ratio |      |      |      |
|---|---------|---------|---------|---------|---------|---------|---------|---------|-------|------|------|------|----------|---------|------|------|-------|------|------|------|
|   | 2016    | 2017    | 2018    | 2019    | 2016    | 2017    | 2018    | 2019    | 2016  | 2017 | 2018 | 2019 | 2016     | 2017    | 2018 | 2019 | 2016  | 2017 | 2018 | 2019 |
| <b>Benefits</b>                                 |         |         |         |         |         |         |         |         |       |      |      |      |          |         |      |      |       |      |      |      |
| Old Age Pension (non contributive)              | 106.3   | 106.8   | 108.7   | 110.4   | 70.4    | 70.7    | 72.0    | 73.1    | 1.51  | 1.51 | 1.51 | 1.51 | 285.9    | N/A     | N/A  | N/A  | 0.37  | N/A  | N/A  | N/A  |
| Unemployment benefit - regular                  | 848.7   | 876.5   | 894.2   | 917.1   | 1282.6  | 1305.0  | 1333.1  | 1375.0  | 0.66  | 0.67 | 0.67 | 0.67 | 1126.5   | N/A     | N/A  | N/A  | 0.75  | N/A  | N/A  | N/A  |
| Unemployment benefit - social                   | 178.4   | 180.0   | 183.5   | 186.8   | 150.0   | 152.6   | 155.9   | 160.8   | 1.19  | 1.18 | 1.18 | 1.16 | 232.4    | N/A     | N/A  | N/A  | 0.77  | N/A  | N/A  | N/A  |
| Child benefit                                   | 675.5   | 702.4   | 746.5   | 859.5   | 471.7   | 474.1   | 482.6   | 490.4   | 1.43  | 1.48 | 1.55 | 1.75 | 644.6    | N/A     | N/A  | N/A  | 1.05  | N/A  | N/A  | N/A  |
| Social Insertion Income                         | 420.1   | 425.2   | 426.0   | 427.5   | 172.0   | 174.7   | 177.4   | 180.3   | 2.44  | 2.43 | 2.40 | 2.37 | 305.4    | N/A     | N/A  | N/A  | 1.38  | N/A  | N/A  | N/A  |
| Solidarity Supplement for the Elderly           | 162.0   | 162.2   | 164.9   | 167.3   | 70.3    | 70.6    | 71.9    | 73.0    | 2.31  | 2.30 | 2.29 | 2.29 | 201.0    | N/A     | N/A  | N/A  | 0.81  | N/A  | N/A  | N/A  |
| <b>Taxes and Social Insurance contributions</b> |         |         |         |         |         |         |         |         |       |      |      |      |          |         |      |      |       |      |      |      |
| Personal Income Tax                             | 13024.6 | 13112.0 | 13036.2 | 13621.6 | 0.0     | 0.0     | 0.0     | 0.0     | N/A   | N/A  | N/A  | N/A  | 10751.1  | N/A     | N/A  | N/A  | 1.21  | N/A  | N/A  | N/A  |
| Tax base  | 66448.7 | 67741.6 | 69961.7 | 72183.7 | 0.0     | 0.0     | 0.0     | 0.0     | N/A   | N/A  | N/A  | N/A  | 60422.7  | N/A     | N/A  | N/A  | 1.10  | N/A  | N/A  | N/A  |
| Tax credits                                     | 2885.8  | 2908.8  | 2943.6  | 2979.5  | 0.0     | 0.0     | 0.0     | 0.0     | N/A   | N/A  | N/A  | N/A  | N/A      | N/A     | N/A  | N/A  | N/A   | N/A  | N/A  | N/A  |
| Child tax credit                                | 1188.2  | 1189.1  | 1190.7  | 1192.9  | 0.0     | 0.0     | 0.0     | 0.0     | N/A   | N/A  | N/A  | N/A  | 940.6    | N/A     | N/A  | N/A  | 1.26  | N/A  | N/A  | N/A  |
| Employer social contributions                   | 14230.6 | 14497.1 | 14912.7 | 15341.6 | 14230.6 | 14536.6 | 14992.8 | 15464.1 | 1.00  | 1.00 | 0.99 | 0.99 | 14375.6  | 15086.9 | N/A  | N/A  | 0.99  | 0.96 | N/A  | N/A  |
| Employee social contributions                   | 6591.0  | 6714.4  | 6907.0  | 7105.6  | 6591.0  | 6732.8  | 6944.0  | 7162.4  | 1.00  | 1.00 | 0.99 | 0.99 | 7233.0   | 7617.4  | N/A  | N/A  | 0.91  | 0.88 | N/A  | N/A  |
| Self-employed social contributions              | 744.3   | 749.1   | 789.0   | 778.0   | 833.1   | 851.0   | 877.7   | 905.3   | 0.89  | 0.88 | 0.90 | 0.86 | N/A      | N/A     | N/A  | N/A  | N/A   | N/A  | N/A  | N/A  |

Sources: Social Security, Statistics Portugal, Ministry of Finance

## Table 4.9-Distribution of equivalised disposable income

|         | EUROMOD  |          |          |          | External |          |      |      | Ratio |      |      |      |
|---------|----------|----------|----------|----------|----------|----------|------|------|-------|------|------|------|
|         | 2016     | 2017     | 2018     | 2019     | 2016     | 2017     | 2018 | 2019 | 2016  | 2017 | 2018 | 2019 |
| D1      | 3.08     | 3.07     | 3.07     | 3.05     | 2.60     | 2.90     | 0.00 | 0.00 | 1.19  | 1.06 | N/A  | N/A  |
| D2      | 4.64     | 4.66     | 4.59     | 4.62     | 4.50     | 4.80     | 0.00 | 0.00 | 1.03  | 0.97 | N/A  | N/A  |
| D3      | 5.79     | 5.76     | 5.77     | 5.77     | 5.80     | 5.90     | 0.00 | 0.00 | 1.00  | 0.98 | N/A  | N/A  |
| D4      | 6.87     | 6.87     | 6.84     | 6.86     | 6.90     | 6.90     | 0.00 | 0.00 | 1.00  | 0.99 | N/A  | N/A  |
| D5      | 7.86     | 7.83     | 7.80     | 7.82     | 7.90     | 8.00     | 0.00 | 0.00 | 0.99  | 0.98 | N/A  | N/A  |
| D6      | 8.89     | 8.89     | 8.89     | 8.88     | 8.90     | 9.00     | 0.00 | 0.00 | 1.00  | 0.99 | N/A  | N/A  |
| D7      | 10.27    | 10.22    | 10.21    | 10.26    | 10.20    | 10.30    | 0.00 | 0.00 | 1.01  | 0.99 | N/A  | N/A  |
| D8      | 12.04    | 12.02    | 12.02    | 12.02    | 12.00    | 12.10    | 0.00 | 0.00 | 1.00  | 0.99 | N/A  | N/A  |
| D9      | 15.09    | 15.04    | 15.10    | 15.05    | 15.00    | 14.90    | 0.00 | 0.00 | 1.01  | 1.01 | N/A  | N/A  |
| D10     | 25.47    | 25.63    | 25.71    | 25.67    | 26.10    | 25.20    | 0.00 | 0.00 | 0.98  | 1.02 | N/A  | N/A  |
| Median  | 9358.80  | 9508.56  | 9765.68  | 9994.80  | 9071.00  | 9346.00  | 0.00 | 0.00 | 1.03  | 1.02 | N/A  | N/A  |
| Mean    | 11201.53 | 11390.02 | 11733.44 | 12002.27 | 10863.00 | 11063.00 | 0.00 | 0.00 | 1.03  | 1.03 | N/A  | N/A  |
| Gini    | 32.43    | 32.55    | 32.73    | 32.64    | 33.50    | 32.10    | 0.00 | 0.00 | 0.97  | 1.01 | N/A  | N/A  |
| S80/S20 | 5.25     | 5.26     | 5.33     | 5.31     | 5.70     | 5.22     | 0.00 | 0.00 | 0.92  | 1.01 | N/A  | N/A  |

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.

Source for External Data: Eurostat, statistics Portugal, online database.

Table 4.10-Poverty rates by gender and age

|                       | EUROMOD |       |       |       | External |       |      |      | Ratio |      |      |      |
|-----------------------|---------|-------|-------|-------|----------|-------|------|------|-------|------|------|------|
|                       | 2016    | 2017  | 2018  | 2019  | 2016     | 2017  | 2018 | 2019 | 2016  | 2017 | 2018 | 2019 |
| <b>40% median HDI</b> |         |       |       |       |          |       |      |      |       |      |      |      |
| Total                 | 6.27    | 6.34  | 6.38  | 6.26  | 7.50     | 6.00  | 0.00 | 0.00 | 0.84  | 1.06 | N/A  | N/A  |
| Males                 | 6.26    | 6.33  | 6.38  | 6.39  | 7.50     | 6.00  | 0.00 | 0.00 | 0.83  | 1.05 | N/A  | N/A  |
| Females               | 6.27    | 6.35  | 6.38  | 6.14  | 7.50     | 6.00  | 0.00 | 0.00 | 0.84  | 1.06 | N/A  | N/A  |
| <b>50% median HDI</b> |         |       |       |       |          |       |      |      |       |      |      |      |
| Total                 | 11.48   | 11.48 | 11.45 | 11.48 | 12.30    | 10.80 | 0.00 | 0.00 | 0.93  | 1.06 | N/A  | N/A  |
| Males                 | 11.41   | 11.37 | 11.33 | 11.33 | 12.20    | 10.60 | 0.00 | 0.00 | 0.93  | 1.07 | N/A  | N/A  |
| Females               | 11.54   | 11.59 | 11.55 | 11.61 | 12.50    | 11.00 | 0.00 | 0.00 | 0.92  | 1.05 | N/A  | N/A  |
| <b>60% median HDI</b> |         |       |       |       |          |       |      |      |       |      |      |      |
| Total                 | 17.65   | 17.78 | 17.94 | 18.09 | 18.30    | 17.30 | 0.00 | 0.00 | 0.96  | 1.03 | N/A  | N/A  |
| Males                 | 16.97   | 17.11 | 17.21 | 17.34 | 17.80    | 16.60 | 0.00 | 0.00 | 0.95  | 1.03 | N/A  | N/A  |
| Females               | 18.26   | 18.38 | 18.60 | 18.76 | 18.70    | 17.90 | 0.00 | 0.00 | 0.98  | 1.03 | N/A  | N/A  |
| <b>70% median HDI</b> |         |       |       |       |          |       |      |      |       |      |      |      |
| Total                 | 25.39   | 25.59 | 25.64 | 25.49 | 25.40    | 25.30 | 0.00 | 0.00 | 1.00  | 1.01 | N/A  | N/A  |
| Males                 | 24.55   | 24.81 | 24.81 | 24.61 | 24.60    | 24.30 | 0.00 | 0.00 | 1.00  | 1.02 | N/A  | N/A  |
| Females               | 26.14   | 26.29 | 26.40 | 26.27 | 26.10    | 26.30 | 0.00 | 0.00 | 1.00  | 1.00 | N/A  | N/A  |
| <b>60% median HDI</b> |         |       |       |       |          |       |      |      |       |      |      |      |
| 0-15 years            | 17.68   | 17.61 | 17.54 | 17.20 | 19.10    | 18.50 | 0.00 | 0.00 | 0.93  | 0.95 | N/A  | N/A  |
| 16-24 years           | 24.70   | 24.74 | 24.73 | 24.95 | 25.80    | 21.50 | 0.00 | 0.00 | 0.96  | 1.15 | N/A  | N/A  |
| 25-49 years           | 14.74   | 14.77 | 14.84 | 14.72 | 15.50    | 14.80 | 0.00 | 0.00 | 0.95  | 1.00 | N/A  | N/A  |
| 50-64 years           | 20.27   | 20.35 | 20.42 | 20.65 | 20.20    | 18.00 | 0.00 | 0.00 | 1.00  | 1.13 | N/A  | N/A  |
| 65+ years             | 16.48   | 17.00 | 17.64 | 18.47 | 17.00    | 17.70 | 0.00 | 0.00 | 0.97  | 0.96 | N/A  | N/A  |

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.

Source for External Data: Eurostat, statistics Portugal, online database.

## Table 4.11-Minimum wage validation

|                               | Baseline |       |       |       | Min Wage Incl. |       |       |       | Ratio |      |      |      |
|-------------------------------|----------|-------|-------|-------|----------------|-------|-------|-------|-------|------|------|------|
|                               | 2016     | 2017  | 2018  | 2019  | 2016           | 2017  | 2018  | 2019  | 2016  | 2017 | 2018 | 2019 |
| Equivalised disposable income | 77925    | 79197 | 81549 | 83354 | 78464          | 79811 | 82211 | 84049 | 0.99  | 0.99 | 0.99 | 0.99 |
| Employment income             | 59918    | 61040 | 62790 | 64596 | 60419          | 61637 | 63441 | 65280 | 0.99  | 0.99 | 0.99 | 0.99 |
| Gini coefficient              | 32.43    | 32.55 | 32.73 | 32.64 | 32.24          | 32.32 | 32.49 | 32.40 | 1.01  | 1.01 | 1.01 | 1.01 |
| Poverty rate (60%)            | 17.65    | 17.78 | 17.94 | 18.09 | 17.76          | 17.88 | 18.01 | 18.28 | 0.99  | 0.99 | 1.00 | 0.99 |