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Recent Tax Reforms in Italy: the Impact on Households and Workers

By Caterina Astarita, Virginia Maestri and Marie-Luise Schmitz

Summary

The tax burden on labour is very high in Italy. As a result, Italy has been recommended to shift some of the burden from labour to consumption, recurrent property and environmental taxes. Recent tax reforms, however, have had varying effects. While labour taxes were reduced through a refundable in-work tax credit in 2014, this year, main residences were granted a full exemption for the payment of the general service tax. To estimate the first-round budgetary impact of these reforms on labour market incentives and distributional effects, we ran a simulation exercise on EUROMOD, the European Union's tax and benefits micro-simulation model. A further simulation was also performed to examine the impact of a hypothetical reform reducing employer social security contributions financed by removing the exemption of the services tax for primary residences. Overall, the simulations indicate that the '80 euro bonus' is expected to have a positive impact on the distribution of incomes and on the tax wedge, while the benefits of abolishing the property tax on first residences is more debatable, especially when assessed against alternative uses of the same resources.

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Introduction

In Italy the tax burden on labour is very high compared with the EU average. Italy's implicit tax rate on labour, a summary measure that approximates an average effective tax burden on labour income in the economy, stood at 44% in 2014, the highest in the EU¹. High taxes on labour contribute to loss of competitiveness and may have detrimental effects on economic growth and employment by negatively impacting labour supply and demand. Therefore, it has been recognised as recommendable to shift the tax burden away from labour to more growth-friendly forms of taxation, widely indicated by the literature (Johansson et al., 2008; Arnold et al., 2008 and 2011; Roeger and In't Veld, 2010; European Commission, 2013) as consumption, recurrent property and environmental taxes.

In 2014 and 2015, Italy implemented some reforms concerning, inter alia, personal income taxes and housing taxes. More specifically, in May 2014², an in-work tax credit of EUR 80 per month for low income earners has been introduced. This measure has been made permanent as of 2015³, resulting in a tax credit of EUR 960 per year. The measure was aimed at reducing the labour tax wedge⁴, particularly at the lower end of the income distribution⁵.

As of 2014, and as part of the revision of recurrent taxes on immovable property, the government introduced⁶ a general service tax (TASI) on indivisible services (e.g. street lighting, pavements, maintenance, etc.) aimed at meeting expenses for the services provided by local authorities to the public. Successively, with the goal of reducing the tax burden on households, a reform of local taxation was agreed in 2015, including the repeal of the TASI on first residences as of 2016⁷ (together with the property tax on agricultural real estates and the immovable machineries for productive use).

This Brief uses the tax and benefit microsimulation model of the European Union, EUROMOD to analyse the impact of the abovementioned reforms on the budget, labour taxation, and income distribution. In addition, the model is used to examine hypothetical reductions in the employers' social security contributions (one generalised and the other one targeted), as an alternative use of the budgetary resources needed to finance the exemption of first residences from the service tax. The remaining of this Brief is organised as follows: it starts with a description of the reforms followed by the results of the simulation for each of them.

Some concluding remarks are offered along with an Annex providing details on the methodology and the data used.

Description of recent labour and housing tax reforms in Italy

On the labour supply side, a refundable in-work tax credit for employees has been introduced. The bonus was introduced for reducing the tax burden on labour, with the aim of boosting consumption. For this purpose, an in-work tax credit (known as "80 euro bonus") has been granted to employees with taxable income between EUR 8173⁸ and EUR 26000 per year. The bonus was introduced in May 2014 and it was made permanent as of January 2015. It is transferred every month, for a maximum of EUR 960 per year. The maximum amount (i.e. 80 euro per month) is granted to employees with a taxable income below EUR 24000 per year and linearly decreases up to a maximum taxable income of EUR 26000 (see Table 1). This phasing out guarantees that there are no disincentives to work more hours around the EUR 26000 threshold for being eligible to the tax credit. The annual amount depends on the number of days worked over the year (Ceriani et al., 2015).

Table 1 - Design of the 80 euro tax bonus in 2014 and 2015

Taxable income in euro	2014	2015
< 8.173	0	0
8.173 – 24.000	640	960
	640,00 *	960,00 *
24.000 – 26.000	$[(26.000 - \text{taxable income})/2,000]$	$[(26.000 - \text{taxable income})/2,000]$
	* (working days/365)	* (working days/365)
> 26.000	0	0

In 2014, the government revised the recurrent property tax and introduced the Municipal Single Tax (IUC), composed of the Municipal Service Tax (TASI), the Municipal Tax (IMU) and the Waste Tax (TARI). TASI is a tax on indivisible services provided by local authorities (e.g., street lighting, pavements, maintenance etc.). The revenues from TASI are accounted as recurrent taxes on immovable property (see for instance, European Commission, 2011). Every individual in possession of real estate i.e., main and other residences as well as building sites, with the exception of cultivated areas, is subject to TASI. The taxable base of TASI corresponds to the taxable base of IMU, which in 2015 equals the revalued cadastral return of the main residences. Currently, cadastral values are below the market value of the property. The revision of the cadastral system has been postponed to 2016. Tax

rates differ depending on the type of building. The base rate of TASI of 0.1% can be modified by municipalities within certain limits. Municipalities can also introduce tax credits for different groups of taxpayers and categories of buildings. The tax credit may depend on the income of the household, on the cadastral income of the property and on the household composition. A full exemption from the payment of TASI was granted to main residences as of 2016.

Simulated impact of the policy reforms

Simulations have been conducted by the Joint Research Centre of the European Commission to analyse the distributional impact of the reforms using EUROMOD, the tax-benefit microsimulation model for the European Union. EUROMOD simulates benefit entitlements and tax liabilities of individual and households according to the tax-benefit rules in place in each Member State. The simulations are based on representative survey data from the European Statistics on Income and Living Conditions (EU-SILC) and cover the main elements of direct taxation and social contributions as well as non-contributory benefits. The model takes into account the fiscal interactions which are built into the tax-benefit system and includes an adjustment for tax evasion by employment status. EUROMOD is a static model and is currently not set up to evaluate second round and/or behavioural effects.

The simulations conducted with the EUROMOD micro-simulation model and presented in this section include the:

- First-round budgetary, labour market incentives and distributional effects of the introduction of the in-work tax credit;
- distributional effects of the exemption of main residences from the payment of the general service tax TASI;
- labour market incentives effect of a hypothetical reform using the administrative tax revenues from TASI on the main residence for 1) a generalised reduction of employers' social security contributions, 2) a reduction of employers' social security contributions targeted to low income workers.

The labour market incentives effects are summarised in the tax wedge indicator. The tax wedge on labour corresponds to the difference between total labour costs and take-home pay by the employee over total

labour costs. It is defined as the sum of the share of simulated personal income taxes (national and regional, net of the 80 euro bonus) which can be attributed to labour, employer and employee social security contributions over employment income plus employer social security contributions. Although it is not possible to quantify in this framework the impact of a given reduction in the tax wedge on labour demand or supply, the change in the tax wedge provides a useful indication of the direction of the possible impact.

The distributional effects are summarised into inequality and poverty indicators of equivalised household disposable income⁹. Inequality is measured with the Gini coefficient, where a value of 0 corresponds to perfect equality and 1 to perfect inequality. The poverty rate is calculated according to official Eurostat statistics. It is defined as the share of individuals living in households where equivalised household income is below 60% of the median equivalised household disposable income of the Member State. We also add indicators of poverty calculated with a fixed poverty line. The poverty line can be fixed at a moment in time (e.g. 2008) or for a relevant income concept. For instance, the poverty line can be fixed at 60% of the median equivalised household disposable income of the Member State before the introduction of the 80 euro bonus, which is used to calculate the share of households below the poverty threshold.

Reform A: introduction of an in-work tax credit

The latest official estimate of the overall first-round budgetary impact of the 80 euro tax credit for 2015 by the State Accounting Office of the Ministry of Finance (Ragioneria Generale dello Stato) is EUR 9.2 billion (0.56 per cent of GDP)¹⁰ for 2015¹¹.

Table 2 - Beneficiaries and amount of refundable tax credit, by decile

Decile of equivalised household disposable income	Equivalised household disposable income with TASI (baseline)	Equivalised household disposable income without TASI (reform)	Change in disposable income (in %)	Change in disposable income augmented by cadastral income (in %)
1	398	402	1.01%	0.97%
2	759	764	0.66%	0.64%
3	941	946	0.53%	0.52%
4	1112	1117	0.45%	0.44%
5	1282	1289	0.55%	0.46%
6	1456	1463	0.48%	0.47%
7	1645	1652	0.43%	0.42%
8	1879	1886	0.37%	0.42%
9	2239	2248	0.40%	0.40%
10	3977	3988	0.28%	0.27%
Total	1569	1575	0.38%	0.38%

Source: Joint Research Centre, based on the EUROMOD model

Note: deciles are defined based on equivalised household disposable income before the introduction of the bonus.

This measure is estimated to reduce the tax wedge on labour, on average, by 2.3 percentage points, corresponding, on average, to EUR 39 (per month)

for all workers, benefiting or not from the tax credit (see Table 3). Women, young and low-skilled workers benefit most from the introduction of the in-work tax credit, as they have, on average, lower incomes.

Table 3 - Labour tax burden with and without the tax credit, by gender and age

	Tax wedge on labour without bonus (in %)	Tax wedge on labour with bonus (in %)	Change in tax wedge on labour (in pp)	Tax wedge on labour without bonus (in euro)	Tax wedge on labour with bonus (in euro)	Change in tax wedge on labour (in euro)
<i>all</i>	45.85%	43.54%	2.31	1367	1328	-39
<i>by gender</i>						
female	45.12%	42.37%	2.75	1102	1057	-45
male	46.43%	44.46%	1.96	1486	1450	-36
<i>by age</i>						
18-24	42.67%	39.25%	3.42	641.24	589.1	-52
25-29	44.95%	41.98%	2.96	896.01	843.94	-52
30-39	45.44%	42.98%	2.46	1218.105	1174.26	-44
40-49	45.88%	43.63%	2.25	1385.23	1346.96	-38
50-64	46.98%	45.21%	1.77	1630.43	1598.63	-32
<i>by skill</i>						
low	43.61%	40.76%	2.86	1013.34	965.27	-48
medium	45.82%	43.45%	2.37	1294.16	1253.13	-41
high	48.88%	47.41%	1.46	1765.24	1737.63	-28

Source: Joint Research Centre, based on the EUROMOD model

Note: the tax wedge on labour is calculated on average for all individuals (in each group) receiving employment income, benefiting or not from the tax credit.

While the tax credit increased individual net employment income¹² by 2.7%¹³, the increase in (equivalised) household disposable income was more modest (+1.1% on average, see Table 4). The impact of the tax credit on household income depends on the distribution of the beneficiaries across the household income distribution. Indeed, Table 4 shows that gains are concentrated in the 2nd and 3rd income deciles (by 1.8-1.9%) and the least in the top deciles, while income of the poorest decile increases only by 1.3% (approximately as much as in the 8th income decile). This is because the poorest income decile is mainly represented by pensioners (and unemployed) who could not (fully) benefit from the tax credit, while individuals belonging to richer households are more likely to receive an employment income above the threshold therefore not being eligible for the tax credit.

Table 4 - Equivalised household disposable income: mean values, by decile

Decile	Equivalised household disposable income without tax	Equivalised household disposable income with tax credit	Change (in %)
1	383	388	1.31%
2	734	747	1.77%
3	912	929	1.86%
4	1081	1099	1.67%
5	1247	1266	1.52%
6	1414	1438	1.70%
7	1601	1627	1.62%
8	1833	1856	1.25%
9	2189	2209	0.91%
10	3895	3906	0.28%
Total	1529	1546	1.11%

Source: Joint Research Centre, based on the EUROMOD model

Note: deciles are defined based on equivalised household disposable income before the introduction of the bonus, monthly values.

The introduction of the tax credit reduces inequality and the poverty rate (calculated with the poverty line fixed before the introduction of the bonus)¹⁴, especially for households with at least one child (Table 5). The reason for this may be twofold: on the

one hand, having more children reduces (equivalised) disposable income, on the other hand, people with children are more likely to be working age and benefit from the bonus. The poverty rate among elderly remains unchanged if the poverty line is fixed before the introduction of the bonus (Table 5), as pensioners do not benefit from it. However, if the poverty line is allowed to change due to the introduction of the bonus, the poverty rate among elderly increases¹⁵ (not reported). In other words, pensioners are worse-off in relative terms (though, obviously, not in absolute ones) due to the introduction of the bonus¹⁶ compared to the group of workers who benefited from it. The simulations also indicate a reduction in the Gini coefficient by 0.25 percentage points.

Table 5 - Social impact of tax credit, poverty and inequality by demographic characteristics

	Without tax credit	With tax credit	Change (in pp)
Poverty rate (threshold fixed before the introduction of the bonus)			
all	18.30%	17.70%	-0.6
male	17.10%	16.50%	-0.6
female	19.40%	18.80%	-0.6
children	24.80%	23.70%	-1.1
working age	17.80%	17.10%	-0.7
elderly	14.20%	14.20%	0
Gini coefficient	32.37	32.12	-0.25

Source: Joint Research Centre, based on the EUROMOD model

Note: children (18 or younger); working age (between 19 and 64, both included); elderly (65 or older).

Reform B: abolition of the municipal service tax (TASI)

According to administrative data, TASI revenues on the main residence amounted to EUR 3.5 billion in 2014¹⁷. Table 6 shows the share of TASI taxpayers for each income decile. This corresponds to the share of people affected by the reform. The share of people affected by the exemption of the main residence from the payment of TASI is quite uniform across middle income deciles (43-47%), the lowest among the poorest (33%), and significantly higher (55%) in the top income decile (around 3.3 million people versus 2 million in the bottom income decile). Indeed, the distribution of homeownership in Italy is only weakly correlated with income, although homeownership is more common among richer households and in absolute terms the wealthiest enjoy a bigger share of the budgetary resources needed for this tax relief

measure. The top five deciles would in fact benefit from around two thirds of the total budgetary resources needed for this tax relief.

Table 6 - TASI taxpayers by income decile

Decile of equivalised household disposable income	TASI taxpayers (in % of population)	TASI taxpayers (absolute number of taxpayers)
1	33%	2 008 079
2	43%	2 601 132
3	43%	2 583 068
4	44%	2 642 829
5	46%	2 799 495
6	46%	2 802 404
7	47%	2 836 441
8	47%	2 834 502
9	50%	3 037 865
10	55%	3 294 803

Source: Joint Research Centre, based on the EUROMOD model

Note: deciles are defined based on equivalised household disposable income.

The abolition of TASI, as all tax reductions, increases disposable income (Table 7). The increase is small (0.38% on average) and smaller than the¹⁸ increase resulting from the 80 euro bonus. However, the increase is relatively more important for the bottom income decile (+1%) compared to higher deciles, as TASI payments represent a larger share of the resources of lower income households (often pensioners).

Moreover, homeowners enjoy an in-kind economic advantage i.e. housing services for which they would otherwise have to pay in the rental market, which is not taken into account in the standard definition of disposable income. In order to account for this advantage, the income deciles and the change in disposable income were calculated by adding cadastral income (the in-kind economic advantage on which TASI is mostly based) to disposable income. The last column of Table 7 shows that the bottom income deciles still have the largest increase in disposable income although it is smaller than in the scenario in which cadastral income is not taken into account.

Table 7 - Equivalised household disposable income before and after the abolition of TASI: mean values, by decile

Decile of equivalised household disposable income	Equivalised household disposable income with TASI (baseline)	Equivalised household disposable income without TASI (reform)	Change in disposable income (in %)	Change in disposable income augmented by cadastral income (in %)
1	398	402	1.01%	0.97%
2	759	764	0.66%	0.64%
3	941	946	0.53%	0.52%
4	1112	1117	0.45%	0.44%
5	1282	1289	0.55%	0.46%
6	1456	1463	0.48%	0.47%
7	1645	1652	0.43%	0.42%
8	1879	1886	0.37%	0.42%
9	2239	2248	0.40%	0.40%
10	3977	3988	0.28%	0.27%
Total	1569	1575	0.38%	0.38%

Source: Joint Research Centre, based on the EUROMOD model. Note: deciles are defined based on equivalised household disposable income (including TASI and the bonus), monthly values.

The results suggest that the abolition of TASI on main residences slightly reduces the poverty rate and inequality as measured by the Gini coefficient (Table 8). Regarding the reduction in the poverty rate, the elderly would benefit the most from the TASI abolition, while working age people would benefit the least (Table 8). This result depends on several factors: (i) the widespread home ownership in Italy, even among low income households; (ii) the current design of TASI (tax credits are mostly lump-sum or depending on the number of children and do not necessarily take into account the economic situation of the household) and its heterogeneity across municipalities, which may not always guarantee progressivity; (iii) the fact that cadastral values are outdated.

Table 8 - Poverty rate and Gini coefficient before and after the abolition of TASI

	With TASI (baseline)	Without TASI (reform)
Poverty rate		
all	18.20%	0.18
male	17.00%	0.168
female	19.30%	0.191
child	23.60%	0.236
working age	17.40%	0.173
elderly	15.70%	0.152
Gini coefficient	32.14%	0.3207

Source: Joint Research Centre, based on the EUROMOD model.

Note: the poverty line is fixed in each scenario (with and without TASI).

Reform C: TASI revenues used to lower employer social security contributions

This scenario is hypothetical and foresees: i) the re-introduction of TASI, ii) the use of these revenues to

lower employers' social security contributions in two possible ways: (C1) a general reduction of employers' social security contributions, (C2) a reduction of employers' social security contributions targeted to low income workers. This hypothetical reform reflects the message of the 2014 CSR asking for a shift from labour taxation to more growth friendly kind of taxes, including recurrent property taxes and goes in the direction of increasing the labour demand through a decrease of the tax wedge. In the Italian tax code employers' social security contributions are the sum of flat rates for different insurance schemes (pension, unemployment, etc.), see Table 9. The most important item is represented by the pension contribution rate. Different rates are levied depending on whether a person is categorised as blue collar, white collar, a temporary worker, a manual worker, a retailer, a farmer or a professional. The reduction of social security contributions may have an impact on benefits' entitlement and amount (if other tax revenues are not earmarked), especially for pensions which are now fully contributory.

Table 9 - Rates of employer social security contributions, 2015

Pension contribution rate	23.81%
Unemployment contribution rate	1.91%
Severance payment rate	0.20%
Family benefits contribution rate	0.68%
Salary protection fund contribution rate	2.80%
Sickness contribution rate (blue collar workers)	2.68%
Sickness contribution rate (white collar workers)	0.46%
Social insurance contribution rate (temporary workers)	20.48%

In recent years, employers' social security contributions were made deductible from the Italian regional tax on productive activities until, as of

2015, the total labour cost (wages plus social security contributions) was made deductible for employees with permanent contract.

The distributional impact of this reform is the opposite of the abolition of TASI (as it is re-introduced here) presented previously, as employers' social security contributions do not affect households' incomes. Therefore, relative poverty and inequality would very marginally increase (see Table 8). It should also be noted that changes in employers' social security contributions affect the taxable base for IRAP (regional tax on productive activities) for temporary employed. These secondary effects are beyond the scope of EUROMOD simulations, as the model is based on the direct taxation of households.

Under scenario (C1) TASI revenues would allow for a generalised reduction of employers' social security contributions by about 0.77 pp (excluding temporary workers who are subject to a separate regime). This reduction could be proportionally split, for instance, among the unemployment severance payment, family benefits and salary protection fund contribution rates (see Table 10 for the comparison of the baseline and the reform scenario). The reduction of pension contribution rates in a defined-contribution pension system may have social consequences, as a reduction in social security contributions would translate into lower pensions, while the link between paid contributions and benefits (e.g. family) may be weaker. Another option would be to earmark general tax revenues for the payment of these contributions.

Table 10 - Employers' social security contributions rates in the baseline and reform scenario

Social security contribution rates	Current	Reform
Pension contribution rate	23.81%	23.81%
Unemployment contribution rate	1.91%	1.72%
Severance payment rate	0.20%	0.01%
Family benefits contribution rate	0.68%	0.49%
Salary protection fund contribution rate	2.80%	2.61%
Sickness contribution rate (blue collar workers)	2.68%	2.68%
Sickness contribution rate (white collar workers)	0.46%	0.46%
Social insurance contribution rate (temporary workers)	20.48%	20.48%

Table 11 shows the share of people affected by the reduction in employer social security contributions. Although the benefit of this tax reduction falls entirely on employers, it is worth pointing out that the share of affected workers (individuals subject to social security contributions) increases across income deciles. In a behavioural framework, a discount in employers' social security contributions may increase labour demand. While these

simulations in EUROMOD are a static exercise, two factors are important for a potential assessment of positive behavioural effects: (i) the size of the tax reduction; (ii) the targeting of the measure.

Table 11 - Affected households by deciles of equivalised disposable household income

Decile of equivalised household disposable income	Share of individuals affected by a reduction in employer SIC (in %)	Share of individuals affected by a reduction in employer SIC (in absolute number)
1	9%	561 197
2	13%	794 044
3	18%	1 078 673
4	23%	1 367 590
5	25%	1 522 408
6	32%	1 944 791
7	39%	2 379 194
8	44%	2 670 072
9	47%	2 865 681
10	44%	2 668 607
Total	30%	1 785 3919

Source: Joint Research Centre, based on the EUROMOD model

Taken together the entire reform scenario (re-introduction of TASI and reduction in employer social security contributions), the direct impact of the reform on disposable income stemming from the re-introduction of TASI can be distinguished from the indirect impact through the potential creation of employment opportunities. As for the first effect, those whose disposable income decreased the most because of the re-introduction of TASI are in the majority of the cases households at the bottom of the income distribution. In this case, indeed the largest share of the household is made by not-in-work members, in particular, pensioners. The latter are likely not to be affected by a potential creation of employment opportunities.

As for the potential employment creation effect, it is important to look at the size of the tax reduction. The general reduction in employer social security contributions slightly reduces the labour tax wedge and leads to an average annual saving per employee for the employer of EUR 203 (Table 12).

Table 12 - Tax wedge on labour in the different reform scenarios

	Reduction in employer social security contributions		
	baseline	general	targeted to low income workers
Tax wedge on labour (all)	43.54%	43.19%	43.07%
Tax wedge on labour (low income)	40.28%	39.91%	39.63%
Average annual saving per employee for the employer		/ 203 euro	247 euro (per low income employee)

Source: Joint Research Centre, based on the EUROMOD model

Note: the tax wedge refers to employees. Low income workers are defined as having annual employment income below EUR 29000.

As the general reduction is small, a reduction in employer social security contributions targeted to low-income workers was simulated (scenario C2). Low-income workers are defined as workers with employment income below EUR 29000 per year. This choice has been made in order to be consistent with the pool of workers the policy makers wanted to affect with the "80 euro bonus". This targeted reform would guarantee a reduction of 1.4 pp of the sum of employers' social security contributions as shown in Table 10, corresponding to a saving of EUR 247 for the employer per low income employee. In a behavioural framework, lower employer social security contributions may increase labour demand, depending on the size of the reduction.

Conclusions

Italy has one of the highest tax burdens on labour in the EU. Recent discussions in the Eurogroup¹⁹ have underlined the negative incentive that high labour taxation can have on employment, especially for those groups with more elastic labour supply and demand such as low income earners and second earners. In particular, countries with relatively low employment rates could consider shifting the tax burden away from labour to revenue sources less detrimental to growth and employment, such as consumption, property taxes and environmental taxes²⁰ (European Commission, 2013, 2014 and 2015 Wöhlbier et al. 2014 and 2016).

In this context, Italy recently undertook two tax reforms going in contrasting directions with respect to previous Country Specific Recommendations. While they both aim at increasing disposable income, the "80 euro bonus" is consistent with the 2015 CSR on shifting the tax burden from labour to other bases, while the abolition of TASI is contrasting with this recommendation. On the one hand, in 2014, it introduced a labour tax reduction in the form of a refundable in-work tax credit (so-called "80 euro bonus"). On the other hand, as of 2016, main residences were granted a full exemption for the payment of the general service tax (so-called TASI), which was introduced two years earlier.

To estimate the impact of the abovementioned reforms a simulation exercise has been conducted with EUROMOD. The results suggest that: (i) the introduction of the "80 euro bonus" reduces the tax wedge on labour in particular for women, young and low-skilled workers, while the effect is more modest at household level and it also reduces the poverty rate, especially for households with children; (ii) the exemption of the service tax for main residences only very marginally affects disposable income and poverty and inequality; and (iii) the resources needed to finance the exemption of main residences from the payment of TASI could have alternatively been used to allow for a reduction of employers' social security contributions, reducing the tax wedge on labour by between 0.77 pp (in case of a generalised cut) and 1.4 pp (in case of a cut targeted to low income workers below EUR 29000), while the reintroduction of the property service tax has a slightly regressive impact.

Overall the analysis shows that the introduction of the in-work tax credit seems to go in the right direction²¹ in terms of lowering the tax wedge on labour, especially for women, young, and low-skilled, while reducing at the same time the poverty rate. The effect on household disposable income is also positive. On the other hand, the abolition of TASI on the main residence appears to be a step back in the process of achieving a more efficient tax structure by shifting taxation onto property and away from factors of production. The simulations show that the resources needed to finance the repeal of TASI on the primary residences could have been used instead for a reduction in employers' social security contributions targeted to low income workers, resulting in saving of around EUR 250 per employee. Although the simulations carried out for this analysis are static, such a reduction of the tax wedge on labour may well have a positive effect on labour demand, and hence employment.

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Annex 1: Information available in EUROMOD and the modelling approach

In order to properly apply the tax rules, the simulation of TASI requires two main variables: the cadastral values and the geographical location of the municipality to which the residence belongs. Information on cadastral values and on the municipality is available in the EUROMOD input data. Cadastral values are estimated by the EUROMOD team which codes the tax system for Italy on the basis of some characteristics of the property (e.g. square meters, location, etc.) and of the household (e.g., composition, income). In the available version of EUROMOD the TASI is modelled with a uniform effective tax rate of 0.0017 calibrated in order to guarantee the macro validation. However, this coding is not suitable for an analysis focused on the distributional impact of TASI as the macro-validation is not made at income decile level. For this reason, the TASI was re-modelled according to information deriving from the legislative source at the lowest feasible administrative level using complementary tax record data at municipal level. It has to be recalled, indeed, that TASI is a municipal tax, while the information on the municipality where the household lives are not available in the input EU-SILC data. However, EU-SILC data include the region of residence and the degree of urbanization. Therefore, households can be assigned to 60 cases defined by the interaction of the region (20) and the degree of urbanization (3 levels). The steps followed to simulate TASI rules (tax rates and tax credits) in the absence of the information about the municipality are the following: i) households are assigned to one of the 60 areas; ii) for each of the 60 areas a population-weighted average of the TASI is calculated based on the 2014 administrative data²²; iii) as far as the TASI tax credit rules is concerned, to each area has been attributed that of the largest municipality of that area; iv) depending on the area it belongs to, each household has been matched with the average TASI as well as with the TASI tax credit; v) finally, the property tax revenues simulated were validated against administrative tax records for each of the region and area combinations. For 31 combinations of regions and degree of urbanization the values simulated were replaced by the default EUROMOD coding with an effective tax rate at national level, as they guarantee a better validation.

¹ This is indicated as well in European Commission (2016). Source: Eurostat. The implicit tax rate on labour is defined as the ratio of taxes and social security contributions on employed labour income to total compensation of employees. For Italy, it includes personal income taxes (IRPEF and "addizionali regionali"), social security contributions (both for employees and employers), tax credits and the solidarity contribution.

² With Decree Law n.66 of 2014.

³ With the Stability Law for 2015 (n.190 of 2014).

⁴ The tax wedge on labour is defined as the share of the sum of simulated personal income taxes (IRPEF, addizionali regionali) which can be attributed to labour, employer and employee social security contributions over employment income plus employer social security contributions. The tax wedge on labour is calculated on average for all individuals (in each group) receiving employment income, benefiting or not from the tax credit.

⁵ The aim of reducing permanently the tax wedge was stressed in both in the Public Finance Report 2015 and in the Stability Programme 2015.

⁶ With the Stability Law for 2014 (n.147 of 2013).

⁷ With the Stability Law for 2015 (n.190 of 2014).

⁸ Which corresponds to the basic tax free allowance, i.e. the effective tax free area of the PIT.

⁹ Equivalised household disposable income corresponds to total household income adjusted by the household composition by using the OECD-modified scale, assigning a weight of 1 to the household head, 0.5 to other adults (14 year-old or older) in the household and 0.3 to children (younger than 14). The sum of these weighting factors is used to divide total household income.

¹⁰ Calculated on the basis of the 2015 Italian GDP at market prices (Eurostat nama_10_gdp).

¹¹ This estimate is based on the IRPEF microsimulation model based on 2013 tax forms (referring to 2012 incomes). Euromod estimate a first-round budgetary impact of the in-work tax credit for 2015 of EUR 8.4 billion (0.51 per cent of GDP), based on uprated 2011 incomes. This value could underestimate the effective cost by around 8%. Indeed, while tax records for 2015 are not available yet, tax records of Agenzia delle Entrate are available and amount to a net cost of the bonus (introduced in May) of EUR 6076 million. For 2014, EUROMOD simulates a cost of EUR 5615 million, corresponding to a simulation of about 92% of administrative data. The difference between this estimate and the value estimated with EUROMOD may be due to the income reference year (2011 in EUROMOD).

¹² Employment income and similar includes income from employment, atypical work (Co.co.co.), unemployment benefits ("Indennità di disoccupazione e di mobilità"), wage supplementation schemes ("Cassa Integrazione e Guadagni"), fringe benefits, and extraordinary payments.

¹³ This value, not shown in the tables, is calculated as the percentage increase in net employment income due to the bonus. It refers to all individuals with employment income, receiving or not receiving the tax credit. For employees receiving the tax credit the increase in net employment income is 5.5%.

¹⁴ The fixed poverty rate is defined here as the share of individuals living in household where equivalised household income is below 60% of the median equivalised household disposable income before the introduction of the tax credit.

¹⁵ Here the comparison is between the poverty rate defined as the share of individuals living in household where equivalised household income is below 60% of the median equivalised household disposable income excluding and including the bonus.

¹⁶ This is explained by the fact that the poverty line in relative terms is higher, due to a higher median income given by the introduction of the tax credit.

¹⁷ In Ministry of Finance: "Relazione tecnica alla legge di stabilità 2016".

¹⁸ The replacement of cadastral values with updated market values would guarantee more progressive results (Pellegrino et al., 2012).

¹⁹ E.g. Eurogroup statements of 12th September 2014:

http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ecofin/144872.pdf

²⁰ Among the authors considering tax growth friendliness see Johansson *et al.*, 2008; Arnold *et al.*, 2008 and 2011; Roeger and In't Veld, 2010; European Commission, 2013.

²¹ The analysis is based on a static microsimulation. It therefore does not quantify the effect of the reduction of the tax wedge on employment.

²² Both for the TASI rates and for the number of inhabitants.

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