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**GREECE: Means-Tested Income Support Program Pilot  
Reimbursable Advisory Services Agreement of 31 October 2013**

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***“Ex ante poverty and fiscal evaluation of a guaranteed minimum income  
programme in Greece”<sup>1</sup>***

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## OBJECTIVE

This study simulates the effects of a guaranteed minimum income in Greece, using the European tax-benefit model EUROMOD, in terms of:

- (i) fiscal costs
- (ii) participation (number of persons eligible for support)
- (iii) anti-poverty impact
  - a. poverty lines (at 60% and 40% of median household disposable income)
  - b. indicators: headcount rates and poverty gaps
  - c. reference population: by age, by gender, by area, and by tenure
- and
- (iv) work incentives (marginal effective tax rates).

The input dataset used is EU-SILC 2010, adjusted for changes in labour market conditions, market incomes and tax-benefit policies in the year 2013<sup>1</sup>.

## KEY ASSUMPTIONS

Our simulation of the effects of a *nationwide* guaranteed minimum income programme relies on three key assumptions:

Perfect targeting is assumed. In particular, the benefit is awarded to all eligible assessment units (i.e. full take up)<sup>2</sup>.

Assessed incomes are adjusted for income under-reporting. Specifically, it is assumed that wages and salaries are under-reported by 5%, self-employment earnings by 35%, and farming incomes by 80%<sup>3</sup>.

The programme is simulated on a purely unfunded basis, i.e. no increases in taxes and social contributions and/or reductions in other social benefits are assumed to take place in order in order to balance the books.

## CORE POLICY SCENARIO

The core policy scenario simulated here relies on a set of assumptions. These assumptions closely mirror the rules of the guaranteed minimum income pilot programme launched on 15 November 2014 in thirteen municipal areas of Greece, as stipulated in ministerial decree 39892/ΓΔ1.2 (dated 7 November 2014).

Specifically:

To be eligible, an assessment unit (usually, a household)<sup>4</sup> must pass a test of incomes as well as of assets.

The assets test provides that the taxable value of the main residence must be below €90,000 (for single-person assessment units), increased by €15,000 for each additional dependent adult, plus €10,000 for each dependent minor, subject to an overall ceiling per assessment unit of €200,000. The taxable value of the main residence is approximated using the average<sup>5</sup> cadastral value (per square meter) of urban vs. rural areas, multiplied by the size of the residence (per square meter). Other aspects of the taxable value of the main residence (e.g. the location and age of dwelling), and the remaining elements of the assets test (e.g. regarding second residence), are not simulated because the relevant information is unavailable in the underlying dataset<sup>6</sup>. The same applies to certain additional asset conditions, not simulated here because of lack of data<sup>7</sup>.

The incomes test provides that an assessment unit's disposable income must be below €2,400 per annum (for single-person assessment units), increased by €1,200 per annum for each additional adult, plus €600 per annum for each child. In the case of single-parent families, the eligibility threshold for the first child is increased by €1,200 (rather than by €600) per annum<sup>8</sup>.

The benefit rate is variable, equal to the difference between a recipient unit's assessed income and the eligibility income threshold (adjusted for the size and composition of each recipient unit), with a benefit withdrawal rate of 100% (exceptions apply).

Assessed incomes are net of taxes and social contributions. Disability benefits are fully disregarded. All other social benefits, including family allowances, are treated as income.

Earnings disregard: assessed incomes exclude 20% of earnings from dependent employment<sup>9</sup>, reducing the resulting benefit withdrawal rate for salaries and wages to 80%.

Children are defined as individuals aged  $\leq 18$  for the purposes of determining eligibility (incomes and assets test) and the benefit rate. Older persons are treated as adults, even when they are considered to be 'dependent children' for tax purposes.

## SENSITIVITY ANALYSIS

The study assesses the impact of a number of variations on the core policy scenario, by way of sensitivity analysis, as shown below.

- No earnings disregard: assessed incomes include all incomes, including earnings from dependent employment (salaries and wages), with a benefit withdrawal rate of 100% for all incomes.
- 15% earnings disregard: assessed incomes exclude 15% of earnings from dependent employment, reducing the resulting benefit withdrawal rate for salaries and wages to 85%.
- Flat (not variable) benefit: all eligible assessment units are assumed to be eligible for the maximum amount of benefit (i.e. as if their assessment incomes were equal to zero)<sup>10</sup>.
- No income under-reporting: gross incomes (calculated from the EU-SILC dataset) are assumed to be fully reported in tax forms (on which public authorities rely for cross-checks of applicants' incomes)<sup>11</sup>.

Note that all other eligibility conditions (including the disability benefit income disregard) hold across all policy scenarios.

## PARTICIPATION AND FISCAL COSTS

### Results

Table 1 provides full results in terms of participation and costs.

The lowest panel also shows the earnings composition of the recipient units, in terms of (i) the population share of wages and salaries (i.e. the number of individuals in recipient units with income from dependent employment as a proportion of the total number of individuals in all recipient units), and (ii) the income share of wages and salaries (i.e. the proportion of total disposable income of the recipient units concerned that is earned in dependent employment).

Specifically, the results in terms of participation and costs under each scenario were as follows.

### *Core policy scenario*

Participation and costs under the core policy scenario were estimated at 1.2 million persons (or 10.95% of population) and €980 million (or 0.54% of GDP) respectively. Earnings (defined as income from dependent employment, i.e. wages and salaries) were found to be present in 11.1% of all recipient units, accounting for 5.1% of their disposable income.

### *No earnings disregard*

Omitting the 20% earnings disregard would involve higher benefit withdrawal rates (100% vs. 80% in the core policy scenario) also with respect to income from salaries and wages. As discussed shortly, the effect of this would be to weaken labour incentives. On the other hand, omitting the earnings disregard would reduce participation and costs relative to the core policy scenario. However, the results show that the reduction would be very limited (from 10.95% to 10.63% of the population, and from 0.54% to 0.53% of GDP respectively).

On the other hand, failing to provide for some earnings disregard would affect the composition of the recipient population, effectively disqualifying a substantial number of salary or wage earners from claiming benefit. The number of recipients with income from dependent employment would fall: of those now qualifying for income support, only 8.5% would be salary or wage earners. Furthermore, the relative weight of income from dependent employment would also fall (by even more): of the total disposable income of recipient units now qualifying, only 2.9% would come from salaries or wages.

### *Lower earnings disregard*

Reducing the earnings disregard from 20% to 15% would cause participation and costs (as well as the relative weight of income from dependent employment) to fall relative to the core policy scenario, but by less compared to the situation under the no earnings disregard scenario.

### *No variable benefit*

Assuming that all eligible assessment units receive the maximum amount of benefit, as if their assessment incomes were equal to zero, would lead to significantly higher costs (€1,779 million or 0.98% of GDP) than in the core policy scenario, even though the number and composition of recipients would obviously remain the same (10.95% of population).

### *No adjustment for income under-reporting*

Finally, the effects on participation and costs of omitting the income under-reporting adjustment are shown in Table A.1 in the Appendix. The omission would amount to assuming that incomes reported by the relevant households when they apply for participation in the scheme are at a level similar to the gross incomes observed in the EU-SILC dataset, rather than at the (lower) level of incomes declared in tax forms (the main database public authorities can draw upon in order to cross-check an applicant's income). This implies that far fewer assessment units would pass the income test. As a result, participation and costs would be significantly lower than in the core policy scenario: 754 thousand persons (or 6.82% of population) and €681 million (or 0.38% of GDP) respectively<sup>12</sup>.

## ANTI-POVERTY IMPACT AND WORK INCENTIVES

### *Poverty indicators*

The anti-poverty effects of a guaranteed minimum income programme in Greece are assessed using two different poverty thresholds. The first, widely used in Europe, is set at 60% of median disposable incomes, net of taxes and contributions, and adjusted ('equivalised') for household size according to the 'modified OECD' equivalence scale<sup>13</sup>. The second is lower, set at 40% of median incomes, in an attempt to capture the effects of the programme on those in extreme poverty<sup>14</sup> (the population group targeted). In monetary terms, the (pre-GMI) standard poverty line was at €428.30 per month, while the extreme poverty line was at €285.50 per month (both figures refer to a single adult, in 2013).

Moreover, the study uses two different poverty indicators. The first indicator, the ('headcount') *poverty rate*, is defined as the proportion of population living in households with income below 60% (or 40%) of the median. At the baseline, the poverty rate was 22.7% and 11.5% (at 60% and 40% of median respectively) in 2013.

The second indicator is the median *poverty gap*, defined as the difference between the poverty line and the median income of those below it, expressed as a percentage of the former. Again, the poverty line is set at 60% and 40% of median income. At the baseline, the median poverty gap was 33.6% and 46.2% respectively (in 2013). This should be interpreted as implying that the median income of those below the extreme poverty threshold was €153.60 per month, i.e. 46.2% below the extreme poverty threshold of €285.50 per month<sup>15</sup>.

### *Actual vs. assessed incomes*

*A priori*, a guaranteed minimum income programme is not expected to have an appreciable effect on the standard poverty rate, and possibly not even on the extreme poverty rate (if the income guarantee is set below the extreme poverty threshold), although of course it will push recipients' incomes closer to the poverty threshold, and hence close the poverty gap (especially relative to the extreme poverty threshold).

Nevertheless, recipients' incomes may be assessed differently by the programme than they are analysed in poverty statistics, in which case the discrepancies may result in changes in poverty rates following the introduction of the programme.

In principle, there are at least three reasons why even a very low guaranteed minimum income programme may take recipients above the poverty line:

On the one hand, the equivalence scale applied in the programme may be more generous (i.e. assign greater weights to additional household members) than the one used for poverty statistics. Here this would be the case only with single-parent families<sup>16</sup> (equivalence weight for first child is 0.5 compared to 0.3 as in OECD modified equivalence scale).

On the other hand, the programme may explicitly discount some part of recipients' incomes. In three out of the four versions analysed here, an earnings disregard or 20% (or 15%) applies to income from dependent employment. Moreover, in line with actual programme rules, disability benefits are also disregarded in all policy scenarios.

Lastly and most importantly, income under-reporting (e.g. for the purposes of evading taxes or claiming social benefits one is ineligible for) may be present, in which case assessed income will be below actual income. Under our adjustment for income under-reporting, non-reported earnings from dependent employment, self-employment and farming are always positive. As noted previously, the adjustment is pretty large in the latter two cases.

### *Marginal effective tax rates*

Besides anti-poverty effects, the study also estimates work incentives. The key indicator when assessing labour supply effects of changes in social benefits is the marginal effective tax rate<sup>17</sup>. METRs are computed over changes in labour income, and provide a measure of deductions from income (in terms of extra taxes and social insurance contributions as well as reductions in social benefit entitlements<sup>18</sup>) when earnings increase, as a proportion of additional earnings<sup>19</sup>. It follows that the higher the marginal effective tax rate the lower the returns from work, and the weaker the work incentives. In this study, we estimate marginal effective tax rates for all earners, not just for programme participants. At the (pre-GMI) baseline, average marginal effective tax rates are estimated to be at 30.0%, while median ones at 26.6%.

### *Results*

Table 2 provides results in terms of changes in the poverty rate and the poverty gap relative to the (pre-GMI) baseline. Note that, in line with standard practice (in order to distinguish the effects of the programme on material standards relative to the current situation, from those of movements in the poverty threshold as a result of changes in median incomes), the poverty threshold is held fixed at its baseline level<sup>20</sup>. Full results of poverty rates by age and sex, by area, and by tenure are shown in Appendix Tables A.2-A.5.

Our estimates of marginal effective tax rates before and after the introduction of a guaranteed minimum income programme in Greece are presented in Table 3. Results show average and median marginal effective tax rates for individuals of working age (15-64) earning at least €1 of labour income per month<sup>21</sup>.

The proportion of earners facing marginal effective tax rates falling with certain brackets (i.e. below 20%, from 20% to 40%, from 40% to 60%, from 60% to 80%, and over 80%) is shown in Appendix Table A.6.

Specifically, the results in terms of anti-poverty impact and work incentives under each scenario were as follows.

### *Core policy scenario*

As shown in Table 2, the anti-poverty effects of the programme under the core policy scenario would be modest but not negligible. Specifically, the 'headcount' poverty rate would fall by 0.6 and 1.0 percentage points (in terms of the standard and the extreme poverty threshold respectively). The effect would be larger in terms of poverty gaps: the median income shortfall of those below the threshold would shrink by 2.3 and 16.2 percentage points (again, as regards the standard and the extreme poverty threshold respectively).

With respect to work incentives, both average and median marginal effective tax rates would be higher (35.9% vs. 30.0% and 31.6% vs. 26.6% respectively) relative to the baseline.

### *No earnings disregard*

Eliminating the 20% earnings disregard would have similar effects on poverty and work incentives as the core scenario. At the same time, the proportion of those facing marginal effective tax rates over 80% would increase somewhat relative to the core policy scenario (8.4% vs. 7.8%, as shown in Appendix Table A.6). Note that under no earnings disregard there would be far fewer salary or wage earners among recipients<sup>22</sup>.

### *Lower earnings disregard*

Reducing the earnings disregard from 20% to 15% would have the same anti-poverty effects as the core scenario. On the other hand, it would result in more working-age individuals with labour income in the top bracket of marginal effective tax rates (i.e. over 80%) relative to the core policy scenario (8.6%).

## CONCLUSIONS

This study shows that a guaranteed minimum income programme would raise the incomes of hundreds of thousands of very poor families in Greece, accounting for nearly 11% of population, at an estimated cost of just over 0.5% of GDP (in 2013). While this amount is far from negligible, especially at times of harsh fiscal constraints, it actually corresponds to less than 2.5% of all social spending<sup>23</sup>.

The programme can be expected to have a limited impact on headcount poverty rates (especially with respect to with respect to standard relative poverty), but a more substantial one in terms of poverty gaps (especially with respect to with respect to extreme poverty). Specifically, it would eliminate over a third of the pre-GMI extreme poverty gap.

Alternative specifications of programme rules, involving lower or no income disregards, would slightly reduce participation and costs without significantly altering the anti-poverty impact of the programme or its effects on work incentives.

The study confirms that income under-reporting is a serious risk, which might greatly affect programme participation and fiscal costs.

The GMI pilot (launched on 15 November 2014, and expected to continue for a period of six months) is a great opportunity to test various operational aspects that could and should be improved before the programme can be rolled out. For instance, our finding of the effect of income under-reporting stresses the importance of devising alternative means for assessing applicants' incomes rather than relying on tax reports alone.

Our estimates are bound to differ from actually observed outcomes, were the programme to be implemented nationwide in the future (for example in 2015). This would be due to a variety of factors: changes in incomes between 2013 and 2015; changes in tax and benefit rules between 2013 and 2015; different income under-reporting patterns than the ones hypothesised here; and different programme rules than the ones modelled here. In particular, with respect to the latter point, we really do not know to what extent the assets test might 'bite' (i.e. disqualify those applicants passing the incomes test and meeting all other eligibility conditions), as our data do not allow for assets conditions to be fully modelled.

In spite of these (largely inevitable) discrepancies, we believe our estimates can be useful to decision makers interested in evidence-based policy: they can help predict outcomes, anticipate the likely effect of policy changes, and identify possible improvements in programme design.

## TABLES

**Table 1**

Implications of a guaranteed minimum income programme in Greece: participation and costs

	<i>core scenario</i>	<i>earnings disregard</i>		<i>flat benefit</i>
		<i>0%</i>	<i>15%</i>	
<i>Participation</i>				
no. of recipients	1,211,181	1,175,875	1,203,337	1,211,181
% of population	10.95%	10.63%	10.88%	10.95%
<i>Cost</i>				
€ million	980.1	957.6	973.6	1,778.7
% of GDP	0.54%	0.53%	0.54%	0.98%
<i>Earnings</i>				
% of recipients	11.1%	8.5%	10.6%	11.1%
as % of income	5.1%	2.9%	4.4%	4.0%

Notes: The number of recipients is the total number of persons who are members of recipient units. The population in 2013 was 11,062,508 inhabitants. GDP in 2013 was €181.1 billion. Earnings are defined as income from dependent employment (i.e. wages and salaries). Percentage of recipients refers to the share of recipients with positive earnings from dependent employment in all recipients. Percentage of income refers to the share of earnings from dependent employment in total disposable income of the households concerned.

Source: Eurostat (population); ElStat (GDP); EUROMOD (version G2.0).

**Table 2**

## Implications of a guaranteed minimum income programme in Greece: anti-poverty impact

	baseline	<i>percentage point difference relative to baseline</i>		
		<i>core scenario</i>	<i>earnings disregard</i>	
			<i>0%</i>	<i>15%</i>
<i>Change in poverty rates</i>				
60% of median	22.7	-0.6	-0.6	-0.6
40% of median	11.5	-1.0	-1.0	-1.0
<i>Change in poverty gaps</i>				
60% of median	33.6	-2.3	-2.3	-2.3
40% of median	46.2	-16.2	-16.2	-16.2

Notes: The poverty rate is the proportion of population living in households with income below the poverty line (at 60% or 40% of the baseline median). The poverty gap is the difference between the poverty line and the median income of those below it, expressed as a percentage of the former. Income is net of taxes and contributions, and is adjusted for household size using the modified OECD equivalence scale.

Source: EUROMOD (version G2.0).

**Table 3**

## Implications of a guaranteed minimum income programme in Greece: work incentives

	baseline	<i>core scenario</i>	<i>earnings disregard</i>		<i>flat benefit</i>
			<i>0%</i>	<i>15%</i>	
<i>Marginal effective tax rates</i>					
average	30.0	35.9	35.9	35.9	33.1
median	26.6	31.6	31.6	31.6	26.7

Notes: Marginal effective tax rates show the percentage of a small (3%) increase in gross labour income that is lost to extra taxes and social insurance contributions, as well as to reductions in entitlements to social benefits. Estimates are for individuals of working age (15-64), not just GMI recipients, with more than €1 of monthly earnings. The distribution of marginal effective tax rates is truncated at the lowest percentile (if negative).

Source: EUROMOD (version G2.0).

## APPENDIX

**Table A.1**

Implications of assuming no income under-reporting: participation and costs

		<i>core scenario</i>	<i>no income under-reporting</i>
<i>Participation</i>			
	no. of recipients	1,211,181	754,269
	% of population	10.95%	6.82%
<i>Cost</i>			
	€ million	980.1	680.9
	% of GDP	0.54%	0.38%
<i>Earnings</i>			
	% of recipients	11.1%	12.1%
	as % of income	5.1%	9.6%

Notes: The adjustment for income under-reporting is based on the assumption that wages and salaries are under-reported by 5%, self-employment earnings by 35%, and farming incomes by 80%. The number of recipients is the total number of persons who are members of recipient units. The population in 2013 was 11,062,508 inhabitants. GDP in 2013 was €181.1 billion. Earnings are defined as income from dependent employment (i.e. wages and salaries). Percentage of recipients refers to the share of recipients with positive earnings from dependent employment in all recipients. Percentage of income refers to the share of earnings from dependent employment in total disposable income of the households concerned.

Source: Eurostat (population); ElStat (GDP); EUROMOD (version G2.0).

**Table A.2**

Implications of a guaranteed minimum income programme: poverty rates at 60% of median

		baseline	core scenario	<i>earnings disregard</i>	
				0%	15%
all		22.7	22.1	22.1	22.1
gender					
	men	23.0	22.4	22.4	22.4
	women	22.4	21.9	21.9	21.9
age					
	0-17	26.6	26.2	26.2	26.2
	18-29	26.7	25.6	25.6	25.6
	30-44	24.9	24.6	24.6	24.6
	45-64	23.0	22.1	22.1	22.1
	65+	12.7	12.7	12.7	12.7
area					
	Athens	23.5	23.5	23.5	23.5
	other cities	16.6	16.2	16.2	16.2
	rural/semi-rural areas	23.9	23.0	23.0	23.0
tenure					
	<i>rent or mortgage</i>	27.1	26.6	26.6	26.6
	<i>no housing costs</i>	20.2	19.6	19.6	19.6

Notes: The poverty rate is the proportion of population living in households with income below 60% of the baseline median. Income is net of taxes and contributions, and is adjusted for household size using the modified OECD equivalence scale.

Source: EUROMOD (version G2.0).

**Table A.3**

Implications of a guaranteed minimum income programme: poverty rates at 40% of median

		baseline	core scenario	<i>earnings disregard</i>	
				0%	15%
all		11.5	10.5	10.6	10.5
gender					
	<i>men</i>	11.8	10.6	10.7	10.6
	<i>women</i>	11.3	10.4	10.5	10.4
age					
	<i>0-17</i>	13.9	13.0	13.0	13.0
	<i>18-29</i>	13.7	12.1	12.3	12.1
	<i>30-44</i>	12.9	11.7	11.7	11.7
	<i>45-64</i>	13.5	12.2	12.3	12.3
	<i>65+</i>	3.2	3.1	3.1	3.1
area					
	Athens	12.2	11.8	11.8	11.8
	other cities	8.8	8.0	8.0	8.0
	rural/semi-rural areas	12.0	10.6	10.7	10.6
tenure					
	<i>rent or mortgage</i>	13.6	12.8	12.8	12.8
	<i>no housing costs</i>	10.4	9.2	9.3	9.3

Notes: The poverty rate is the proportion of population living in households with income below 40% of the baseline median. Income is net of taxes and contributions, and is adjusted for household size using the modified OECD equivalence scale.

Source: EUROMOD (version G2.0).

**Table A.4**

Implications of a guaranteed minimum income programme: poverty gaps at 60% of median

		baseline	core scenario	<i>earnings disregard</i>	
				0%	15%
all		33.6	31.3	31.3	31.3
gender					
	<i>men</i>	34.7	30.7	31.3	30.9
	<i>women</i>	33.5	31.3	31.3	31.3
age					
	<i>0-17</i>	35.5	32.0	32.0	32.0
	<i>18-29</i>	35.8	29.6	30.6	30.3
	<i>30-44</i>	34.7	30.6	30.6	30.6
	<i>45-64</i>	41.6	37.9	38.5	38.5
	<i>65+</i>	21.6	21.6	21.6	21.6
area					
	Athens	33.5	32.5	32.5	32.5
	other cities	37.5	31.3	31.3	31.3
	rural/semi-rural areas	33.4	29.8	30.1	30.1
tenure					
	<i>rent or mortgage</i>	33.5	31.3	31.3	31.3
	<i>no housing costs</i>	35.9	30.3	30.7	30.6

Notes: The median poverty gap is equal to the difference between the poverty line and the median income of those below it, expressed as a percentage of the former. The poverty line is set at 60% of median income at the baseline. Income is net of taxes and contributions, and is adjusted for household size using the modified OECD equivalence scale

Source: EUROMOD (version G2.0).

**Table A.5**

Implications of a guaranteed minimum income programme: poverty gaps at 40% of median

		baseline	core scenario	<i>earnings disregard</i>	
				0%	15%
all		46.2	30.0	30.0	30.0
gender					
	<i>men</i>	46.2	30.0	30.0	30.0
	<i>women</i>	46.2	30.0	30.0	30.0
age					
	<i>0-17</i>	44.7	30.0	31.5	30.0
	<i>18-29</i>	59.7	30.0	30.0	30.0
	<i>30-44</i>	46.2	30.0	30.0	30.0
	<i>45-64</i>	56.1	30.0	30.0	30.0
	<i>65+</i>	25.8	22.9	22.9	22.9
area					
	Athens	75.7	30.0	30.0	30.0
	other cities	39.5	21.6	29.2	23.0
	rural/semi-rural areas	43.4	30.0	30.0	30.0
tenure					
	<i>rent or mortgage</i>	54.5	30.0	30.0	30.0
	<i>no housing costs</i>	45.3	30.0	30.0	30.0

Notes: The median poverty gap is equal to the difference between the poverty line and the median income of those below it, expressed as a percentage of the former. The poverty line is set at 40% of median income at the baseline. Income is net of taxes and contributions, and is adjusted for household size using the modified OECD equivalence scale.

Source: EUROMOD (version G2.0).

**Table A.6**

Implications of a guaranteed minimum income programme: marginal effective tax rates

	baseline	<i>core scenario</i>	<i>earnings disregard</i>		<i>flat benefit</i>	
			<i>0%</i>	<i>15%</i>		
Range						
	<i>below 20%</i>	28.1	25.6	25.9	25.7	28.0
	<i>20% - 40%</i>	61.1	55.9	55.9	55.8	61.0
	<i>40% - 60%</i>	8.2	8.2	8.2	8.2	8.2
	<i>60% - 80%</i>	1.6	2.5	1.6	1.6	1.6
	<i>over 80%</i>	1.1	7.8	8.4	8.6	1.2

Notes: Marginal effective tax rates show the percentage of a small (3%) increase in gross labour income that is lost to extra taxes and social insurance contributions, as well as to reductions in entitlements to social benefits. Estimates are for individuals of working age (15-64), not just GMI recipients, with more than €1 of monthly earnings. The distribution of marginal effective tax rates is truncated at the lowest percentile (if negative). The figures are proportion of working population facing marginal effective tax rates in the relevant range.

Source: EUROMOD (version G2.0).

## REFERENCES

- Bradshaw J. & Mayhew E. (2010) Understanding extreme poverty in the European Union. *European Journal of Homelessness* (4) 171-186.
- Brewer M., Saez E. & Shephard A. (2010) Means testing and tax rates on earnings. In: Adam S., Besley T., Blundell R., Bond S., Chote R., Gammie M., Johnson P., Myles G. & Poterba J. (eds) *Dimensions of tax design: the Mirrlees Review*. Oxford University Press.
- Figari F., Matsaganis M. & Sutherland H. (2013) Are European social safety nets tight enough? Coverage and adequacy of minimum income schemes in 14 EU countries. *International Journal of Social Welfare* 22 (1) 3-14.
- Jara H.X. & Tumino A. (2013) Tax-benefit systems, income distribution and work incentives in the European Union. *International Journal of Microsimulation* 1(6) 27-62.
- Leventi C. & Matsaganis M. (2013) Distributional implications of the crisis in Greece in 2009-2012. *EUROMOD Working Paper EM 14/13*. Microsimulation Unit, University of Essex.
- Leventi C., Matsaganis M. & Flevotomou M. (2013) Distributional implications of tax evasion and the crisis in Greece. *EUROMOD Working Paper EM17/13*. Microsimulation Unit, University of Essex.
- Matsaganis M., Levy H. & Flevotomou M. (2010) Non take up of social benefits in Greece and Spain. *Social Policy and Administration* 44 (7) 827-844.
- Matsaganis M., Ozdemir E. & Ward T. (2013) The coverage rate of social benefits. *Research Note 9/2013*. Social Situation Observatory, European Commission.
- Meghir C. & Phillips D. (2010) Labour supply and taxes. In: Adam S., Besley T., Blundell R., Bond S., Chote R., Gammie M., Johnson P., Myles G. & Poterba J. (eds) *Dimensions of tax design: the Mirrlees Review*. Oxford University Press.

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## NOTES

- <sup>1</sup> EU-SILC 2010, uprated to the year 2013, is the latest dataset available in EUROMOD at the time of writing. The exercise may be repeated in mid-2015 using EU-SILC 2012 and/or HBS 2012, with market incomes and tax-benefit policies uprated to the year 2014.
- <sup>2</sup> For instance, the applicant unit may not own a swimming pool, a yacht, or an aircraft; also, the imputed value of motor vehicles owned (including motorcycles) cannot exceed €6,000.
- <sup>3</sup> Estimates of income under-reporting by income source are based on Leventi et al. (2013). For the effects on participation and fiscal costs of omitting the income under-reporting adjustment, see Table A.1 in the Appendix.
- <sup>4</sup> In actual practice, the assessment unit can be made up of single individuals, married or cohabiting couples, and dependents (as defined for income tax purposes). Individuals declaring themselves to be 'guests' (i.e. grown up children of the household head) are subject to additional eligibility conditions and a lower income threshold. However, 'guests' cannot be identified in the EU-SILC dataset. In view of that, our simulations assume that all members of a given household apply as a single assessment unit.
- <sup>5</sup> The average cadastral value (per m<sup>2</sup>), estimated using a large sample of tax returns, was found to be €1,338 in urban areas and €745 in rural areas. For more info, see p. 9 ('vi. Emergency property tax') and p. 42 ('Table A.1: Properties' cadastral values by degree of urbanisation, 2008') in Leventi & Matsaganis (2013).
- <sup>6</sup> Information on incomes from liquid assets such as deposits, bonds, shares and so on is available in the underlying dataset and, therefore, drawn upon to simulate the relevant part of asset testing. Nevertheless, such incomes are severely under-reported, as a result of which our estimates of costs and participation will be conservative.
- <sup>7</sup> Evidence from recent work suggests that in fact non take up rates with respect to means-tested benefits tend to be quite high– in Greece as elsewhere in Europe (Matsaganis et al. 2010; Matsaganis et al. 2013),
- <sup>8</sup> The income threshold for assessment units identified as 'guests' (for instance, students cohabiting with their parents) is reduced by €1,200 per annum.
- <sup>9</sup> Earnings from contractual services (in certain cases treated for tax purposes as earnings from dependent employment) cannot be identified because the relevant information is unavailable. It is assumed that freelance workers qualifying for favourable tax treatment consider themselves as dependent workers, and hence in the underlying dataset report their earnings as wages or salaries).
- <sup>10</sup> The 'flat benefit' scenario is included here not as a policy option but as a sensitivity check, providing an upper bound estimate of programme costs in the extreme case of all participants reporting zero incomes.
- <sup>11</sup> The effects of the 'no income under-reporting' policy scenario are only shown here for participation and costs. Results in terms of anti-poverty impact and work incentives are available on request.
- <sup>12</sup> Interestingly, assuming that assessed incomes are as reported in the EU-SILC income survey affects not only the size of the recipient population but also its composition. As explained in the text, the income under-reporting adjustment is much more substantial in the case of incomes from farming and self employment than it is in the case of wages and salaries. It therefore follows that reversing the adjustment would cause the former to increase more than the latter. As a result, when the income under-reporting adjustment is dropped, there would be a higher proportion of wage and salary earners among the fewer assessment units passing the income test than is the case in the core scenario (specifically, 12.1% vs. 11.1% of recipient units). In addition, the relative weight of wages and salaries in recipients' total disposable income would be significantly higher than in the core scenario (9.6% vs. 5.1%).

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<sup>13</sup> Specifically, the modified OECD equivalence scale gives a weight to all members of the household: 1.0 to the first adult, 0.5 to the second and each subsequent person aged 14 and over, 0.3 to each child aged below 14. The weights that correspond to the size and the composition of each household are added up in order to arrive at the number of 'equivalent adults'. The total household income, net of taxes and contributions, is then divided by the number of 'equivalent adults'. The resulting figure is the 'equivalised disposable income', and is attributed equally to each member of the household.

<sup>14</sup> In this we follow Figari et al. (2013), who assessed the anti-poverty performance of minimum income schemes in the EU using a standard poverty line of 60% of median and an extreme poverty line of 40% of median. Note that both indicators are set in relative terms (i.e. as a proportion of median income). For a discussion of *absolute* poverty and its pitfalls as a concept, see Bradshaw & Mayhew (2010).

<sup>15</sup> All figures apply to a single person household, and are 'equivalised' for all other household types (see fn13 above).

<sup>16</sup> Note that single mothers in Greece (other than widows) tend to be more highly educated and hence more financially independent than their counterparts elsewhere in Europe. As a result of that, they are both less common and less poor than e.g. in the UK.

<sup>17</sup> Marginal *effective* tax rates differ from conventional marginal tax rates in that the former also take into account reductions in entitlements to means-tested benefits as recipient incomes rise. For a formal analysis, see Brewer et al. (2010) and Meghir & Phillips (2010).

<sup>18</sup> The single child benefit (introduced in 2013), the large family benefit (for families with three or more children), the social dividend, and the pensioners' social solidarity supplement *EKAS*, are all examples of income-tested benefits in Greece. By definition, these benefits are liable to be reduced or withdrawn altogether as a beneficiary's income rises above a given level.

<sup>19</sup> Specifically, to calculate marginal effective tax rates in EUROMOD labour income (including self-employment earnings) is increased by 3% in turn for each individual in a given household, following which the change in disposable income is assessed at household level. Marginal effective tax rates are equal to  $1 - \Delta Y_H / \Delta E_i$  where  $\Delta Y_H$  is the change in household disposable income following a 3% rise in individual earnings ( $\Delta E_i$ ).

<sup>20</sup> Results using floating poverty lines are also available on request.

<sup>21</sup> Following Jara & Tumino (2013), we exclude from our calculations those cases with a marginal effective tax rate of below zero.

<sup>22</sup> To be precise, over 26% of low earners eligible for the programme under the core policy scenario would be excluded if the earnings disregard were eliminated.

<sup>23</sup> The OECD Social Expenditure Dataset puts total social expenditure in Greece at 22.0% of GDP in 2013.