

EUROMOD

COUNTRY REPORT



CYPRUS (CY)

2015-2018

Christos Koutsampelas and Alexandros Polycarpou

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

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

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

EUROMOD director: Matteo Richiardi

EUROMOD executive director: Jack Kneeshaw

EUROMOD coordination assistant: Cara McGenn

EUROMOD developer responsible for Cyprus: Katrin Gasior

National team for Cyprus: Panayiota Lyssiou, Alexandros Polycarpou and Christos Koutsampelas

The results presented in this report are derived using EUROMOD version I1.0 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 about the tax-benefit system

- The Cypriot tax-benefit system is a unified, national system; policy rules do not vary across regions or municipalities.
- The “tax year” starts on the 1st of January of each year and ends on the 31st of December.
- The statutory retirement age is 65 for both males and females, but retirement at the age of 63 is possible under certain conditions and financial disincentives (actuarial reductions in pensions). However, for certain occupations (i.e. police officers, military officers, miners), the statutory retirement age is lower.
- Definitions of benefit units may differ slightly across policies. The most important definition in terms of social policy is that of dependent children. In most cases children are considered to be dependent if they are under the age of 18 years or aged 18-23 years if in military service or in full-time education. Individuals deprived of their subsistence capabilities are considered dependent regardless of age.
- The income tax is calculated on an individual basis (spouses are assessed independently).
- Taxable income is taxed progressively, while corporate profits, dividends and interests are taxed at a flat rate.
- The levels of benefits, pensions as well as wages in the public sector are periodically revised through statutory indexing regimes that take into account inflation and/or cost of living.
- Income for the purpose of means-testing is assessed in annual or monthly basis depending on the context of each policy. Means-testing is based on past income. The definition of income is not uniform, i.e. it varies according to the context of each policy.

1.2 Minimum Wage

Cyprus lacks a national minimum wage as the relevant legislation covers only specific occupations. Specifically, the minimum wage legislation applies only to shop assistants, clerks, child-care workers (assistant baby and child minders), personal care workers (nursing assistants), security guards and cleaners.

The minimum monthly wage upon recruitment is €70, and after the completion of six months of employment in the same employer it increases to €24. The minimum wage for security guards is set at an hourly rate of €4.90 and is increased to €5.20 upon the completion of a six month period of employment. The corresponding hourly rates for cleaners are €4.55 and €4.84.

1.3 Social Benefits

The section briefly describes a number of basic (simulated and non-simulated) social benefits, excluding minor benefits which affect small population groups and whose relevance is limited. Specific parametric information (e.g. benefit rates) can be found in section 2.

1.3.1 Contributory insurance-based benefits

Short-term benefits

Unemployment benefit (*ανεργιακό επίδομα*): Unemployment benefit is payable to persons between the ages of 16 and 63 for involuntary unemployment. Period of payment extends to 156 days for each spell of unemployment. The benefit rate is calculated as a proportion of insurable earnings and it is increased for dependent spouses and children. Eligibility is defined on certain contribution conditions, namely the person should (i) have been insured for at least 26 weeks and has paid up to the date of unemployment contributions not lower than 26 times the weekly amount of the basic insurable earnings; and (ii) has paid contributions in the previous contribution year on insurable earnings no less than 20 times the weekly amount of basic insurable earnings. These contribution conditions apply to other insurance-based benefits, too.

Maternity benefit (*επίδομα μητρότητας*). The maternity benefit is a contributory benefit payable to employed and self-employed mothers of newborns during the maternity leave period. The duration of the benefit is 18 weeks. Adoptive mothers are also covered by the scheme. The eligibility criteria require that the recipient should be on maternity leave and not receiving a full salary from her employer. Furthermore, certain contribution-related conditions should be satisfied. The amount of the benefit is calculated on the basis of the insurable earnings of the recipient. However, the sum of the reduced wage (if any) and the benefit cannot exceed the full wage.

Paternity benefit (*επίδομα πατρότητας*). The paternity benefit is a contributory benefit payable to employed and self-employed married fathers of newborns during the parental leave period. The duration of the benefit is 2 weeks. The same qualifying conditions apply as for the maternity benefit. The scheme was introduced in August 2017.

Birth grant (*βοήθημα τοκετού*). The birth grant is a lump-sum flat-rate contributory benefit payable to mothers of newborns. Eligibility is based on mother's or fathers' insurance record.

Special birth grant to unmarried mothers (*ειδικό βοήθημα τοκετού σε άγαμες μητέρες*). The special birth grant is payable to unmarried mothers who are not eligible for the birth grant. The level of the special birth grant is the same as the birth grant.

Parental leave (*γονική άδεια*): The scheme provides to each parent an unpaid leave up to 18 weeks (which can be extended in certain occasions). The leave can be claimed until the child turns the age of 8 (different claiming periods apply for adoptive parents or parents with children with disabilities). During the period of a parental leave, assimilated insurance is credited to the beneficiary.

Other benefits to parents include: the honorary allowance to mothers, allowance to care for disabled children or older relatives and grants for the care of children placed with foster families. There is also a funeral grant.

Sickness Benefit (*επίδομα ασθενείας*): The sickness benefit is payable to persons not capable for work. The payment period cannot exceed 156 days. Eligibility is defined on the basis of the standard contribution conditions (see above). The rate of the benefit is calculated as a proportion of insurable earnings, increased in the presence of dependents.

Orphan Benefit (*επίδομα ορφάνιας*): Orphan benefit is payable to underage¹ children whose parents died or one parent deceased due to employment accident and the other parent is not entitled to widow pension. Eligibility requires that at least one of the parents is insured. The rate

¹ Underage child is a child under 15 years old; unmarried son age between 15 and 25 who is under full time education or on military service; unmarried daughter age 15 to 23 who is under full time education and unmarried person independently of age who is permanently incapable for self-supporting.

of the benefit is calculated as a proportion of insurable earning but certain ceilings exist. The benefit is paid until the child satisfies age requirements unless the beneficiary is permanently incapable of working.

Employment injury benefit (επίδομα σωματικής βλάβης): This benefit is payable to any employed person who is incapable of work as a result of an employment accident or occupational-related disease. The benefit is payable for up to 12 months from the date of accident/disease. The recipient should be employed on the day he/she had the accident/disease; and, as a result of the injury cannot work and does not receive a full wage for this period. The rate of injury benefit is the same as for the sickness benefit.

Disability benefit (βοήθημα αναπηρίας): The disability benefit is payable to employed persons who, as a result of an employment injury, suffered a loss of physical or mental capacity which results to a degree of disability between 10% and 19%. The benefit takes the form of a lump sum transfer.

Pensions

Old age pension (σύνταξη γήρατος): Old age pension is payable to insured persons having completed the pensionable age (65 year of age for employees of the private sector and satisfying all the required contribution conditions. The contribution conditions are complex and have been subject to several law amendments during the last decade). Old age pension has two components: the basic and the supplementary. The basic is calculated as 60% of the average of insurable earnings in the lower band earning increased by 1/3, 1/2 and 2/3 for one, two or three dependants respectively. The supplementary is 1/52 of 1.5% of the total insurable earnings (of the beneficiary in the upper band).

Incapacity pension (σύνταξη ανικανότητας): Invalidity pension is payable to persons who have been incapable for work for at least 156 days and are expected to remain permanently incapable for work. Besides the typical contribution conditions (see other benefits) the claimant should have been insured for at least 156 weeks up to the date of invalidity and the number of insurance points collected the period between 5 October 1964 (or, if he/she reached the age of 16 after 5 October 1964, on the first day of the year in which he/she reached that age) and the week before he/she becomes incapable, is equal to at least 25% of the years included in that period. The level of invalidity pension is calculated similar to old age pension.

Widow/widower pension (σύνταξη χηρείας): Widows' pension is payable to the widow, and under certain conditions to the widower, of a person who until the date of his/her death satisfied the relevant contribution conditions. Widows' pension comprises of a basic and supplementary part. The basic is calculated as a proportion of insurable earnings increased by one third, one half and two thirds for one, two or three dependants respectively.

Disability pension (σύνταξη αναπηρίας): Entitled to disability pension are all employed persons who as a result of a work-related injury suffered a loss of physical or mental capacity resulting to a degree of disability of 20% or more. There are not any insurance conditions that need to be satisfied for granting eligibility. The recipients of the disability pension can receive the disability pension even if they keep working.

1.3.2 Non-contributory social benefits:

GMI (ελάχιστο εγγυημένο εισόδημα): The GMI scheme is a means-tested benefit targeting families with income not enough to cover their basic needs. The benefit is defined as the difference between the basic income and the (actual) family income. The derived amount is supplemented with a housing allowance. The recipient unit is the family, which is defined as

couples (or single persons) living with unmarried children up to the age of 28 or children in full time education or in military service. In defining eligibility criteria, movable and immovable property is taken into account.

Child Benefit (επίδομα τέκνου): Child benefit is a non-contributory means-tested benefit paid to all families with children that reside permanently in Cyprus. It consists of a basic part and a supplementary part. The basic part is paid for each child that lives under the same household, while the supplementary part is payable only to families with annual gross income below a certain threshold which is set by the Law.

Students Grant (φοιτητική χορηγία): Student grant is a non-contributory means-tested benefit payable to families with students, irrespectively if the latter study in private or public tertiary institutions. It consists of a basic and a supplementary part. The basic part is a flat amount and the supplementary part depends on income and other criteria.

Social pension (κοινωνική σύνταξη): Social pension provides a minimum pension to elderly persons residing in Cyprus who are not entitled to a contributory pension or other retirement income. Beneficiaries should satisfy the following residence conditions; have resided legally in Cyprus for at least 20 years from the date on which the applicant reached the age of 40; or have resided legally in Cyprus for at least 35 years from the date the applicant reached the age of 18. Social pension is paid at a flat rate to all beneficiaries.

Single parent benefit (επίδομα μονογονιού): Single parent benefit is a non-contributory means-tested benefit that provides income support to single parents provided that are Cypriots, EU citizens or have been residing in Cyprus the last three years. Single parents might unmarried, divorced or widowed and reside with her/his dependent children without a spouse or partner.

1.4 Social contributions

Employee social contributions (ασφαλιστικές εισφορές εργαζομένων): The compulsory contribution rate for employees amounts to 20.2%, of which 7.8% is paid by the employee, 7.8% by the employer and 4.6% from the Consolidated Fund of the Republic (*Πάγιο Ταμείο της Δημοκρατίας*). In cases of trainees, the employer has to additionally pay employee's contribution, that is, a total of 12.6%.

Self-employed social contributions (ασφαλιστικές εισφορές αυτοεργοδοτούμενων): Contribution rate for self-employed amounts to 19.2%, of which 14.6% is paid by the self-employed and 4.6% from the state. The insured earnings of self-employed, that is, the earnings for which their contributions are calculated, are based on their profession. For every professional category there is an obligatory minimum amount of insured earnings. The self-employed is allowed to pay contributions on a higher amount of insured earnings up to the maximum limit of social earnings. If the real income of a self-employed person is lower than the minimum amount of the corresponding professional category y then he/she can ask to pay contributions based on his/her real income.

Optionally insured person social contributions (προαιρετικές ασφαλιστικές εισφορές): The contribution rate of optionally insured persons is 19.2% from which 14.6 p.p. are paid by the optionally insured person and 4.6 p.p. by the state. The amount of insured earnings for which the optionally insured person is paying social contributions is chosen by her, but it cannot be higher than the weekly amount of her past insured earnings.

Employer social contributions (ασφαλιστικές εισφορές εργοδοτών): Employers are obliged to contribute to the following Funds (Social Insurance Fund, Annual Holidays Fund, Redundancy

Fund, Human Resource Development and Social Cohesion Fund) for all employees whose earnings exceed €1.71 per week or €6.83 per month. For trainees/apprentices the employer has to pay contributions to the Social Insurance Fund even if the employee has no earnings. The liability of the employer for paying contributions to the Social Insurance Fund ceases on the day the employee reaches the pensionable age.

Credited social contributions (*πιστωμένες ασφαλιστικές εισφορές*): Contributions can be credited to insured persons in the following cases: 1) for any period after the age of 16 for which he/she studies full time or attends training courses; 2) for any period he/she receives sickness benefit, unemployment benefit, maternity benefit, physical injury benefit or incapacity pension from the Social Insurance Fund; 3) for any period of declared unemployment or sickness for which the person is not allowed to receive a benefit. In such case the credit period cannot exceed six months.

Provident fund contributions (*ασφαλιστικές εισφορές ταμείων πρόνοιας*): Provident funds provide cash benefits to employed persons in case of termination of employment, permanent incapacity for work, retirement or death and are financed by periodical contributions paid by the employer and the employed persons. The Provident Fund Law sets the general legislative framework but does not specify the rates of contribution/benefits, which are subject to collective agreements between employees and employers.

1.5 Taxes

Personal Income Tax (*φόρος εισοδήματος*): The personal income tax applies to all Cyprus tax residents for their income accrued or derived from all sources in Cyprus and abroad. Taxable income includes wages and salaries, income from self-employment and business activities, rents and pensions. The social benefits provided in the form of a lump sum or for a short period of time (i.e. sickness benefit) are not included in the tax base.

Special Contributions for defence (*ειδική εισφορά για την άμυνα*): Special contribution for defence is levied on the income from interest, dividends and the rental income of tax residents (individuals and legal entities). Dividends are taxed at 17%, income from interest at a rate of 15%, interest from Cypriot savings certificates and Cypriot development bonds at a rate of 3% and, finally, income from rents at a rate of 3% (but only 75% of the rental income is subject to the contribution).

Real Property Tax (*φόρος ακίνητης περιουσίας*): Property owners, regardless of whether they reside in Cyprus or not, are liable to pay an annual tax based on the total value of all their immovable property. The real property tax was abolished as of 1st of January 2017.

Value Added Tax (*φόρος προστιθέμενης αξίας*): Value added tax is imposed on the provision of goods and services in Cyprus, on the acquisition of goods from the European Union and on the importation of goods into Cyprus. In most cases, the VAT is 19%, but there are also reduced rates of VAT of 5% and 9% for several basic goods.

Capital Gains Tax (*φόρος κεφαλαιακών κερδών*): Capital gains (e.g. from selling immovable property) are taxed at a rate of 20%. Individuals may claim several deductions.

Special contribution (*Ειδική εισφορά*): The special contribution is part of the fiscal consolidation measures that were undertaken after 2011. It is imposed on the monthly emoluments of the private and public employees, self-employed and pensioners. The contribution rate is zero below a certain threshold and thereafter increases with the level of emoluments. The special contribution was abolished as of 1st January 2017.

2. SIMULATION OF TAXES AND BENEFITS IN EUROMOD

2.1 Scope of simulation

EUROMOD model simulates a collection of policy instruments (taxes, social benefits and social insurance contributions). The choice between simulating or not an instrument depends on the available information in the dataset. Eligibility rules are not always possible to simulate given the enormous demand of informational input some policies require. Characteristic example are pensions whose meaningful simulation would require knowing the contribution record of each individual until the pensionable age. Other benefits are built upon complex rules which are only partially simulated by the model. A characteristic example is the GMI benefit, which alongside a basic monetary benefit and a housing allowance provides to recipients to a whole range of other minor in-cash and non-cash benefits, corresponding to recipients' individualised needs (long-term care cash benefits to recipient units with dependent elderly persons, child care benefits and other), which cannot be simulated by the model. In such cases, the simulation of the instrument is partial and should be interpreted as such.

2.1.1 Part simulated tax-benefit components

Some benefits use eligibility information from the data due to lack of information in the data to simulate all eligibility rules. This is the case for the unemployment benefit in Cyprus. Unemployment benefit is only simulated for those with receipt of the benefit in the data and based on their imputed previous earnings.

Table 1: Simulation of benefits in EUROMOD

		2015	2016	2017	2018	Why not fully simulated?
GMI	bsamm_s	S	S	S	S	Lack of information on the particular needs of the recipient.
Unemployment benefit: From SIF	bunct_s	PS	PS	PS	PS	Not possible to define contribution record and past earnings.
Unemployment: other	bunot	I	I	I	I	No information to define eligibility
Maternity benefit	bma	I	I	I	I	Paid SICs cannot be defined perfectly, no available information
Paternity benefit	-	-	-	-	-	Introduced in 2017, not part of input data.
Child benefit	bch_s	S	S	S	S	Relevant income may not be defined exactly
Military service grant	bml	I	I	I	I	Not enough information to define the exact amount of the grant.
Students grant	bedet_s	S	S	S	S	-
Special grant to blind persons	pdi	I	I	I	I	Eligibility cannot be defined.
Sickness benefit	bhl	I	I	I	I	Eligibility cannot be defined.
Physical injury benefit	bhl	I	I	I	I	Eligibility cannot be defined.
Disability pension	pdi	I	I	I	I	Eligibility cannot be defined.
Disability benefit	pdi	I	I	I	I	Eligibility cannot be defined.
Widow/widower pension	psuwd	I	I	I	I	Depends on the SICs of the deceased.
Orphan benefit	psuor	I	I	I	I	Eligibility cannot be defined.
Parent pension	psuot	I	I	I	I	Eligibility cannot be defined.
Birth grant	bchba_s	S	S	S	S	-
Other benefits for parents	bfamh	I	I	I	I	Eligibility cannot be defined.
Widow pension for public empl.	psuwd	I	I	I	I	Eligibility cannot be defined.
Orphan pension for public employees	psuor	I	I	I	I	Eligibility cannot be defined.
Old age pension	poa	I	I	I	I	Pension's level depends on the SICs which are not known.
Social pension	poasp	I	I	I	I	Eligibility cannot be simulated
Incapacity pension	pdi	I	I	I	I	Eligibility cannot be defined.
Single parent benefit	bchlp_s	S	S	S	S	-

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

Table 2: Simulation of taxes and social contributions in EUROMOD

Social Insurance Contributions (SICs)		2015	2016	2017	2018	Why not fully simulated?
Employee SICs	tscee_s	S	S	S	S	
Employer SICs	tscer_s	S	S	S	S	
Employer SICs: Annual Holidays Fund	tscer00_s	S	S	S	S	Contributors randomly chosen
Employer SICs: Redundancy Fund	tscer01_s	S	S	S	S	
Employer SICs: Human Resources Fund	tscer02_s	S	S	S	S	
Employer SICs: Social Insurance Fund	tscer03_s	S	S	S	S	
Employer SICs: Social Cohesion	tscer03_s	S	S	S	S	
Self-employed SICs	tscse_s	S	S	S	S	
Optionally insured person SICs	-	E	E	E	E	Non-sufficient information available from data
Credited SICs	-	E	E	E	E	Non-sufficient information available from data
Provident-fund contributions	-	E	E	E	E	Non-sufficient information available from data
Special contr. (public employees)	txcpb_s	S	S	S	-	
Special contr. (priv. employees)	txceeps_s	S	S	S	-	
Special contr. (priv. employers)	txcerps_s	S	S	S	-	
Special contr. (self-employed)	txcseps_s	S	S	S	-	
Contribution for public pensions	tpipb_s	S	S	S	S	
Personal Income Tax	tin_s	S	S	S	S	
Corporate income tax		E	E	E	E	Out of scope of the model
Property tax	-	E	E	E	E	No information about the value of property
Special contribution for defence	txc_s	S	S	S	S	No information on legal entities
Value Added Tax	-	E	E	E	E	Out of scope of the model
Excise duties	-	E	E	E	E	Out of scope of the model
Other indirect taxes	-	E	E	E	E	Out of scope of the model
Indirect taxes	-	E	E	E	E	Out of scope of the model

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

2.2 Order of simulation and interdependencies

The spine structure has remained almost stable between 2015 and 2018, with the only change being the abolition of special contribution to employees, self-employed and pensioners in 2017. The order of simulation is: initially, the model simulates social insurance contributions, (note that cuts in public sector employees’ wages and pensions are simulated before SICs). The special contribution (for years 2015 and 2016) is simulated after SICs. Then, income tax and the special contribution to defence are deducted from income. Thereafter, cash benefits are simulated with the following order: birth grant, child benefit, single parent benefit, student grant and GMI. Finally, we note that the unemployment benefit is switched off (in the baseline scenario) across all years. The following table describes the order in which the main instruments of the Cypriot tax-benefit system are simulated.

Table 3: EUROMOD Spine: order of simulation

Policy	2015	2016	2017	2018	Description of the instrument and main output
<i>paycut_cy</i>	On	On	On	On	Cuts in public wages and pensions of public employees
<i>tscee_cy</i>	On	On	On	On	Employee social insurance contributions
<i>tscer_cy</i>	On	On	On	On	Employer social insurance contributions
<i>tscse_cy</i>	On	On	On	On	Self-employed social insurance contributions
<i>tscgv_cy</i>	On	On	On	On	SICs paid by the government
<i>txcbp_cy</i>	On	On	Na	Na	Special contribution of public employees
<i>txcps_cy</i>	On	On	Na	Na	Special contribution of private sector
<i>txcpe_cy</i>	On	On	Na	Na	Special contribution on pensions
<i>tpipb_cy</i>	On	On	On	On	Contribution to government employees pension plan
<i>tin_cy</i>	On	On	On	On	Income Tax
<i>txc_cy</i>	On	On	On	On	Special contribution for defence
<i>bchba_cy</i>	On	On	On	On	Birth grant
<i>bunct_cy</i>	Off	Off	Off	Off	Unemployment benefit
<i>bch_cy</i>	On	On	On	On	Child benefit
<i>bchlp_cy</i>	On	On	On	On	Single parent benefit
<i>bedet_cy</i>	On	On	On	On	Student grant
<i>bsa_cy</i>	n/a	n/a	n/a	n/a	Social assistance benefit
<i>bsamm_cy</i>	On	On	On	On	Guaranteed Minimum Income

Notes: A number of policies, which are included into the model but not used in the EUROMOD baseline output, are marked as “switched off”.

2.3 Policy switches

A switch is used in the model for choosing between uprating (non-simulated) public pensions (UAA_cy) according to changes in average amounts (switch set to on) or statutory indexation (switch set to off, the default).

2.4 Social benefits

2.4.1 Unemployment benefit (*bunct_s*)

Table 4: Characteristics of the unemployment benefit

	2015	2016	2017	2018
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Eligibility	Contribution period	26 contribution weeks with employment income liable to SIC. 26 times the weekly amount of basic insured earnings (see below).			
	Other conditions	Aged 16-63 (65 if not eligible for old-age pension), not incapable to work, not on leave, no other employment income			
	Eligibility of self-employed	No.			
Payment	Contribution base	Average weekly paid and credited insured earnings (employment income) of the previous contribution year.			
	Basic amount	60% of the contribution base			
	Additional amounts	<u>Supplementary amount</u> in case of: <ul style="list-style-type: none"> • dependent spouse: 20% • dependent child/other dependants up to 2: 10% • 50% of the contribution base that exceeds the basic insured earnings up to the level of the insured earnings. 			
	Floor	No minimum amount.			
	Ceiling of the basic amount	60% of weekly basic insured earnings of:			
		174	174	174	174
Duration	Standard (in months)	156 working days (Sundays are not included, 6 months)			
Subject to	Taxes	No.			
	SIC	No.			

• *Definitions*

The unemployment benefit is payable to insured employees or voluntary contributors that work abroad in the services of a Cypriot employer. Insured persons should be between 16 and 63 years old in order to be eligible for the benefit. Yet, the age limit of 63 can be expanded to 65 years old, in case that the applicant is not eligible for old-age pension. Any insured person may apply for unemployment benefit for the days he/she is unemployed, able to work and willing to accept employment. But he/she is not considered to be unemployed:

- 1) When he/she is incapable for work due to sickness;
- 2) On Sundays;
- 3) When he/she is on leave
- 4) The days during which he/she works in any occupation that he/she practiced in addition to his/her usual work and from which he/she receives salary at least equal to 1/12 of the amount of basic insurable earnings.
- 5) On any day for which the employer pays for employee's contributions.

Dependents of the insured person are considered: the spouse, the children aged below 15, unmarried daughter aged 15-23 if she is student, unmarried son age 15-25 if he is student or soldier, unmarried child if he/she is permanently incapable of self-support independently of his/her age, the disabled spouse if he/she is supported by the spouse, the father/mother of the insured person if he/she is incapable of employment and financially supported by him or her and the underage younger brother or sister if he/she is financially supported by the insured person.

- **Eligibility conditions**

The requirements needed for the payment of unemployment benefit are:

- 1) At least 26 weeks must have passed between the day when the person became insured and the day on which he or she became unemployed. During that period, the total amount of insured earnings has to be at least equal to 26 times the weekly amount of the basic insured earnings.
- 2) The applicant has paid² or been credited³ with contributions in previous contributions year⁴. During this period insured earnings should not be lower than 20 times the weekly amount of basic insurable earnings.

In the requirements mentioned above the contributions of the self-employed are not taken into consideration while the contributions of optionally insured persons are taken into consideration only if they are for work abroad with a Cypriot employer.

Notes on Euromod implementation: The model controls for the first condition using a variable on working history. As far as the second is concerned, it uses the employment income.

The benefit is payable for 156 working days in each period of interruption of employment.

Unemployed person who has exhaust his right to unemployment benefit can be allowed to it again if he/she works and pay contributions on earnings that on their total are not less than 26 times the weekly amount of basic insured earnings and at least 26 weeks have passed since the last day that the person received the benefit.

In the case where the unemployed person is above 60 years old and is not allowed to pension from any professional plan, he/she gains the right to unemployment benefit if he/she worked and has paid contributions on earnings that on their total are not less than 26 times the weekly amount of basic insured earnings and at least 13 weeks have passed since the last day that the person received the unemployment benefit.

Notes on Euromod implementation: The above described rules are not simulated in the model.

The applicant loses entitlement of the unemployment benefit for up to six weeks if he/she:

- 1) loses his/her employment by his/her own blame or abandons it without excuse;
- 2) refuses or omit to submit application for proper employment or to accept proper employment offer to him/her;
- 3) fails or neglects to be employed in a suitable job;
- 4) refuse or omits, without excuse, to attend professional training lessons.

Notes on Euromod implementation: Euromod model does not control for these conditions.

² The paid insured earnings are the earnings for which contributions had been paid.

³ Every insured person is allowed to be credited with insured earnings for every period of full time education after the age of 16, for the period under military service and for the period for which he/she is receiving sickness benefit, unemployment benefit, maternity benefit, physical injury benefit or incapability pension from the Social Insurance Fund and for the period that he/she is absent from his/her employment with parental leave or leave due to force majeure.

⁴ For the first semester of every year, the previous contributions year is the penultimate calendar year and for the second semester is the last calendar year, i.e. for the first semester of 2006 the previous contributions year is 2004 while for the second semester of 2006 is the 2005.

- **Income test**

There is no income test.

- **Benefit amount**

The amount of the unemployment benefit is calculated on the basis of the weekly mean of paid and credited insured earnings of the insured person during the previous contribution year. The unemployment benefit includes a basic and a supplementary amount. The weekly amount of the basic benefit is equal to 60% of the weekly mean of the insurable earnings (up to the basic insurable amount) during the previous contribution year and increases by 20% for the dependent spouse and by 10% for every child or other dependant⁵ (the maximum number of dependent children/other dependants is 2)⁶. In case that both spouses are allowed to receive unemployment benefits, the increase for dependents is paid only to the spouse that is allowed the highest increase. The weekly amount of the supplementary amount is equal to 50% of the weekly mean of insurable earnings of the beneficiary that exceeds the basic insured earnings, but the complementary amount should not be higher than the weekly amount of basic insured earnings.

In case that the insured person is entitled not only to unemployment benefit but also to other provisions of the Social Insurance Fund, then only the benefit with the higher rate is paid. This rule does not hold if the beneficiaries are entitled to unemployment benefit and widow pension or missing person allowance. In that particular case, both provisions are paid to the person.

Note on Euromod implementation: Dependants other from children of spouse and children of the recipient were not taken into account in the implementation. However, these cases are very rare in practice [see, footnote (9)].

2.4.2 Child benefit (*bch_s*)

- **Definitions**

Child benefit is a non-contributory benefit provided to families with dependent children. The benefit is means-tested and is provided to families residing in Cyprus at least for three consecutive years. Starting from 1st January 2018: The residence condition changed from 3 years to 5 years residing in Cyprus. The relevant law defines “dependent children” as the persons aged:

- 1) up to 18 years old,
- 2) up to 19 years old, if they still attend secondary education,
- 3) up to 21 years old, if they are serving in the National Guard.
- 4) regardless of age, if they are permanently deprived of the ability to maintain themselves (e.g. children with disabilities).

The amount of the benefit depends on the number of children and the gross annual family income. It consists of a basic part and a supplementary part. The benefit is paid to the mother or, in absence of the mother, to the father or the person who is in charge of the children in case that both parents are dead. Finally, the child benefit is not taxable.

⁵ Other dependents refer to the cases of a) recipient’s younger brothers, b) recipient’s parent(s) if he/she or they are incapable of work. In both cases a) and b) the dependents should prove that they are financially supported by the recipient.

⁶ The usual definition of dependent child applies.

- **Eligibility conditions**

A family is entitled to the benefit only if their annual family income (before taxes) does not exceed:

- €49,000 for families with only one dependent child,
- €59,000 for families with two, three or four dependent children,
- Starting from 1st January 2018: The threshold increases by €5,000 for each additional child for families with three or more children (e.g. the threshold is €64,000 for a family with 3 dependent children and €69,000 for 4 dependent children).

Additionally, a family is not eligible for the benefit if its total property (real estate property, shares, bonds, securities and deposits) exceeds €1.2 million.

- **Income test**

Family income is defined as the total annual gross income acquired one year before the year of applying for the benefit and includes wages and salaries of all family members, pensions, capital income, rents and social benefits (including GMI). The child benefit is paid annually and it is not taxable.

- **Benefit amount**

The benefit amount depends on the number of dependent children and the family income as shown in the following Table.

Table 5: Benefit levels for 2015-2018 (annual amounts per child in EUR)

	Benefit amounts for families with income:			
	up to €19,500	€19,500.01 - €39,000	€39,000.01 - €49,000	€49,000.01 - €59,000*
Family with 1 child	€75	€25	€80	0
with 2 children	€70	€20	€80	€45
with 3 children	€1,045	€95	€760	€90
with 4+ children	€1,675	€1,525	€1,260	€1,135

Note: * From 2018, this income threshold increases by 5,000 for each additional child for families with three or more children.

Notes on Euromod implementation: The current income is used for the income-test (instead of the previous year income). The benefit is given to the head of the tax unit. Also, the student grant is considered for the means-testing of the benefit, while the opposite is not true. Social assistance is not included in the income list. The period of residency in Cyprus is not taken into account in the model.

2.4.3 Single parent benefit (*bsalp_s*)

- **Definitions**

The single parent benefit is a non-contributory means-tested benefit given to single parents with dependent children. Single parent families consist of one parent who cohabits with at least one dependent child. The single parent may be unmarried, widowed or divorced. Eligible recipients should have already applied for the child benefit (meaning that the same definition of dependent children applies to both benefits). The benefit is not taxable.

- **Eligibility conditions**

The recipients should be eligible for the child benefit. The definition of single parent family is as described above. The recipients can be either Cypriots or EU citizens who reside in Cyprus at least for the last three years. Starting from 1st January 2018, the residence condition changed from 3 to 5 years.

- **Income test**

The benefit is means-tested. The gross family income (acquired one year before the application for the benefit) is used. The definition of family income is the same as for the child benefit. The value of the benefit depends on the value of the gross family income.

- **Benefit amount**

Table 6: Benefit levels for 2015-2018 (monthly amounts in EUR)

Family income	2015-2018
0-39,000	180 per child
39,000-49,000	160 per child

Notes on Euromod implementation: The period of residency in Cyprus is not taken into account in the model.

2.4.4 Student grant (*bedet_s*)

- **Definitions**

Student grant is a means-tested non-contributory benefit aiming at providing income support to families with children in higher education. Responsible for its administration is the Ministry of Education and Culture. The description of the policy rules (2014-2017) is based on the Provision of Student Grant (modifying) Law of 2012⁷ and the State Student Care Law of 2015⁸.

The student grant is given either to student's parents or to any person paying student's expenses. Students should either live in the same household with their parents or, in case that they live separately, they should be financially supported by their parents.

The Law considers the following family units:

- couples with children,
- lone fathers (divorced, widowed or unmarried) and their children,
- lone mothers (divorced, widowed or unmarried) and their children,
- student whose both parents are deceased or missing or he or she (the student) has been abandoned by his/her parents.
- Married student and his/her spouse and his/her child(ren),

The 2015 Law added:

- Divorced, widowed student and his/her child(ren).

Furthermore for the purposes of the Law, children are defined as follows:

⁷ Ο περί Παροχής Φοιτητικής Χορηγίας (Τροποποιητικός) Νόμος του 2012 (Ν. 181(I)/2012)

⁸ Ο περί Κρατικής Φοιτητικής Μέριμνας Νόμος του 2015 (Ν. 203(I)/2015)

- children up to 18 years old,
 - children up to 19 years old, provided that they attend secondary education,
 - children up to 21 years old, provided that they are serving in the National Guard,
 - children irrespectively of age who are considered students eligible for receiving the student grant,
 - children irrespectively of age who are disable or permanently deprived of the ability to maintain themselves.
- ***Eligibility conditions***

Eligible students should be Cypriot citizens or EU citizens who have their permanent residence in Cyprus (permanent residents are considered those persons who had been staying in Cyprus for at least 30 months the past 3 years before the beginning of their studies). In case that the student is a non-EU citizen, then s/he may be eligible for the grant if at least one of his/her parents has Cypriot or EU citizenship. Furthermore, the recipient should have graduated from a secondary school in Cyprus. The student should be enrolled in a recognized higher education institution. The grant is paid only for the normal duration of studies which may vary across faculties, but the period of payment may be extended in special cases (health reasons). Note that the student grant is not paid to students that:

- attend language learning programmes that are prerequisites for entering to a educational institution;
- attend tertiary foundation certificates or similar courses
- attend distance learning courses or open university courses;
- attend courses as external students and not as normal students;
- are enrolled in PhD programs.

Finally the recipients should satisfy certain asset criteria. In particular, the total value of family immovable and movable property should not exceed 1.2 million EUR.

- ***Income test***

The eligibility and level of the student grant is defined on the basis of the total gross family income of the recipient. Total gross family income (acquired in the year before the 1st of January of the relevant academic year) includes the following components: employment income, pensions, rents, income from interest or dividends, alimonies, the GMI benefit, the public assistance, the child benefit⁹, the single parent benefit and other benefits or grants. But it does not include the following: income from the employment of children who are full-time students, scholarships or other student benefits and any disability benefits or grants who are received by any family member. Income thresholds are presented in the following Tables.

- ***Benefit amount***

The student grant consists of a basic and an additional amount. The additional amount is paid to families which either bear the cost of tuition fees or have more than three dependent children (multi-child families). If the student completes her studies during the first semester of the academic year, then the family is allowed to half of the grant. If the case of part-time studies, the grant is paid when the period of studies corresponds to one year of normal studies. The following Tables show the level of the student grant corresponding to each income bracket for the period 2015-2018.

⁹ Note that the child benefit was excluded in the definition of family income according to the 2011 Law. The 2015 Law added the child benefit in the definition of family income.

Table 7: Benefit Rates (2015-2018)

Family income (€)	Annual amount per student	Additional amount for tuition payment or for families with more than 3 dependent children
0 - 39,000	1,710	855
39,000.01-49,000	1,580	790
49,000.01-59,000*	1,450	725

* Since 2015, the maximum income threshold increased by 3,000 EUR for each additional child above the second child. For example, the maximum income threshold for a three-child family becomes 62,000 EUR.

Note on Euromod implementation: The model cannot fully control for the provisions of the Law. According to the implementation, the grant is attributed to families with dependent children that attend an educational programme that corresponds to the ISCED values 5 or 6. Since it is not possible to control for the payment of fees, the only additional amount simulated is the one for multi-child families. Note also that the child benefit and the social assistance are not taken into account in the calculation of family income.

2.4.5 Birth grant (*bchba_cy*)

- *Definitions*
- *Eligibility conditions*

The birth grant is a contributory benefit paid to the mother of a newborn child (if she or her husband is insured), independently of the category of insurance (employee, self-employed, optionally insured).

The requirements for the payment of the birth grant are:

1. The birth of an alive child or a child born dead after at least 28 weeks of pregnancy;
2. The applicant has to be insured for not less than 26 weeks. The total amount of insured earnings has to be at least equal to 26 times the weekly amount of the basic insured earnings.
3. The applicant has paid or been credited with contributions in the previous contribution year. During this period, the insured earnings should not be lower than 20 times the weekly amount of the basic insurable earnings.

- *Income test*

No income test applies.

- *Benefit amount*

The amount of the birth grant (per child in the case of twins) is equal to 544€ for the period 2015-2018.

Notes on Euromod implementation: this benefit is given to all heads of families with children aged 0 where at least one of the parents has working history at least equal to 6.5 months (26 weeks) and annual earnings equal at least to 20 times the weekly amount of basic insured earnings.

2.4.6 Special birth grant for unmarried mothers (*bchba_cy*)

The special birth grant for unmarried mothers is the same as the general birth grant described above with two exceptions:

- Unmarried mothers do not need to satisfy the social insurance condition
- Non-Cypriots must have lived in the country for at least 12 months.

Effectively, it is the same policy as the birth grant (same amounts, etc.) with the exception that unmarried mothers do not have to satisfy social insurance conditions (and in case that they are not Cypriots; they should have resided at least for 12 months in the country).

Notes on Euromod implementation: The period of residency in Cyprus is not taken into account in the model.

2.4.7 Guaranteed Minimum Income (*bsamm_cy*)

- *Definitions*

The Guaranteed Minimum Income (GMI) scheme is a means-tested top-up non-contributory benefit targeting individuals or families with income not enough to cover their basic needs. Basic need is defined on the basis of a minimum consumption basket. The GMI scheme substituted the Social Assistance in 2014.

Unit of assessment is the family consisting of:

- The claimant
- His/her spouse
- Children under the age of 18
- Unmarried children up to the age of 27 irrespectively if they reside with their parents or not (excluding children which live abroad).

- *Eligibility conditions*

The following categories of persons can apply for the benefit (provided that they have resided in the republic the five previous years):

- Every citizen of the republic.
- EU citizens provided that they have resided in Cyprus the last five years.
- Third country nationals if they have received the status of long term resident or are refugees (excluding asylum seekers)
- Victims of human trafficking.

Furthermore, the claimant should belong to one of the following categories:

- At least 28 years old
- married irrespectively of age
- single parent irrespectively of age
- orphan irrespectively of age
- disabled irrespectively of age

- adult person who before becoming 18 years old was under the care of Social Welfare Services.

Finally, a number of special categories such as monks, persons serving their military service in the National Guard, students (excluding those who are either under the care of Social Welfare Services or are orphans or are disabled or are voluntary unemployed) are not eligible for the benefit.

• *Income test*

GMI is a top-up benefit. Social welfare services calculate recipients' basic needs and family income. The difference is given to the eligible recipients as a top-up to their current income. Family income is the sum of the monetary incomes of all the members of the family (recipient) unit. Income from employment is exempted from the definition of family income, according to following schedule:

Table 8: Exempted income

Working earnings disregard for working poor (other than children aged 18-28)		Working earnings disregard for children aged 18-28	
Monthly earnings	Retention rate	Monthly earnings	Retention rate
Up to €50	100%	Up to €480	50%
€51 - €200	40%	€481 - €1000	90%
€201 - €500	20%	€1001 - €2000	85%
€501 and above	0%	€2001 and above	80%

Source: Ministry of Labour and Social Insurance

Example: If claimant's income from employment is €200, then €110 (€50 plus the 40% of €150) are exempted, meaning that only €90 are taken into account for the calculation of GMI. Another example is if the claimant has a child under the age of 28 (irrespective if he/she resides with him/her) with monthly earnings of €1000. Then, only €292 (€240+€52) will be accounted as family income.

Furthermore, the following benefits/pensions are not taken into account in the calculation of family income:

- Funeral grant
- Birth grant
- Student grant
- Military grant
- Financial aid to low income pensioners
- Donations to philanthropic institutions
- Alimonies (only in case that the claimant can prove that they are not paid to her)
- Benefits to disabled persons
- The first €12 which come from participation in employment or training schemes.
- Assistance through the Welfare Lottery Fund.

• *Benefit amount*

Basic income is calculated as the minimum monetary income necessary to ensure recipients' access to a complete consumption basket of goods and services that correspond to the minimum standard of living accepted by the society. The current value of the basket is equal to €480 for a single individual and increases with the size of the recipient unit in accordance with the OECD equivalence scales. The OECD scales assign a value of 0.5 to each additional adult and 0.3 to

each additional child. Children are defined as persons below 14 years old. For example, for a couple with 13 year old child, the basic amount is equal to $480+0.5*480+0.3*480=864$.

If the basic amount is larger than the family income, then the difference is paid to the eligible recipient. Furthermore, the amount of the benefit is supplemented with a housing allowance (see following Table). Eligible for the housing allowance are renters or homeowners who cannot repay their mortgage loans.

Table 9: Housing Allowance

Family Unit type	Nicosia/Limassol/Famagusta (€2.80/m2)	Larnaca (€2.45/m2)	Paphos (€1.75/m2)	weighted Average (2.63/m2)
Single or couple without children	€154	€134.75	€96.25	€144.6
Couple/single parent with 1 child	€224	€196	€140	€210.3
Couple/single parent with two minor children of the same sex	€224	€196	€140	€210.3
Couple/single parent with 2 adult children	€280	€245	€175	€262.9
Couple/single parent one adult child and one minor child	€280	€245	€175	€262.9
Couple/single parent with one adult child and two minor children of different sex	€280	€245	€175	€262.9
-> for each person with disability	additionally €70	€61.25	€43.75	€65.7
-> larger families (for each additional child or two additional minor children of the same sex)	additionally €56	€49	€35	€52.6

Source: Ministry of Labour and Social Insurance, Notes: minor child=child<18, adult child>=18

Notes on Euromod Implementation:

- Due to the lack of information the model does not account for the complex asset criteria of the benefit.
- Some special categories of recipients (e.g. orphans, disabled persons, persons under the Care of Social Welfare Services) cannot be identified by the model.
- Furthermore, according to the premises of the model claimants cannot be students and all unemployed persons are considered involuntarily unemployed.
- For the purposes of the simulation we adopted the following income list: original income (without excluding alimonies paid), old age pensions, survivor pensions, health benefits, unemployment benefits, scholarships, housing benefits, child benefits and family related benefits.
- Finally, all the families with are eligible to the basic benefit and paying mortgage interests are considered eligible to the housing allowance.

2.5 Social contributions

2.5.1 Employee social contributions

Participation in the Social Insurance Scheme is mandatory for all working population. The insured persons are divided into two categories: the employees and the self-employed.

Voluntary insurance is allowed to persons that are willing to continue insurance after a prescribed period of compulsory insurance. The social insurance contributions are estimated as a proportion of insurable earnings. Insurable earnings are earnings on which contributions are calculated and include any remuneration from employment as well as contributions paid to the Central Holiday Fund. The insured person, the employer and the state each pay a portion of the overall contribution.

The insurable earnings include a lower limit known as the basic insurable earnings. The basic insurable earnings separate the basic part and the earnings-related part of the scheme. The amount of annual basic insured earnings is set every year;

- €9,068 per year or €174.38 per week for the period 2015-2018,

These amounts are used for determining the eligibility and the level of old age pensions. Basic insurable amounts are also used for calculating the level of various contributory benefits, but in this case the amounts are slightly different:

- €72.98 per week for the period 2015-2018.

- ***Liability to contributions***

Social insurance contributions to Social Insurance Fund (SIF) are compulsorily paid by all employers and employees of private and public sector and self-employed persons¹⁰. Moreover, employees in the broad public sector are additionally covered by the Government Employees Pension Scheme (GEPS). However, as of the 1st of September 2011, newcomers in the public sector are not covered by the GEPS and pay contributions only to the SIF.

- ***Income base used to calculate contributions***

The insurable earnings of the employee include anything paid to the employee for his/her labour, i.e. basic salary, cost of living allowance, overtime, commissions, 13th salary, 53rd/56th week, the contribution of the employer to the Central Holiday Fund and holiday unions' funds. Only ex gratia payments are not included. Also, the Law sets a maximum amount of earnings for contribution purposes which is revised annually:

- €4,533 per month or €1,046 per week for the period 2015-2018,

In case that employee's earnings are higher than the maximum amount then contributions are not paid for the extra amount.

- ***Contribution rates***

The Social Insurance Scheme is financed by contributions paid by the employees, the employers and the State (through the Consolidated Fund of the Republic, "Πάγιο Ταμείο της Δημοκρατίας"). Currently the total contribution rate stands at 17.9% of insurable earnings (6.8 p.p. paid by the employer, 6.8 p.p. by the employee and 4 p.p. by the state). Employees who are additionally covered by an occupational scheme provided by the employer without the payment of contributions on the part of the employee (effectively, public sector employees who were hired before 2011) still contribute 17.9% of insurable earnings but 10.15 p.p. are paid by the employer, 3.45 p.p. by the employee and 4.6 p.p. by the state. It is worth mentioning, despite

¹⁰ The employer is liable to pay contributions to the Social Insurance, Annual Holidays with Pay, Redundancy, Human Resource Development and Social Cohesion Funds for each of his/her employees, whose remuneration is not less than €2 per week, or not less than €7 per month if s/he is a salaried employee, (Social Insurance in Cyprus, Ministry of Labour and Social Insurance).

that it is not simulated in the model, that the government has planned a gradual increase in the contribution rates which will be implemented the coming years aiming at ensuring the long-run fiscal sustainability of the social insurance scheme. The contribution rates are summarized in the next two tables:

Table 10: Social Insurance Contribution rates (Employees)

	After 1st April 2009	After 1st January 2014	After 1st of January 2019	After 1st of January 2024	After 1st of January 2029
Employee	6.8%	7.8%	8.3%	8.8%	9.3%
Employer	6.8%	7.8%	8.3%	8.8%	9.3%
Government	4.3%	4.6%	4.9%	5.2%	5.5%
Total	17.9%	20.2%	21.5%	22.8%	24.1%

Table 11: Social Insurance Contribution rates (Employees additionally covered by an occupational scheme which does not require the payment of contributions from the employee.)

	After 1 st April 2009	After 1st January 2014	After 1st of January 2019	After 1st of January 2024	After 1st of January 2029
Employee	3.45%	3.95%	4.2%	4.45%	4.7%
Employer	10.15%	11.65%	12.4%	13.15%	13.9%
Government	4.3%	4.6%	4.9%	5.2%	5.5%
Total	17.9%	20.2%	21.5%	22.8%	24.1%

EUROMOD notes: Data do not allow us to discern whether an employee is covered by a pension plan from the employer. For this reason the reduced contribution of 3.2% is applied only to civil servants.

2.5.2 Employer social contributions

- *Liability to contributions*

Employers are obliged to pay contributions to the Funds (Social Insurance, Annual Holidays with Pay, Redundancy, Human Resource Development and Social Cohesion) for every one of his/her employees whose earnings are at least €1.71 per week¹¹. The liability of the employer for paying contributions ceases the day, employees reach pensionable age. The employer is not obliged to pay contributions to the Central Holiday Fund if he obtains exemption from the Minister of Labour and Social Insurance. Exemption is granted in the cases where the employer provides annual holidays to his employees on more favourable terms than those provided under the Annual Holidays with Pay legislation.

- *Income base used to calculate contributions*

Insurable earnings have a maximum that is revised annually (contributions to Social Cohesion Fund are calculated on total earnings without maxima). Earnings include the basic salary, the cost of living allowance, commissions, the 13th and 14th salary or the 53rd/56th week, overtime etc. The gross amount of earnings (i.e. before the deduction of taxes and contributions) is taken into consideration. The amount of contributions paid by the employer to the Central Holiday Fund is considered as part of insurable earnings. Earnings payable to the employee for periods exceeding one week or one month, such as the 13th salary, earnings of the 54th week, commissions etc., are taken into consideration, up to the amount that when added to the earnings

¹¹ For trainees and apprentices, the employer has to pay contributions to the Social Insurance Fund even if the employee has no earnings.

of the employee for the period in question, these are not higher than the maximum amount for that period.

- **Contribution rates**

Contributions payable by the employers to the above mentioned Funds are calculated as a percentage on the earnings of the employee as explained below:

(a) Social Insurance Fund

The rate of 12.6% is divided between the employer and employee; each pay 6.3%. In case an employer implements an occupational pension scheme without payment of contributions by the employees, then the employer pays 9.4% and the employee 3.2%. Since 1st April 2009 the respective percentages are 13.6%, 6.8%, 6.8%, 10.15% and 3.45%. After the 1st January 2014, the contribution rate for employees, changed to 20.2%, of which 7.8% is paid by the employee, 7.8% by the employer and 4.6% from the Consolidated Fund of the Republic.

(b) Central Holiday Fund

The rate of contribution to the Central Holiday Fund varies according to the length of annual leave to which the employed person is entitled, as shown in the following Table:

Table 12: Rate of contribution to the Central Holiday Fund for employees with a 5-day/6-day working week

Duration of annual leave	Rate of contribution (%)
20	8
21	8.5
22-23	9
24	9.5
25	10
26	10.5
27-28	11
29	11.5
30	12
31	12.5
32-33	13
34	13.5
35	14
36	14.5
37-38	15
39	15.5
40	16
Rate of contribution to the Central Holiday Fund for employees with a 6-day working week	
Duration of annual leave	Rate of contribution (%)
24	8
25-26	8.5
27	9
28-29	9.5
30	10
31-32	10.5
33	11
34-35	11.5
36	12
37-38	12.5
39	13
40-41	13.5

42	14
43-44	14.5
45	15
46-47	15.5
48	16

The rate of contributions for leave longer than 40 days for 5-days working week and 48 days for 6-days working week are increased accordingly.

The contribution to the Central Holiday Fund is payable wholly by the employer.

(c) Redundancy Fund

The contribution to the Redundancy Fund (rate 1.2%) is payable wholly by the employer.

(d) Human Resource Development Fund

The contribution to the Human Resource Development Fund (rate 0.5%) is payable by the employer.

(e) Social Cohesion Fund

It was introduced on 1.1.2003. The contribution to the Social Cohesion Fund (rate 2%) is payable wholly by the employer.

The contributions under A, B, C, and D are computed on earnings up to the maximum amount specified above. The contributions under E are computed on actual earnings without any upper limit.

The rates under C, D, and E apply to trainees with low earnings and are applied to their actual earnings.

Notes on Euromod implementation: Central Holiday Fund: The same contribution rate (8%) was used for all the employers. Data do not provide information on whether an employee is covered by a pension plan from the employer. For this reason the reduced contribution of 9.4% is applied only to civil servants. Trainees cannot be identified in the dataset; the special rules applying to them are not simulated.

- *Random assignment*

The eligibility to pay contribution to the Central Holiday Fund is randomly simulated among the non-civil servants on the basis of the ratios presented in the next Table (for years 2017 and 2018, the 2016 is used as more recent information is not available).

Table 13: Contribution rate to Central Holiday Fund

	Number of Employees covered by Central Holiday Fund	Employees private and semi-public sector	Ratio
2012	98,845	356,704	0.277
2013	n.a.	n.a.	-
2014	80,187	332,266	0.241
2015	76,829	338,799	0.227
2016	74,462	356,786	0.209
2017	n.a.	n.a.	-
2018	n.a.	n.a.	-

2.5.3 Self-employed social contributions

- *Liability to contributions*

Self-employed are liable to social insurance contributions. Their insured earnings are set on the basis of their profession and workplace.

- *Income base used to calculate contributions*

For each professional category a compulsory minimum amount of insured earnings is set and the self-employed is allowed to pay contributions on a higher amount of insured earnings up to a maximum. If the real income of a self-employed is lower than the minimum corresponding to his/her professional category then he/she can ask to pay contributions based on his/her real income.

- *Contribution rates*

The total contribution of self-employed persons is 15.6% of their insured earnings. From this percentage, 11.6% is paid by the self-employed and 4% by the state. Since 1st April 2009 the total contribution of self-employed increased at 16.9% of their insured earnings; 12.6% is paid by the self-employed person and the rest 4.3% by the state. As of January of 2014; 19.2%, of which 14.6% is paid by the self-employed and 4.6% from the Consolidated Fund.

The contribution rate for self-employed will change as follows:

- As of January of 2019; 20.5%, of which 15.6% is paid by the same and 4.9% from the Consolidated Fund of the Republic.
- As of January of 2024; 21.8%, of which 16.6% is paid by the same and 5.2% from the Consolidated Fund of the Republic.
- As of January of 2029; 23.1%, of which 17.6% is paid by the same and 5.5% from the Consolidated Fund of the Republic.
- As of January 2034; 24.4%, of which 18.6% is paid by the same and 5.8% from the Consolidated Fund of the Republic.
- As of January 2039; 25.7%, of which 19.6% is paid by the same and 6.1% from the Consolidated Fund of the Republic.

The minimum amounts of insured earnings for the self-employed differ by professional category (doctors, managers, teachers, farmers etc.) and are used in the simulation as maximum amounts. This means that we assume that if the real income of a self-employed is lower than the minimum corresponding to his/her professional category, then pays contributions based on his/her real income and if his/her real income is higher than the minimum amount, then the paid contributions are based on the minimum amounts as follows;

- €431 per week in 2015-2018

EUROMOD notes: The minimum amounts used in the implementation are calculated as the mean of the professional category specific minima.

2.5.4 Government social contributions

The Social Insurance Scheme is also financed by contributions paid by the State. In both cases of employed and self-employed persons, the contribution paid by the government was 4.3% of insurable earnings and, after 2014 increased at 4.6%. Note also that contributions to the Annual

Holidays Fund are part of the earnings that are considered for the estimation of government contributions.

2.6 Personal income tax

2.6.1 Tax unit

Personal Income Tax in Cyprus is based on an individual system. Every citizen of the Republic of Cyprus is subject to income tax for incomes from sources inside and outside the country. Persons permanently settled in the Republic can choose to be treated as citizens of the Republic as concerns income taxation. Note also that contributions paid by the employer to the Annual Holidays Fund are part of the tax base.

2.6.2 Exemptions

The following types of income are exempt from income tax:

- the benefit paid to public employees for service abroad;
- the pensions and benefits paid according to the Suffering Relief Law;
- widow pensions paid from Social Insurance;
- any amount paid as lump sum, pension, compensation due to death or physical injury;
- income from scholarship or any other educational grant;
- payments to persons arising from tax deductions;
- earnings of foreign officers of any institution that operates in the Republic;
- income of any religious, charitable or educational institution with a public character;
- income of a registered cooperative bank arising from transactions with its members;
- income of a company that operates in order to promote art, science or sports;
- earnings of foreign diplomatic representatives; and
- income from interests and 50% of the income of a company from interests.

Notes on Euromod implementation: the tax base is computed as the sum of employment income, income from self-employment, pensions and 80% of rent income.

2.6.3 Tax allowances

The following amounts are deducted from a person's income:

1. Any amount spent for the repair of premises, machines, plants and transport equipment or for the renewal or repair or transformation of any tool, utensil or other objects used in order to raise income;
2. The annual contributions paid by the employee to the various Funds;
3. Bad debts;
4. Expenditures for scientific research;
5. Expenditures for acquiring a patent or copyright;
6. Charity payments or contributions to educational institutions or payments for other charity purposes;

7. Expenditures for the maintenance of a building for which a maintenance order is issued and for the maintenance of an ancient monument;

An amount equal to 20% is deducted from the income acquired from renting buildings before anything else is deducted from this.

Deductions are offered for the decrease of value and damages on assets due to usage from personal income from the operation of a company. An amount equal to the annual amount of the paid premiums and contributions is deducted in order to find the taxable income of any person who has:

1. insured his/her life or the life of the spouse for an amount payable on his/her death;
2. paid contributions to a pension, widow and orphan fund;
3. paid contributions to a pension or provident or any other insurance fund;
4. paid premia or any other contributions to an insurance company for the issuance of a specific insurance contract;
5. paid premia or any other contributions to an insurance company for a pension or the medical plan; and
6. paid contributions to the general health plan;

In the case of a life insurance contract where the insured person will receive a payment of a predetermined amount on his/her death then the amount of the deduction cannot exceed 7% of this amount. The total deduction for contributions and premiums cannot exceed 1/6 of the taxable income. In case of encashment of a life insurance contract within 3 years from the date of the contract then 30% of the premium paid for which a deduction was given is added to the income of the person. This is reduced to 20% if the encashment is made on the 4th or 5th or 6th year of the contract.

Notes on Euromod implementation: due to data limitations, the only deductions taken into account in the implementations are those of the social insurance contributions, as well as the contributions to individual private pension plans up to an amount that cannot exceed 1/6 of the taxable income. As well as the 20% deduction on property income.

2.6.4 Tax base

The tax base is defined as taxable income minus the various deductions. Taxable income is total income minus the various exemptions.

2.6.5 Tax schedule

Income taxation is progressive, with higher marginal tax rates applying to higher income brackets. The tax rates were stable during 2015-2018.

Table 14: Tax rates and income brackets

Tax rate	2015-2018
0-19,500	0%
19,501 – 28,000	20%
28,001 – 36,300	25%
36,301 –60,000	30%
60,001- above	35%

2.6.6 Tax credits

Tax credits exist in case of double taxation and are not considered in the simulations within Euromod.

2.7 Other taxes

2.7.1 Special contribution to defence

Special Contribution to defence is imposed on income earned by individuals and legal entities based on Cyprus. Non-tax residents are generally exempt. It is charged at the following rates:

1. 17% on income from dividends
2. 30% on income from interest (paid or credited). Interest received by a person from the normal operation of his/her company is not considered as interest. Persons with annual income (including interest) not exceeding 12,000 euro have the right to refund amounts withheld as contribution for defence on interest income above 3% of this income.
3. 3% on income from Cypriot savings certificates, Cypriot development bonds and interest from provident funds.
4. 3% on gross rents decreased by 25%.

Money paid as special contribution for defence is taxable.

Notes on Euromod implementation: contributions under point 1 and 3 are not simulated. The contributions of legal entities are out of the scope of the model; therefore special contributions for defence are partly simulated.

2.7.2 Special contribution of public employees

Starting from 1st September 2011, public sector employees and pensioners receiving pension from the Government Employees’ Pension plan have to pay a special contribution to the Government. This policy is part of the austerity measures that were undertaken in the framework of fiscal consolidation.

The special contribution is applied on gross monthly income from employment in the broad public sector and on the gross monthly amount from pensions paid from the government employees’ pension plan. After the 1st of January 2012, pensions paid from the Social Insurance Fund (to pensioners who were employed in the public sector) are also included in the calculation. Gross income is defined as the income before taxes and contributions (including contributions to Annual Holiday Fund).

The special contribution of public employees is progressive, with higher contribution rates applying to higher income brackets. The contribution rates and income contribution brackets are shown in the following table:

Table 15: Contribution rates and income brackets

Contribution rate	Time period		
	1 st September 2011-31 st December 2011	1st January 2012-31st December 2013	1 st Jan 2014 – 31 st December 2016
0%	0-1,500	0-2,500	0-1,500

1.5%	1,501-2,500	-	-
2.5%	2,501-3,500	2,501-3,500	1,501-2,500
3.0%	3,501-4,500	3,501-4,500	2,501-3,500
3.5%	4,501+	4,501+	3,500+

After 1st January 2012, the special contribution is exempted from income tax. Furthermore, the contribution is applicable during the period starting from 1st January 2011 till the 31st December 2013. The special contribution was abolished as of 1st January 2017.

Notes on Euromod implementation: EUROMOD model simulates the system as it stands on 30th June of the given year. For that reason, only the 2012 system simulates the above contribution. The simulated rules are those relative to the period 1st January 2012 - 31st December 2013.

2.7.3 Special contribution of private employees, self-employed and pensioners who were former private employees

Another contribution was put in effect on 1st January 2012 (ending on 31st December 2013, targeting private sector employees, self-employed and pensioners of the private sector. The measure was also part of the fiscal efforts to contain rising public debt. Gross monthly income is the basis for the calculation of the contribution. Gross income includes wages, salaries, overtime compensation, tips and other benefits paid in the case of employees. In the case of self-employed, it cannot be lower than the minimum monthly amount of insured earnings (as defined by Social Insurance Services). As regards pensions, it includes all old-age, private, survivor and disability pensions.

The schedule is progressive, characterized by higher contribution rates as income increases. The contribution rates and respective income brackets are shown in the following table. The contribution is calculated on gross wage before any taxes or contributions (including contributions to Annual Holiday Fund).

Table 16: Contribution rates and income brackets

Contribution rate	Period	
	1 st January 2012-31 st December 2013	1 st Jan 2014 – 31 st December 2016
0%	0-2,500	0-1,500
2.5%	2,501-3,500	1,501-2,500
3.0%	3,501-4,500	2,501-3,500
3.5%	4,501+	3,501+

In the case of private sector employees, the contribution is half paid by the employee and half paid by the employer. There is no upper ceiling on the income upon which the special contribution is applied. Finally, the special contribution is exempted from the income tax.

The special contribution was abolished as of 1st January 2017.

Notes on Euromod implementation: The special contributions for pensioners from the private sector and former public sector are simulated together in the policy *txcpe_cy*. Since the contribution schedule is the same for both types of pensioners, this choice does not affect the quality of the simulation.

2.7.4 Contribution of public employees to Government Employees Pension Plan

Starting from 1st October 2011, all broad public sector employees who are covered by the Government Employees Pension Plan (here note that employees hired in the public sectors after 30th September 2011 cannot be subscribed in the scheme) pay 3% of their gross employment income to the Government as a support to the Government Employees Pension Plan. Typically, these payments are not considered as contributions to the Government Employees Pension Plan (since the pension benefits from the Government Employees Pension Plan do not depend on the amount of this payment). Finally, if the employee has contributed over 400 monthly social insurance contributions, then s/he is exempted from the contribution.

Notes on Euromod implementation: The distinction between public sector employees who started before or after 1st October 2011 is carried out by the imputed variable *lcs10*. See the Data section for further information on the variable. The exemption of those who contributed above 400 months is simulated by making use of the employment history of the person.

2.7.5 Contributions of public employees to the Widows and Orphans Government Fund

All broad public sector employees pay a contribution to the Widows and Orphans Government Fund. Before 1st October 2011, the contribution was equal to 0.75% of the gross wage. In case that the gross wage exceeded the maximum amount of insurable earnings then a rate of 1.75% was applied to the part of the gross wage which exceeded the maximum amount. A brief example describes how the contribution is calculated: Let the gross wage be 5000€, then the contribution is:

$$C = 0.75\% * 4,442 \text{ (this was the maximum amount of insurable earnings in 2012)} + 1.75\% * (5,000 - 4,442).$$

As of the 1st October 2011, the rules simplified. The contribution increased at 2% of the gross wage without any minima/maxima. Again, if the employee has contributed over 400 monthly social insurance contributions then she is exempted from the contribution.

Note to Euromod Implementation: This instrument is implemented within the policy *tscee_cy* and included in the variable *tscee_s* (employees' social insurance contributions). The exemption of those who contributed for over 400 months is simulated by making use of the employment history of the person.

2.7.6 Scaled reduction in emoluments of public and broader public sector pensioners and employees

Starting from 1st December 2012, the government implemented a scaled reduction in the emoluments of public sector employees and pensioners. The reduction is applied on gross wages and pensions. The term 'gross' refers to income before all taxes and contributions. On 30th April 2013, the House of Representatives voted for a modification of the law that changed the reduction rates. After the 1st June 2013, the scaled reduction appearing in the last column of the following table substituted the one voted in 2012. From 1st January 2014, emoluments in the public sector (including pensions of the public sector) decreased by another 3 per cent (on top of the reduction which is in effect since 1st June 2013).

Table 17: Scaled reductions

Income brackets	Rates		
	From 1st December 2012	From 1 st June 2013	From 1 st January 2014

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0-1,000	0%	0.8%	3%
1,001-1,500	6.5%	7.3%	3%
1,501-2,000	8.5%	9.3%	3%
2,001- 3,000	9.5%	10.5%	3%
3,001-4,000	11.5%	13%	3%
4,001-above	12.5%	14.5%	3%

3. DATA

3.1 General description

The EUROMOD database is drawn from the UDB version of SILC. The following Table includes information about period of collection, income reference period, sample size and response rate.

Table 18: EUROMOD database description

EUROMOD database	CY_2016_a1
Original name	UDB_c16_release 18-03
Provider	Eurostat
Year of collection	2016
Period of collection	n/a
Income reference period	2015
Sample size	11,203 IND, 4,178 HH
Response rate	n/a

3.2 Data adjustment

Data adjustments were kept to a minimum. All monetary values in the EU-SILC database are expressed in annual terms, but for the purposes of the EUROMOD database, were converted into monthly basis.

3.3 Imputations and assumptions

A number of variables, shown in next Table, were imputed using other EU-SILC aggregated variables. In EU-SILC data, soldier's allowance (bml) is recorded as employee cash or near cash income, (variable py010g). We set bml equal to py010g/12 if the individual a) has never worked as employee, b) has spent a positive number of months in compulsory military service and c) declares employee (cash or near cash) income. If the individual has spent a positive number of months in compulsory military service and has also worked as an employee then variable bml is set equal to the basic monthly soldier's allowance (around 146 euro in 2014) times the months spend in the army divided by 12.

Since the 2015 EU-SILC dataset release, monetary variables for benefits are disaggregated to four categories based on eligibility conditions (means tested or not and contributory or not).

Variable py111g includes contributory and means tested survivor's benefits, py112g contributory and non-means tested survivor's benefits, py113g includes non-contributory and means tested survivor's benefits, and py114g includes non-contributory and non-means tested survivor's benefits. Survivor's benefits are grouped into three variables, survivor's benefit to widow (psuwd), survivor's benefit to orphan (psuor) and other survivor's benefits (psuot).

- psuwd was set equal to py112g/12 + py113g/12, if py112g and/or py113g is positive, the marital status (pb190) is widow(er) or the individual is married but no partner's id (rb240) is recorded in the data.
- psuor is set equal to py112g/12 + py113g/12, if py112g and/or py113g is positive, the individual is not a widow(er), and is aged less than 25.

- $psuot$ is equal to $py110g/12 - psuwd - psuot$, if $py110g$ is positive¹².

EU-SILC variable $py140g$ (and the disaggregated variables $py141g$, $py142g$, $py143g$ and $py144g$) includes all education related allowances for tertiary education (student grant and scholarships). Based on this variable we impute two variables, one for the student grant ($bedet$) which is given to parents with children in tertiary education and one for scholarships ($bedsl$) which are received by the students. If an individual with positive value of $py143g$ is a student then this is income from scholarships and thus $bedsl$ is set equal to $py143g/12 + py144g/12$. On the other hand, if an individual with positive $py143g$ is not a student (i.e. is the parent of a student) then $bedet$ is equal to $py143g/12/13$.

All child and family related benefits are recorded in the harmonised variable $hy050g$ and also in the disaggregated variables $hy052g$, $hy053g$, and $hy054g$. We use these variables to impute a variable for child benefit (bch), for birth grant ($bchba$), for maternity allowance (bma), for single parent benefit ($bchlp$) and for other family related allowances ($bfamh$). We impute the received family birth grant by multiplying the amount of birth grant (544 euro) with the number of children in family aged less than 1. If the imputed birth grant is lower or equal to $hy052g$ then we set $bchba$ equal to the imputed birth grant. In case that the imputed birth grant is higher than $hy052g$ then we set $bchba$ equal to $hy052g$. The maternity allowance is set as the difference between $hy052g$ and birth grant. The imputation of child benefit (bch) is based on the child benefit policy defining eligibility and benefit rates. We simulate the amount of the child benefit for each eligible family and we compare it with the $hy053g$. If $hy053g$ is higher than the simulated child benefit then bch is set equal to the simulated child benefit. If $hy053g$ is lower than the simulated child benefit then bch is set equal to $hy053g$. The imputation of single parent benefit ($bchlp$) is based on the single parent benefit policy defining eligibility and benefit rates. We simulate the amount of the single parent benefit for each eligible family and we compare it with the $hy053g$ excluding the bch amount received by the family. If $hy053g$ (subtracting bch) is higher than the simulated single parent benefit then $bchlp$ is set equal to the simulated single parent benefit. If $hy053g$ (subtracting $bchlp$) is lower than the simulated single parent benefit then $bchlp$ is set equal to $hy053g$. We set $bfamh$ equal to $hy050g$ minus bch , $bchba$, $bchlp$, and bma .

All old-age benefits are included in variable $py100g$ and in the disaggregated variables $py101g$, $py102g$, $py103g$ and $py104g$. Three old-aged variables are created, the social pension ($poasp$), the taxable old aged pension ($poatx$) and the non-taxable old aged pension ($poant$). Variable $poasp$ is set equal to $py104g$ if the amount of $py104g$ is close to the amount of social pension (347.93 euro per month). For imputing $poatx$ and $poant$ we compare the net and gross amount of $py100g$ variable. The difference of $py100g$ and $py100n$ give us the tax paid and by reversing the income tax policy we found the taxable amount. We set $poatx$ equal to this taxable amount and the difference of $py100g - poatx - poasp$ is set equal to $poant$ ($poant = py100g - poatx - poasp$).

In EU-SILC data the unemployment benefits are recorded in variable $py090g$ and in the disaggregated variables $py091g$, $py092g$, $py093g$ and $py094g$. For unemployment benefits two variables are created; the unemployment benefit paid by the Social Insurance Fund ($bunct$) and from other sources ($bunot$). Taking into account the unemployment benefit policy we find the maximum monthly amount an individual with positive $py092g$ can receive as unemployment benefit. We compare this maximum unemployment benefit amount with the monthly unemployment benefits reported in the data, i.e. $py092g$, divided by the reported numbers of months in unemployment but constraining this duration to be up to six months (unemployed can receive unemployment benefits for up to six months). If the maximum monthly unemployment

¹² No contributory and means tested ($py111g$) survivor benefits exist in Cyprus.

¹³ No contributory and means tested ($py141g$) or contributory and non-means tested ($py142g$) education related allowances exist in Cyprus.

benefit amount is lower than reported monthly unemployment benefit then we set bunot equal to the difference of the two amounts (multiplied with the duration of unemployment and divided by 12) and bunct equal to the maximum monthly unemployment benefit amount (multiplied with the duration of unemployment and divided by 12). If the maximum monthly unemployment benefit amount is equal or higher than the reported monthly unemployment benefit then we set bunot equal to zero and bunct equal to the reported monthly unemployment benefit (multiplied with the duration of unemployment and divided by 12). In addition, in bunot, benefit amounts included in py094g/12 are added. Using the unemployment benefits paid by the Social Insurance Fund (bunct) the monthly wage before unemployment (yempv) is obtained by reversing the unemployment benefit policy¹⁴.

EU-SILC do not provide information whether someone works in the public sector or in the private sector. We impute if someone is a civil servant (variable lcs) using the economic activity variable (pl110) and status in employment. If the individual is employee working in public administration and defence, compulsory social security or in education then we assume he/she is a civil servant.

Based on the already available information, we also construct a variable indicating whether a civil servant had been hired in the public sector during the last 12 months (variable lcs10). For this imputation we used information whether someone is a civil servant (lcs=1) and about his/her work history (number of months [liwwh]). Thus, if someone is a civil servant and has work history less than 12 months then we assume that he/she was hired in the public sector in the last 12 months. The indicator variable for military conscripts (young man enlisted in the army) (l01) is created based on the information provided by individuals about their current activity status in the labour market (variable pl030). When pl030=7 then the individual is in compulsory military service. Finally, variable l02 denotes whether someone is pensioner of the public sector or not. Pensioners who are former civil servants usually receive higher pension income than other pensioners because they receive a pension from the SIF (Social Insurance Fund) as well as a pension from the Government Employees Pension Plan. Using this information we define as former civil servants those who (i) are pensioners (les=4) and (ii) their monthly old age pension is higher than the sum of the minimum full pension from the SIF plus the minimum full pension from the Government Employees Pension Plan.

Table 19: List of imputed variables

Variable name	Description
bml	BENEFIT/PENSION : Soldier allowance
psuwd	BENEFIT/PENSION : Survivors : widow
psuor	BENEFIT/PENSION : Survivors : orphan
psuot	BENEFIT/PENSION : Survivors : other
bedet	BENEFIT/PENSION : Education : student grant
bedsl	BENEFIT/PENSION : Education : scholarship
bch	BENEFIT/PENSION : Child benefit
bchba	BENEFIT/PENSION : Maternity : birth grant
bchlp	BENEFIT/PENSION: Child: Single parent benefit
bma	BENEFIT/PENSION: Maternity allowance
bfamh	BENEFIT/PENSION : Family : Family related allowances
poasp	BENEFIT/PENSION : Social Pension - Old Age

¹⁴ No contributory and means tested (py091g) or non-contributory and means tested (py093g) unemployment benefits exist in Cyprus.

poatx	BENEFIT/PENSION : Taxable old Age
poant	BENEFIT/PENSION : Non taxable old Age
bunct	BENEFIT/ SIC: unemployment benefit
bunot	BENEFIT: Other unemployment benefit
yempv	INCOME: monthly wage from previous work
lcs	LABOUR MARKET : Civil Servant
lcs10	LABOUR MARKET : Newly hired (in the last 12 months) Civil servant
lc01	LABOUR MARKET : Military
l02	LABOUR MARKET: Pensioner – former civil servant

3.3.1 Time period

The EU-SILC information on demographic variables refers to the time of data collection, while the income reference period is year 2015. Accordingly, the same reference period applies for income taxes and social insurance contributions, as well as taxes on wealth.

3.3.2 Gross incomes

The EU-SILC survey contains information on gross and net monetary income. In the very few cases where gross income was impossible to collect, net income was recorded and converted to gross by applying the tax as well as social insurance contributions rules of the system.

3.3.3 Disaggregation of harmonized variables

As discussed earlier, several harmonized EU-SILC variables were disaggregated into their components. These are:

- Survivor's benefits included in *py112g* and *py113g* is decomposed into three parts, survivor's benefit to widow, survivor's benefit to orphan and other survivor's benefits.
- Education-related variable *py143g* is decomposed into student grant and income from scholarships.
- Child and family related variables are recorded in harmonized variable *hy050g* and in disaggregated variables *hy052g*, *hy052g*, *hy052g* and *hy054*. We decompose these variables into child benefit, birth grant, maternity allowance, single parent benefit and other family related allowances.
- Old-age benefits included in variable *py102g* are decomposed into two parts the taxable old aged pension part and the non-taxable old aged pension part.
- Unemployment benefits included in variable *py092g* are decomposed into two parts the unemployment benefit from SIF part and the other unemployment benefits part.

3.4 Updating

The income variables in the EU-SILC dataset refer to 2015. This information has been updated in order to take into account changes that have taken place between the year of the data and the year of the simulated tax-benefit system. Updating factors are generally based on changes in the average value of an income component between the year of the data and the policy year. Annex 1 provides detailed information about each updating factor.

4. VALIDATION

4.1 Aggregate Validation

EUROMOD results are validated against external benchmarks. Detailed comparisons of the number of people receiving a given income component and total yearly amounts are shown in Annex 2. Both market incomes and non-simulated taxes and benefits in the input dataset as well as 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. Factors that may explain the observed differences are also discussed.

4.1.1 Components of disposable income

Table 20 shows the components comprising disposable income in SILC based on SILC 2016.

Table 20: Components of disposable income

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

4.1.2 Validation of incomes inputted into the simulation

Tables 4.2-4.6 in the Annex report figures on the number of recipients/earners and the total amounts of incomes and non-simulated benefits for the years 2015-2018. The Tables also include official statistics collected from various administrative sources (Statistical Service of Cyprus, Ministry of Labour and Social Insurance, Ministry of Finance and the Tax Department) which are used in the validation of the database. It should be stressed from the outset that the

scope of macrovalidation is considerably reduced by the limited supply of administrative data¹⁵, the timeliness of official data publications and, in some cases, by the differences in the statistical definitions between the various sources of data.

In Table 4.2 of Annex 3 the number of employed and unemployed people is compared to external statistics. The number of employed people in 2015 and 2016 is well captured, while the number of unemployed persons is overestimated by 44% and 64% in 2015 and 2016 respectively. In Tables 4.3 and 4.4 market incomes are validated with respect to earners and total amounts. Employment income recipients are overestimated, but not very significantly whereas their incomes are underestimated. The number of self-employed persons is overestimated by a large extent. The number of recipients and total spending on non-simulated benefits are shown in Tables 4.5 and 4.6. As regards sickness benefits, the input data underestimate the number of recipients. Unemployment benefits are accurately depicted in the data as the number of recipients and total spending. Social pension is also very accurately captured by the data both in terms of the number of recipients (only 2% difference between model and official data in 2015, none in 2016) and total expenditures (less than 6% difference in 2015 and 2016). Orphan allowance recipients are underestimated at a large extent, possibly due to differences in the statistical definition between the two sources of data. Finally, the number of widow pension recipients is moderately underestimated by 12% and the income is overestimated by 19% in 2015.

4.1.3 Validation of outputted (simulated) incomes

The scope of this section is to compare simulated incomes with corresponding official data. Additionally to the limitations outlined in section 4.1.2 (i.e. data availability), this comparison is challenging for further reasons:

a) using a sample for calculating totals requires caution. The use of grossing factors (weights) is necessary to compute a population total using a sample. The basic statistical utility of grossing factors is to alter the proportions of different groups (i.e. to adjust for unequal selection probabilities or non-response). Despite that grossing factors, by default, add up to the total population, it might be the case that several sub-groups are under- or over-represented. Thus the mere fact that the population totals are derived from a sample might be the cause of observed differences between simulated and official data, irrespectively of the precision of the microsimulation process¹⁶.

b) Administrative data are collected using accounting procedures that serve the needs of public authorities. This might mean that the underlying statistical definitions may not be suitable for the purpose of macro-validating a microsimulation model. For example, in Cyprus, statistics of annual public spending on various benefits refer to the total value of payments for each benefit that took place within a particular year. Yet, many of these payments refer to benefit entitlements of previous years (for example; a family is entitled a birth grant in 2015, but the amount is credited to family's bank account in 2016).

On the basis of the above, the comparison between estimates of EM totals and administrative data is meaningful insofar we compare only the order of magnitude between the two figures. In

¹⁵ In some cases, EM variables represent groups of benefits (e.g. housing allowances, pensions and family-related allowances). Meaningfully macrovalidating these variables requires the timely collection of official data from a variety of public service; an endeavour severely constrained by practical limitations.

¹⁶ For example, the sample may underestimate the total number of persons with disabilities. If this is the case, then the number of recipients of disability benefits will be underestimated, even if the microsimulation procedure is very precise.

cases that differences are large, we have an indication that the simulation might not be perfect and possibly some adjustments are due (for example, the benefit in question is characterised by considerable non take-up, more detailed data are needed, etc.). Bearing in mind these caveats, it appears that the model provides relatively good estimates of the simulated instruments, despite that several discrepancies arise. Our long-run purpose is to gradually improve the model, exploiting our better understanding of the social protection system, as well as incorporating in the model new advances in microsimulation techniques.

Tables 4.7 and 4.8, included in Annex 3, report differences between the number of recipients/payers and aggregate yearly amounts of various simulated benefits/taxes/contributions and administrative data. Unfortunately, administrative data are only available for a limited number of benefits/taxes/contributions. The number of recipients of birth grant seems to be overestimated by 26% in 2015 and 51% in 2016. Similarly the annual amount spend on birth grant is overestimated by 33%. One hypothesis for explaining overestimation patterns is that they might be due to increasing incidence of non take-up.

The estimates regarding the number of employees paying social insurance contributions is slightly underestimated by 10%. On the other hand, the number of self-employed are overestimated by 113% and the annual amount of self-employed social insurance contributions is overestimated by 85%. The misestimation regarding self-employed can be attributed to the lack of reliable external statistics, and to the tendency of self-employed to underreport their incomes in the governmental authorities.

4.2 Income distribution

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

4.2.1 Income inequality

EUROMOD estimates on income inequality, as reflected on deciles shares and Gini index, are close to EUROSTAT estimates. Income share ratios (presented in Table 4.9 in Annex 2) are very close to unity with the exception of the poorest decile whose income is overestimated (by 15% compared to EU-SILC estimates), while the share of the rich decile is slightly underestimated.

4.2.2 Poverty rates

Comparisons of poverty estimates (shown in Table 4.10 in Annex 2) show that, poverty indicators generated by EUROMOD are close to other sources when ‘common’ poverty lines (i.e. poverty threshold equal to 60% of the median equivalized disposable income) are adopted. On the contrary, the model appears to provide inaccurate estimates of poverty rates when ‘extreme’ common poverty lines are chosen (for example, when setting the poverty line at 40% of the median equivalized disposable income).

In general, distributional discrepancies (underestimating or overestimating incomes at certain parts of the income distribution) might be due to the fact that the current version of the model does not make any adjustments for tax evasion and non take-up. As regards the issue of tax

evasion, according to Pashardes and Polycarpou (2008) the size of black economy in Cyprus is around 6.7% - 8.1% of GDP, with income from self-employment being under-reported by 44.8% and capital income by 40.3%, [the highest under-reporting rate was estimated for agricultural income (59.9%)]. In regard to non take-up in Cyprus, to the best of our knowledge this topic has not been yet analysed.

4.3 Summary of “health warnings”

The model simulates a number of policy instruments of the tax-benefit system of Cyprus. It is a valuable tool that enables the user to estimate the first-round distributional and fiscal effects of potential policy reforms. Nevertheless, the following caveats should be taken into consideration in order to interpret the results meaningfully:

- Issues of data comparability

The validation of the model requires to compare the results of microsimulation (e.g. total number of recipients and annual spending per benefit) with external to the model data usually coming from administrative sources. Due to lack of data availability and difficulties in collecting administrative data in a systematic manner, the process of macrovalidation is imperfect.

- Partly simulated instruments

Several instruments were not fully simulated due to data limitations. For example, the public assistance benefit is only partly simulated since it is not possible to gather information about the special needs of the recipients (which are nevertheless covered by the Public Assistance Law). A similar issue pertains with the simulation of the GMI benefit which again can only be imperfectly simulated. Another example regards the eligibility conditions of several contributory benefits which depend on having knowledge on the contributory record of the potential recipient. Of course, such information is not (and could have been) included in the underlying database.

- Imperfect targeting and tax evasion

The model does not take into account imperfect non-take up, income underreporting and tax evasion. This may cause differences between simulated and actual values. In practice, welfare programmes are subject to Type I and Type II errors. Type I errors arise from “false” negatives, meaning that the benefit is not attributed to an eligible recipient. On the other hand, Type II errors arise from “false” positives, that is the benefit is attributed to non-eligible persons. Lastly, the existence of tax evasion may cause biases to distributional statistics.

5. REFERENCES

Pashardes, P. & Polycarpou, A. (2008) “Income Tax Evasion, Inequality and Poverty”, Cyprus Economic Policy Review, University of Cyprus, Economics Research Centre, 2(2): 37-49.

- *Sources for tax-benefit descriptions/rules*

Ministry of Labour and Social Insurance:

<http://www.mof.gov.cy/mlsi>

Ministry of Finance, Grants and Benefits Service:

http://www.mof.gov.cy/mof/mof.nsf/page24_gr/page24_gr?OpenDocument

Legal acts in English:

http://www.mlsi.gov.cy/mlsi/sws/sws.nsf/dmlindex_en/dmlindex_en?OpenDocument

ANNEX 1: UPRATING FACTORS

Table A1.1 Uprating factor values and sources, 2015-2017

Index	Reference	2015	2016	2017	2018	Source
CPI (2005=100)	\$f_CPI	114.81	113.17	113.77	113.15	Source: Republic of Cyprus, Statistical Service, Economy & Finance, 2018: available info only for January
Unadjusted average quarterly earnings	\$f_EmplInc	1882.61	1878.46	1885.68	1875.40	Source: Republic of Cyprus, Statistical Service, Economy & Finance, 2018: projection using CPI
Basic annual child benefit for 1 child	\$f_childben	380.00	380.00	380.00	380.00	Source: Ministry of Finance, Grants and Benefits Services, http://www.mof.gov.cy/mof/mof.nsf/page24_gr/page24_gr?OpenDocument
Average annual amount of the student grant	\$f_studgrant	1710.00	1710.00	1710.00	1710.00	Source: Ministry of Finance, Grants and Benefits Services, http://www.mof.gov.cy/mof/mof.nsf/page24_gr/page24_gr?OpenDocument
Monthly public assistance benefit amount for head	\$f_bsa	0.00	0.00	0.00	0.00	Source: Ministry of Labour and Social Insurance, Department of Social Insurance Services, Statistical data, archived statistical data; http://www.mlsi.gov.cy/mlsi/sid/sidv2.nsf/page21_gr/page21_gr?OpenDocument ; bsa replaced by GMI
Basic amount of a number of benefits	\$f_ben	415.15	415.15	418.51	418.51	Source: Ministry of Labour and Social Insurance, Department of Social Insurance Services, Statistical data, archived statistical data; http://www.mlsi.gov.cy/mlsi/sid/sid.nsf/All/F3B961BBD84C6F2FC2257693004372FE?OpenDocument
Basic monthly amount of orphan grant	\$f_psuor	276.77	276.77	279.01	279.01	Source: Ministry of Labour and Social Insurance, Department of Social Insurance Services, Statistical data, archived statistical data; http://www.mlsi.gov.cy/mlsi/sid/sid.nsf/All/F3B961BBD84C6F2FC2257693004372FE?OpenDocument
Basic amount of birht grant	\$f_bchba	544.08	544.08	544.08	544.08	Source: Ministry of Labour and Social Insurance, Department of Social Insurance Services, Statistical data, archived statistical data; http://www.mlsi.gov.cy/mlsi/sid/sid.nsf/All/F3B961BBD84C6F2FC2257693004372FE?OpenDocument
Basic monthly amount of social pension	\$f_poasp	336.28	336.28	338.99	338.99	Source: Ministry of Labour and Social Insurance, Department of Social Insurance Services, Statistical data, archived statistical data; http://www.mlsi.gov.cy/mlsi/sid/sid.nsf/All/F3B961BBD84C6F2FC2257693004372FE?OpenDocument
Average yearly income from employment, previous year	\$f_yempv	1893.05	1882.61	1878.46	1885.68	Source: Republic of Cyprus, Statistical Service, Economy & Finance
Basic amount of military grant	\$f_bml	146.47	146.47	146.47	146.47	Source: Ministry of Defence, Statistical office
Empl Income civil servants	\$f_EmplInc_Publ	1990.72	1990.72	1990.72	1990.72	Source: Republic of Cyprus, Statistical Service, Economy & Finance, as \$f_EmplInc, but no growth in earnings in 2013 and 2014
Taxable public pensions	\$f_poatx_publ	415.15	415.15	418.51	418.51	Source: Ministry of Labour and Social Insurance, Department of Social Insurance Services, Statistical data, archived statistical data; http://www.mlsi.gov.cy/mlsi/sid/sid.nsf/All/F3B961BBD84C6F2FC22576

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GDP at market values	\$f_GDP	4450.80	4536.20	4799.50	4773.34	93004372FE?OpenDocument Source: Ministry of Labour and Social Insurance, Department of Social Insurance Services, Statistical data, archived statistical data; http://www.mlsi.gov.cy/mlsi/sid/sidv2.nsf/page21_gr/page21_gr?OpenDocument ; Q2 values, adjusted for seasonality and working days;2018: projection using CPI
Average pension from SIF	\$f_avgpen	9019.98	9103.28	9187.36	9272.21	Source: Ministry of Labour and Social Insurance, Department of Social Insurance Services, Statistical data, archived statistical data; http://www.mlsi.gov.cy/mlsi/sid/sid.nsf/All/F3B961BBD84C6F2FC2257693004372FE?OpenDocument , 2017-2018: 2015-2016 increase assumed
Monthly Guaranteed Minimum Income benefit amount for head	\$f_bsamm	480.00	480.00	480.00	480.00	Source: Ministry of Labour and Social Insurance, Department of Social Insurance Services, Statistical data, archived statistical data; http://www.mlsi.gov.cy/mlsi/mlsi.nsf/All/517E1B1FE19B0418C2257CD7001E73BB
Maternity allowance	\$f_bma	1882.61	1878.46	1885.68	1875.40	Source: Ministry of Labour and Social Insurance, Department of Social Insurance Services, Statistical data, archived statistical data; http://www.mlsi.gov.cy/mlsi/mlsi.nsf/All/517E1B1FE19B0418C2257CD7001E73BB
Single parent benefit	\$f_bchlp	180.00	180.00	180.00	180.00	Source: Ministry of Labour and Social Insurance; http://www.mlsi.gov.cy/mlsi/mlsi.nsf/All/B9FE1D473E04627EC22581250024C33A

ANNEX 2: POLICY EFFECTS IN 2017-2018

Table 1 and Figure 1 show the *ceteris paribus* effect of 2018 policies on mean equivalised household disposable income by income component and income decile group. The effect is estimated as the difference between the simulated household disposable income under the 2018 tax-benefit policies (incomes have been deflated using the Eurostat's Harmonized Index of Consumer Prices, HICP¹⁷) and the simulated household disposable income under 2017 policies and then this difference is measured as a percentage of the mean equivalised household disposable income in 2017.

The overall estimated effects of policy changes from 2017 to 2018 are relatively small in Cyprus. This can be explained by marginal changes in 2017 policy rules. Most benefit levels, income thresholds and tax rates have remained constant.

The effects are estimated to be regressive with higher income decreases in the bottom income groups. This effect is however reversed for the highest two income groups. Across income groups, income losses are due to the non-indexation of pensions and especially in lower income groups due to lower means-tested benefits which is not due to policy changes per se but due to the non-indexation of benefit levels. The increased income threshold of the child benefit for families with 4 or more children is estimated to have a positive effect for the 8th decile only. The number of families with 4 or more children is usually very small which leads to very small policy effects.

¹⁷ Annual average retrieved from Eurostat website, AMECO forecast for 2018 data.

Table 1: Policy effects in 2017-2018, using the CPI-indexation, %

Decile	Original income	Public pensions	Means-tested benefits	Non means-tested benefits	Employee SIC	Self-employed SIC	Direct taxes	Disposable income
1	0.0	-0.16	-0.31	-0.08	0.0	0.0	0.01	-0.54
2	0.0	-0.20	-0.19	-0.08	0.0	0.0	0.01	-0.44
3	0.0	-0.19	-0.13	-0.07	0.0	0.0	-0.06	-0.46
4	0.0	-0.15	-0.14	-0.05	0.0	0.0	-0.01	-0.34
5	0.0	-0.13	-0.07	-0.07	0.0	0.0	-0.02	-0.29
6	0.0	-0.12	0.0	-0.07	0.0	0.0	-0.02	-0.21
7	0.0	-0.10	-0.06	-0.05	0.0	0.0	-0.04	-0.24
8	0.0	-0.12	0.05	-0.04	0.0	0.0	-0.05	-0.17
9	0.0	-0.15	-0.04	-0.03	0.0	0.0	-0.06	-0.28
10	0.0	-0.20	-0.01	-0.13	0.01	0.0	-0.05	-0.37
Total	0.0	-0.15	-0.05	-0.07	0.0	0.0	-0.04	-0.31

Notes: shown as a percentage change in mean equivalised household disposable income by income component and income decile group. Income decile groups are based on equivalised household disposable income in 2017, using the modified OECD equivalence scale. Each policy system has been applied to the same input data, deflating monetary parameters of 2018 policies by Eurostat's Harmonized Index of Consumer Prices (HICP).

Figure 1: Policy effects in 2017-2018, using the CPI-indexation, %

ANNEX 3: VALIDATION STATISTICS

Table 4.2-Number of employed and unemployed

	EUROMOD		External			Ratio			
	2015	2015	2016	2017	2018	2015	2016	2017	2018
Number of employed	344	358	367	N/A	N/A	0.96	0.94	N/A	N/A
Number of unemployed	90	63	55	N/A	N/A	1.44	1.64	N/A	N/A

Source: Labour Force Survey.

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

	EUROMOD	External	Ratio						
	2015	2015	2016	2017	2018	2015	2016	2017	2018
Employment income	355	307	N/A	N/A	N/A	1.16	N/A	N/A	N/A
Self-employment income	70	40	N/A	N/A	N/A	1.74	N/A	N/A	N/A
Rent income	38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Investment income	83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: Labour Force Survey.

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

	EUROMOD				External				Ratio			
	2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018
Average employment income	19,159	19,124	19,168	18,867	22,584	N/A	N/A	N/A	0.85	N/A	N/A	N/A
Employment income	6,808	6,795	6,811	6,704	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Self-employment income	834	832	834	819	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rent income	204	201	202	203	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Investment income	160	163	173	177	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: Labour Force Survey and Social Insurance Services.

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

	EUROMOD External					Ratio			
	2015	2015	2016	2017	2018	2015	2016	2017	2018
Benefits									
Education related scholarship	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Family Related allowance	17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Maternity benefit	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sickness benefits	29	40	53	N/A	N/A	0.72	0.54	N/A	N/A
Housing allowances	23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Military Grant	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Contributory unemployment benefit	36	38	36	N/A	N/A	0.96	1.02	N/A	N/A
Other unemployment related benefits	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Disability benefits	18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
No taxable old age pension	30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Social Pension old age	16	16	16	N/A	N/A	1.02	1.00	N/A	N/A
Taxable Old age pension	86	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Orphan Allowance	1	1	N/A	N/A	N/A	0.37	N/A	N/A	N/A
Other survivor benefit	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Widows pensions	27	30	N/A	N/A	N/A	0.88	N/A	N/A	N/A
Taxes and Social Insurance contributions									
Regular taxes on wealth	193	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: Ministry of Labour and Social Insurance, Ministry of Finance, Ministry of Defence.

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

	EUROMOD				External				Ratio			
	2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018
Benefits												
Education related scholarship	18	18	18	18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Family Related allowance	48	48	48	48	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Maternity benefit	33	33	33	32	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sickness benefits	32	32	33	32	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Housing allowances	51	50	50	51	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Military Grant	20	20	20	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Contributory unemployment benefit	98	98	98	96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other unemployment related benefits	156	156	156	153	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Disability benefits	151	151	152	152	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
No taxable old age pension	377	377	380	380	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Social Pension old age	65	65	65	65	68	69	N/A	N/A	0.96	0.94	N/A	N/A
Taxable Old age pension	1,319	1,319	1,329	1,329	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Orphan Allowance	1	1	1	1	4	N/A	N/A	N/A	0.22	N/A	N/A	N/A
Other survivor benefit	22	21	21	22	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Widows pensions	234	234	236	236	196	N/A	N/A	N/A	1.19	N/A	N/A	N/A
Taxes and Social Insurance contributions												
Regular taxes on wealth	67	66	67	67	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: Ministry of Labour and Social Insurance, Ministry of Finance, Ministry of Defence.

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

	EUROMOD				SILC	Ratio	External				Ratio			
	2015	2016	2017	2018	2015	2015	2015	2016	2017	2018	2015	2016	2017	2018
Benefits														
Student Grant	37	38	38	38	17	2.11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Birth Grant	10	10	10	10	8	1.29	8	6	N/A	N/A	1.26	1.51	N/A	N/A
Social Assistance	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Child benefit	86	86	86	87	61	1.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lone parent benefit	13	13	13	13	6	2.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GMI	57	58	57	59	22	2.61	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Taxes and Social Insurance contributions														
Employee SIC	351	351	351	351	0	N/A	389	N/A	N/A	N/A	0.90	N/A	N/A	N/A
Self Employed SIC	62	62	62	62	0	N/A	29	N/A	N/A	N/A	2.13	N/A	N/A	N/A
Employer SIC	355	355	355	355	334	1.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Annual Holidays Fund	86	78	78	78	0	N/A	77	N/A	N/A	N/A	1.11	N/A	N/A	N/A
Redundancy Fund	355	355	355	355	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Human resource Fund	355	355	355	355	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Social Insurance Fund	351	351	351	351	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Social Cohesion Fund	355	355	355	355	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Income Tax	147	146	147	144	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Special Contribution for defence	111	111	111	111	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Special contribution public employee	26	26	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Special contribution private employee	110	110	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Special contribution private employer	110	110	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Special contribution private self employed	70	70	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Special contribution from pensioners (private and public)	31	31	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Contribution to public pensions	38	38	38	38	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: Ministry of Labour and Social Insurance, Ministry of Finance, Tax Department.

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

	EUROMOD				SILC	Ratio	External				Ratio			
	2015	2016	2017	2018	2015	2015	2015	2016	2017	2018	2015	2016	2017	2018
Benefits														
Student Grant	72	73	73	73	44	1.64	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Birth Grant	6	6	6	6	4	1.34	4	N/A	N/A	N/A	1.33	N/A	N/A	N/A
Child benefit	98	98	98	100	90	1.09	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lone parent benefit	46	46	46	46	2	27.61	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GMI	273	275	273	278	111	2.47	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Taxes and Social Insurance contributions														
Employee SIC	477	476	477	470	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Self Employed SIC	93	93	93	92	0	N/A	50	N/A	N/A	N/A	1.85	N/A	N/A	N/A
Employer SIC	894	881	883	871	916	0.98	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Annual Holidays Fund	116	106	106	104	0	N/A	65	N/A	N/A	N/A	1.79	N/A	N/A	N/A
Redundancy Fund	77	77	77	76	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Human resource Fund	32	32	32	32	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Social Insurance Fund	539	537	538	531	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Social Cohesion Fund	129	129	129	127	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Income Tax	645	641	665	646	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Special Contribution for defence	40	41	43	45	0	N/A	329	293	N/A	N/A	0.12	0.14	N/A	N/A
Special contribution public employee	15	15	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Special contribution private employee	27	27	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Special contribution private employer	27	27	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Special contribution private self employed	12	12	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Special contribution from pensioners (private and public)	19	19	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Contribution to public pensions	31	31	31	31	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: Ministry of Labour and Social Insurance, Ministry of Finance, Tax Department.

Table 4.9-Distribution of equivalised disposable income

	EUROMOD				External				Ratio			
	2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018
D1	3.82	3.82	3.80	3.82	N/A	N/A	N/A	#N/A	N/A	N/A	N/A	#N/A
D2	5.06	5.06	4.95	5.00	N/A	N/A	N/A	#N/A	N/A	N/A	N/A	#N/A
D3	5.74	5.75	5.82	5.78	N/A	N/A	N/A	#N/A	N/A	N/A	N/A	#N/A
D4	6.71	6.72	6.67	6.68	N/A	N/A	N/A	#N/A	N/A	N/A	N/A	#N/A
D5	7.79	7.77	7.72	7.72	N/A	N/A	N/A	#N/A	N/A	N/A	N/A	#N/A
D6	8.88	8.91	8.91	8.90	N/A	N/A	N/A	#N/A	N/A	N/A	N/A	#N/A
D7	10.35	10.28	10.33	10.28	N/A	N/A	N/A	#N/A	N/A	N/A	N/A	#N/A
D8	11.99	12.05	11.97	11.99	N/A	N/A	N/A	#N/A	N/A	N/A	N/A	#N/A
D9	14.73	14.70	14.76	14.77	N/A	N/A	N/A	#N/A	N/A	N/A	N/A	#N/A
D10	24.93	24.93	25.07	25.06	N/A	N/A	N/A	#N/A	N/A	N/A	N/A	#N/A
Median	14,789	14,763	14,869	14,683	N/A	N/A	N/A	#N/A	N/A	N/A	N/A	#N/A
Mean	17,697	17,686	17,843	17,665	N/A	N/A	N/A	#N/A	N/A	N/A	N/A	#N/A
Gini	30.90	30.89	31.09	31.07	N/A	N/A	N/A	#N/A	N/A	N/A	N/A	#N/A
S80/S20	4.47	4.46	4.55	4.52	N/A	N/A	N/A	#N/A	N/A	N/A	N/A	#N/A

Source: Eurostat Online Database.

Table 4.10-Poverty rates by gender and age

	EUROMOD				External				Ratio			
	2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018
40% median HDI												
Total	1.61	1.58	1.57	1.48	3.70	N/A	N/A	#N/A	0.44	N/A	N/A	#N/A
Males	1.58	1.58	1.55	1.50	3.60	N/A	N/A	#N/A	0.44	N/A	N/A	#N/A
Females	1.64	1.59	1.59	1.47	3.70	N/A	N/A	#N/A	0.44	N/A	N/A	#N/A
50% median HDI												
Total	7.20	7.16	7.30	7.01	8.30	N/A	N/A	#N/A	0.87	N/A	N/A	#N/A
Males	6.92	6.88	7.00	6.81	8.20	N/A	N/A	#N/A	0.84	N/A	N/A	#N/A
Females	7.47	7.42	7.59	7.20	8.50	N/A	N/A	#N/A	0.88	N/A	N/A	#N/A
60% median HDI												
Total	15.14	15.12	15.34	14.99	16.10	N/A	N/A	#N/A	0.94	N/A	N/A	#N/A
Males	14.39	14.37	14.53	14.26	15.00	N/A	N/A	#N/A	0.96	N/A	N/A	#N/A
Females	15.85	15.83	16.11	15.69	17.20	N/A	N/A	#N/A	0.92	N/A	N/A	#N/A
70% median HDI												
Total	25.34	25.23	25.35	25.08	24.90	N/A	N/A	#N/A	1.02	N/A	N/A	#N/A
Males	24.46	24.38	24.47	24.27	23.90	N/A	N/A	#N/A	1.02	N/A	N/A	#N/A
Females	26.17	26.04	26.19	25.85	25.90	N/A	N/A	#N/A	1.01	N/A	N/A	#N/A
60% median HDI												
0-15 years	15.92	15.92	16.48	16.19	17.10	N/A	N/A	#N/A	0.93	N/A	N/A	#N/A
16-24 years	16.00	16.00	16.11	15.77	16.60	N/A	N/A	#N/A	0.96	N/A	N/A	#N/A
25-49 years	13.03	13.03	13.28	13.06	14.50	N/A	N/A	#N/A	0.90	N/A	N/A	#N/A
50-64 years	13.74	13.71	13.84	13.80	15.40	N/A	N/A	#N/A	0.89	N/A	N/A	#N/A
65+ years	20.72	20.67	20.61	19.42	19.50	N/A	N/A	#N/A	1.06	N/A	N/A	#N/A

Source: Eurostat Online Database.