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**Assessing the Distributional Effects of Housing Taxation in Italy:  
From the Actual Tax Code to Imputed Rent**

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# Assessing the Distributional Effects of Housing Taxation in Italy: From the Actual Tax Code to Imputed Rent<sup>\*</sup>

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## Abstract

The presence of extensive housing subsidies characterises the current tax system as inefficient. In this paper, we study whether inefficiency is the price to be paid to improve equity, by assessing the actual distributive impact of housing taxation on Italian households. We concentrate on the personal income tax on the main residence, and compare provisions of the Tax Code with an alternative approach, by considering the imputed rent from owner-occupied dwelling as a component of the personal income tax gross income. Our results suggests that current tax system is just as inefficient as it is inequitable. In particular, by including imputed rent from owner-occupied dwellings as a component of the personal income tax base, we find that overall inequality is reducing. Moreover, broadening the personal income tax base could lead to a consistent reduction of marginal tax rates.

**JEL Codes:** C81, H24, R21

**Keywords:** Housing taxation, Imputed Rents, Microsimulation Models

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## 1. Introduction

Homeownership is largely subsidised all around the world with a blend of different measures. For instance, imputed rents are often excluded from the tax base of the personal income tax, while interests paid on mortgages are often deductible. The justifications for these important government interventions are based on both efficiency and equity arguments (e.g., Rosen, 1985). On the efficiency side, it is recognised that there are positive externalities in housing consumption: improving one's own property has positive effects on property values in the neighbourhood. However, it is doubtful that all investments generate positive externalities: painting interior walls, for instance, is likely to have no spill-over effects on other owner occupiers. Hence, for a number of reasons, housing subsidies are most probably better justified on *equity* grounds. First, homeownership has a large impact on individual well being, and the impact is presumably larger for the poor (e.g., Watson et al., 2007). Second, houses constitute a large share of individual wealth; again, the share is larger for poor households. Third, homeownership is associated with a variety of collateral positive effects, which are larger for the poor. For instance, a strand of literature suggests that children benefit from homeowning, because they stay in school longer and perform better; and these effects are particularly important for low income households (e.g., Green and White, 1997). Moreover, among the poor, homeowners are less involved in crimes (e.g., Glaeser and Sacerdote, 1999).

Of course, as homeownership is subsidised, current tax systems are inefficient, and conducive to excess investments in housing with respect to alternative assets (like stocks and bonds). However, given the significance of equity considerations in justifying housing subsidies, inefficiencies can be the price to be paid in order to foster equity, so that it becomes important to study the redistributive effects of current tax systems, and understand if they really target the poor. This is even more true in the presence of a booming housing market (which was experienced in recent decades in almost all countries, despite the latest retrenchment) and sluggish-to-adapt tax systems (with tax bases largely reflecting historical values).

With respect to these arguments, Italy is an important case study. Homeownership has historically received (and still continue to receive) large tax subsidies. Not surprisingly,

the share of owner-occupied housing has increased heavily since 1977, climbing to about 70 percent of households, a number that characterizes Italy as one of the western countries with the highest share of owners-occupiers (close to the situation of UK, Finland and Norway; e.g., Watson et al., 2007). Tax subsidies are even larger now, due to the combination of a sharp increase of prices in the housing market - the average value of the dwelling with respect to household income climbed from 3.5 in 1977 to 5.8 in 2004 – and the fact that tax bases are locked at cadastral values far from market prices. On the contrary, public expenditures on housing are among the lowest in industrialized countries: a mere 0.1 percent of welfare expenditures compared with an average 3.5 percent in the EU countries (D’Alessio and Gambacorta, 2007).

Starting from these premises, in this paper we aim at assessing the redistributive effect of the existing housing tax system in Italy. In particular, we concentrate on the personal income tax on the main residence, and compare current situation with an alternative one, which considers as the tax base an imputed rent estimated by taking into account current market prices. The main results of the literature assessing the impact of imputed rents on income distribution sums to a somewhat mixed evidence (e.g., Bourassa and Hendershott, 1994, for Australia; Yagi and Tachibanaki, 1998, for Japan; Frick and Grabka, 2003, for UK, US, and West Germany; D’Ambrosio and Gigliarano, 2007, for Italy; Callan and Keane, 2009, for Ireland). Moreover, most of the papers do not explicitly consider the role of taxes in influencing income distribution. Here we rely on a static microsimulation model (discussed in Pellegrino et al., 2010), and simulate the personal income tax on the main residence, using as input data the Bank of Italy Survey on Household Income and Wealth. Our main results suggest that the current tax system is both inefficient and inequitable. In particular, by including imputed rent from owner-occupied dwellings as a component of the personal income tax base, we find that overall inequality is reducing. Moreover, broadening the personal income tax base could lead to a consistent reduction of marginal tax rates, with likely significant positive effects on labour supply and overall efficiency.

The remainder of the paper is structured as follows. Section 2 sets the stage, providing essential background information on the housing taxation system in Italy in the light of an optimal taxation scheme for housing. In section 3, we briefly present our

microsimulation model and the data. Section 4 reports the results of our analysis, while section 5 concludes.

## **2. On Housing Taxation in Italy**

In this section we briefly describe how the tax system on housing should be defined, and how this translates into the provisions of the Italian Tax Code. Following Rosen (1985), let  $V$  be the market value of a given dwelling. If  $i$  is the market interest rate (which we assume to be constant over time, in order to simplify the argument), then  $R=Vi$  is the gross imputed life annuity on the dwelling. To obtain the net imputed rent, one needs to consider also the maintenance costs ( $MA$ ), the depreciation costs ( $D$ ), and the interests paid on mortgage ( $MI$ ), so that  $R^N=R-MA-D-MI$ . It is this net rent  $R^N$  that should be included in the tax base of a comprehensive personal income tax.

However, current tax systems are usually far from this theoretical definition for a number of reasons. On the one hand, cyclical variations of  $V$  and  $i$  justifies a wealth tax besides a tax on personal income (PIT from now on). On the other hand, equity considerations (as discussed above) usually justifies the introduction of large subsidies for housing. In the US, for instance, property tax  $T_p=t_pV$  is deductible from the net rent  $R^N$ ; more importantly,  $R^N$  is excluded from the PIT taxable income (e.g., Rosen, 1985; Poterba, 1992). Moreover, both  $V$  and  $R$  considered by Tax Authorities are sluggish to adapt to changes in market conditions, so that the “exempted” tax base tends to increase when market is booming.

Something similar is provided also by the Italian Tax Code. The Italian Personal Income Tax is – at least in principle – a comprehensive income tax, which includes a wide array of incomes categories, from wages and salaries to financial capital rents. However, since many income sources are taxed under a separate regime, others are highly under-estimated, and others are totally exempted, the Italian PIT is very far from the theoretical definition of comprehensive income tax. These differences with respect to the theoretical definition of PIT gross income are magnified in the context of housing taxation. Incomes from dwellings are determined in different ways according to the kind of use, and they are imputed to each owner or occupier in usufruct according to her

percentage of ownership. Current rules in the Tax Code identify income for the taxpayer dwelling as the cadastral income, i.e. a hypothetical rent based on the property description and valuation listed in the local Land Register (the so-called *Catasto Fabbricati*), which was last revised in 1939, updated several times using common coefficients for all types of buildings, but clearly far from market values.<sup>1</sup> Income from unoccupied or holiday homes is equal to cadastral income augmented by one third, so it is largely different from market values as well. On the contrary, income from rented dwellings is defined on a cash basis, and – at least in principle – the tax base is equal to 85 percent of the actual cashed rent.

These general rules need a specification for the main residence, i.e. the dwelling where the household actually live according to Italian rules. Though greatly underestimated, the income from the main residence is considered as part of the PIT gross income, but it can be fully deducted starting from 2001. Hence, the main residence is basically exempted from the PIT. As in other countries, the main residence for owner-occupiers is favoured also along other dimensions. Indeed, some expenditures in purchasing or in restructuring the main residence allow the owner a tax credit. In particular, a tax credit of 19 percent of the yearly paid interests (up to 687 euro) is allowed when funding the purchase through a mortgage (hence,  $c^{MI}=0.19 \times MI$ ). A tax credit is available also for restructuring expenditures: the total expenditure (up to 48,000 euro from 2003 and up to about 77 thousand euro before 2003) has to be split in 10 years; every year a 41 percent (or 36 percent depending on the year the expenditure was incurred) tax credit is allowed (hence,  $c^{MA}=0.41 \times MA$ ). On the contrary, up to the last year no tax credits were allowed for renters of the main residence. It is only starting from 2008, that a tax credit related to personal income of the renter (up to about 30,000 euro) is allowed, which is higher for renters younger than 30 years old.

There are some important problems arising from the current house-PIT: first, the difference between the actual tax base and the actual market values (i.e.,  $R-R^t$ ) has become particularly large given the recent boom in housing market (and it is still large despite the recent retrenchment). Second, there is a correlation between dwelling *income* taxation and dwelling *wealth* taxation, which extend this problem to the

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<sup>1</sup> As we will discuss below, according to our estimates taxable rent  $R^t$  is about 8 percent of net rent  $R$ .

property tax.<sup>2</sup> Moreover, income from buildings is also characterized by a high level of tax evasion (e.g., Reviglio, 1998): at least half of cashed rents are not included in the tax base by landlords, so that tax cheaters are taxed only on the cadastral income.

### 3. The Empirical Analysis

#### 3.1. Data

Together with the IT-SILC Survey, the Bank of Italy Survey of Household Income and Wealth (hereafter, SHIW-BI) is the most important Italian source of information for the analysis of the characteristics and the evolution of the Italian society. It is carried out every two years. The Survey published in 2008 contains information on households income and wealth in the year 2006, covering 7,768 households, and 19,848 individuals. The sample is representative of the Italian population, composed by 23,5 millions households and 60 millions individuals. According to definition in the survey, “*a household is a group of persons living together, whether related by kinship or not, who fulfill their needs by pooling all or part of the income earned by the members*”; ...“*the head of the household is defined as the person earning the highest income (excluding property income)*” (Bank of Italy, 2008).

Relevant information in the SHIW-BI include: net income, net wealth, financial assets (bank deposits, government bonds, other securities and trade credits), real assets (real estate, business equity, valuables), and financial liabilities (liabilities towards banks, trade liabilities, liabilities towards other households). Income is defined on a personal basis. Interests, dividends, financial assets and real estates information are available

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<sup>2</sup> The Imposta Comunale sugli Immobili (Municipal Tax on Dwellings, ICI) is a property tax on each dwelling that has been introduced since 1993. Differently from the US case, the Italian property tax is not deductible from the PIT tax base. Tax revenues accrue directly to each Municipality where the buildings are located, and represent their major source of revenues. In theory, the ICI tax base should be the market value  $V$  of the dwelling. In practice, this is not the case. The Land Register value of the dwelling is evaluated by simply multiplying cadastral income by 100:  $V^r = R^c \times 100$ ; hence, the value of the dwelling is equal to the perpetual annuity of the cadastral income with a 1 percent discount rate. Each Municipality can choose the tax rate in a range between a minimum of 4 per thousand and a maximum of 7. The mean average tax rate is about 5-6 per thousand, so that ICI tax debt is effectively equal to 50-60 percent of the cadastral income  $R^c$ . As for the PIT, main residence for owner-occupiers is favoured. Up to 2007, a tax credit on the main residence was available. Starting from 2008, the main residence is totally exempted.

only at the household level. However, by exploiting information on the ownership shares, it is possible to evaluate the value of real estates also at the individual level.

One main problem for our analysis concerns the definition of imputed rent  $R$ . As discussed in Frick and Grabka (2003), there are several methods to define  $R$ : the market-value approach, the capital-market approach, and the opportunity-cost approach. The first is based on national accounts, and consider survey data on rents, including expenditures like water and lighting. The second basically considers the relationship  $R = \rho V$ , where  $\rho$  is the current market interest rate on alternative use of capital. Finally, the third method – also known as the modified market-value approach – rectifies the estimated market value by deducting interests payments and all relevant operating and maintenance costs, excluding heating.

Here we define net imputed rent (hereafter, IR) following a sort of modified market-value approach. We start from gross IR, considering the value interviewees indicated in SHIW-BI answering to the following question: “Assuming you wanted to rent this dwelling, what monthly rent do you or your household think could be charged?”. To obtain the net IR, we subtract mortgage interests and one tenth of maintenance expenditures from the gross IR.

### **3.2. The Microsimulation Model**

The analysis of the redistributive effects of housing taxation is based on a microsimulation model described in details in Pellegrino et al. (2010). The model estimates all the most important taxes on housing characterizing the Italian fiscal system described above. The SHIW-BI definition of each individual *net* income ( $Y$ ) is different from the Tax Code definition of net income. The microsimulation model considers all incomes included in the PIT tax base, incomes exempt from taxes and incomes taxed under a separate regime in order to evaluate net and gross incomes earned by each person (which, according to the Italian rules, is the subject of taxation, even if belonging to a family). Once each individual incomes have been simulated, we then aggregate results at the household level. The gross disposable income is equal to the sum of gross

PIT income, family benefits<sup>3</sup>, incomes exempt from taxation, gross incomes from financial assets, gross incomes taxed under a separate regime. From this result, we subtract the mortgage interests. The net disposable income is equal to the gross disposable income net of all taxes considered in the model: PIT, taxes on financial assets, taxes due on income taxed under a separate regime, ICI, TARSU, and IRAP; we then subtract the mortgage interests to the result. Finally, in order to obtain the equivalent disposable income we adopt the Cutler Scale (CS), defined as:  $CS = (N_A + .5N_C)^{.65}$  where  $N_A$  and  $N_C$  are respectively the number of adults and children within each household.

The cadastral income is equal to the cadastral value of the dwelling divided by 100. The problem is the estimation of the cadastral value of each dwelling. The National Land Agency estimates the number and the composition, as well as the overall cadastral value of dwellings (i.e., the overall ICI tax base). The SHIW-BI dataset contains information on the current market value of each dwelling owned by households. We compare these two aggregate values in order to obtain the average underestimation of overall cadastral values with respect to overall market values. Then, we imputed the same percentage of underestimation to the real value of each dwelling declared by each interviewed. By dividing the result obtained by 100, and using the percentage of ownership of each person within the household, we obtain the cadastral income included in the definition of individual PIT gross income.

The model “goodness-of-fit” is reassuring. Estimated revenues from the House-PIT are about 7 billion euro in 2007, an estimates close to figures provided by the Ministry of Finance.

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<sup>3</sup> Family benefits represents the so-called *Assegni al Nucleo Familiare*, a very small cash transfer characterizing the Italian Welfare State, varying with the number of children and income.

## 4. Results

### 4.1. Some Preliminary Statistics on Household Main Residences

Italian households are 23.5 million (Table 1): 16.8 million (71.7 percent) are the owner-occupiers of their main residence, or occupiers in usufruct; 5 million (21.3 percent) rent or occupy it under redemption agreement (the so-called “*a riscatto*”); 1.6 million (7.0 percent) are rent-free tenants (and in 92 percent of the cases, the dwelling is owned by relatives or friends). Almost 70 percent of tenants rent the house from other households; 25.7 percent of tenants rent from public bodies, like the *Istituto Autonomo Case Popolari* (a locally funded Institute providing housing to the poor), but also Regions, Provinces, Municipalities; and 4 percent from private firms. Almost all the owner-occupiers (88.7 percent) are not burdened with a mortgage, while only a small percentage (11.3 percent) have a mortgage<sup>4</sup>.

**Table 1: Households composition by tenure status**

Tenure Status	Number of households	Composition
Owner occupiers without mortgage or in usufruct	14,944,066	63.6
Owner occupiers with mortgage	1,900,215	8.1
Tenants or occupiers under redemption agreement	4,999,697	21.3
Rent-free tenants	1,638,022	7.0
<b>Total</b>	<b>23,481,999</b>	<b>100.0</b>

Source: Own calculations based on SHIW.

As in Great Britain and US, the share of the households living in owner-occupied dwellings is about 70 percent in Italy (about 45 percent in Germany), while renters (including rent-free tenants) are about 30 percent (a half in Germany). The composition of owner-occupied dwellings is different: the share of Italian households without mortgage is three times bigger than in Great Britain, Germany and US (Frick and Grabka, 2003); Italian households with a mortgage are only 8.1 percent in Italy and about 25 percent in Germany and 50 percent in Great Britain and US.

<sup>4</sup> Gale et al. (2007) suggest that mortgage interest deduction seem to have a small impact on homeownership.

Another relevant difference between Italy and other countries is related to social housing: only 4.2 percent of households (one million tenants, about one fifth of total tenants) rent a council house at a subsidized rate. Very few countries (e.g., Germany and Portugal, with figures of 6.5 and 3.3 percent respectively) share this situation. On the contrary, most other EU countries have considerable higher percentages of households living in council houses: examples include Netherlands (34.6 percent), Sweden and Great Britain (21 percent), and Denmark (20 percent) (D'Ambrosio and Gigliarano, 2007).

Looking at the distribution of households by deciles of equivalent disposable gross income, the higher the decile, the higher the percentage of owner occupier within each decile (Table 2). Since 71.7 per cent of household own their main residence, the gap between the first and the last decile is relatively small (57.3 percent to 75.9 for household without mortgage and 5.1 percent to 10.1 for households with mortgage). As expected, the percentage of tenants within each decile is decreasing: it is 28.3 percent in the first decile and 10.7 percent in the last. The same picture is observed for rent-free tenants, with values ranging from 9.4 percent in the first decile to 3.3 in the last one.

**Table 2: Distribution of households by decile of equivalent gross income**

Tenure status					
Decile	Owner occupiers without mortgage or in usufruct	Owner occupiers with mortgage	Tenants or occupiers under redemption agreement	Rent-free tenants	Total
1	57.3	5.1	28.3	9.4	100.0
2	61.9	1.9	26.9	9.3	100.0
3	61.9	6.6	22.6	8.9	100.0
4	60.8	5.8	24.9	8.6	100.0
5	59.3	10.1	24.5	6.1	100.0
6	66.5	8.8	19.1	5.7	100.0
7	63.3	10.4	19.6	6.6	100.0
8	63.9	10.0	20.8	5.3	100.0
9	65.7	12.1	15.4	6.7	100.0
10	75.9	10.1	10.7	3.3	100.0
<b>Total</b>	<b>63.6</b>	<b>8.1</b>	<b>21.3</b>	<b>7.0</b>	<b>100.0</b>

*Source:* Own calculations based on SHIW.

Not surprisingly, the share of households still paying off their mortgage is decreasing when the age of the household head is increasing, while the opposite occurs considering owner-occupiers without a mortgage. Moreover, the first age class here considered has a considerable high percentage of tenants (more than one third), while it is only 16 percent for household in which the head is older than 65 (Table 3).

**Table 3: Distribution of Households by age class**

Age class	Tenure status				Total
	Owner occupiers without mortgage or in usufruct	Owner occupiers with mortgage	Tenants or occupiers under redemption agreement	Rent-free tenants	
≤ 35	36.2	15.4	36.6	11.9	100.0
>35 & ≤ 65	60.5	10.6	21.3	7.6	100.0
> 65	78.9	0.9	16.0	4.1	100.0
<b>Total</b>	<b>63.6</b>	<b>8.1</b>	<b>21.3</b>	<b>7.0</b>	<b>100.0</b>

*Source:* Own calculations based on SHIW.

#### 4.2. The Distribution of Main Residence Cadastral Incomes and Imputed Rents

The main residence cadastral income  $R^t$  is very low with respect to the net IR: the mean value of the former is 524 euro, while that of the latter 6,707 (Table 4). Both  $R^t$  and net IR similarly increase with respect to income deciles: the cadastral income is 318 euro in the first decile and only 901 euro (about 2.8 times) in the top one; the corresponding values for the net IR are 4,502 and 11,055 (about 2.5 times), respectively. A very different picture emerges whenever they are evaluated with respect the equivalent disposable gross income: on average,  $R^t$  is only 1.6 percent of the gross income, while the net IR is about one fifth. Moreover, even if both  $R^t$  and IR are decreasing with income, the net IR is clearly decreasing at a faster rate: it is 61.3 percent in the first decile and only 12.1 percent in the top one; the corresponding values for  $R^t$  are 4.4 and 1 percent, respectively. According to these results, whenever the net IR is considered as a part of the PIT taxable income, both the overall inequality and the overall redistributive

effect of the tax are expected to decrease, as we show in the following empirical analysis.

**Table 4: Value of main residence cadastral income by decile of household equivalent gross disposable income**

Decile	Percentage of households with positive main residence income	Cadastral income		Net IR	
		Mean value (euro)	Mean value / household income	Mean value (euro)	Mean value / household income
1	62.4	318	4.4	4,502	61.3
2	63.8	360	3.1	4,570	39.3
3	68.5	377	2.4	5,224	33.6
4	66.6	392	2.1	5,294	28.5
5	69.4	470	2.1	6,058	27.2
6	75.2	518	1.9	6,677	25.1
7	73.7	504	1.6	6,558	20.9
8	73.9	569	1.5	7,242	19.1
9	77.9	680	1.4	8,192	17.0
10	86.0	901	1.0	11,055	12.1
<b>Total</b>	<b>71.7</b>	<b>524</b>	<b>1.6</b>	<b>6,707</b>	<b>20.3</b>

*Source:* Own calculations based on SHIW.

### 4.3. Equality and Efficiency Consequences of the Imputed Rent Taxation

As discussed above, one major problem with the actual taxation of housing income in Italy is the discrepancy between cadastral incomes and market values. Moreover, the main residence cadastral income is not taxed. What will happen to income distribution if we consider cadastral income in the PIT taxable income? And what will happen if we update cadastral income to current market values? According to most of the literature, excluding imputed rent amount to a subsidy for owner-occupation, and it is likely to favor highest income group (e.g., Aaron, 1970; Rosen, 1985). Including imputed rent in the tax base should then be equality enhancing.

We consider four groups of households by their tenure status: owner occupiers without mortgage or occupiers in usufruct (group 1); owner occupiers with mortgage (group 2); tenants or occupiers under redemption agreement (group 3); rent-free tenants (group 4).

According to the actual Tax Code, only households belonging to group 1 and 2 have a positive main residence cadastral income.

Let the actual overall household average gross income be 100. Then, the actual mean gross income is about 106.3 for owner occupiers with mortgage, and 113.8 for owner occupiers without mortgage; on the contrary, it is considerable lower for tenants (82.6) and for rent-free tenants (79.4) (Table 5). These income positions are not affected whenever  $R^t$  is included in taxation: its inclusion affects only the PIT taxable income, and not also the PIT gross income. On the contrary, the relative positions are very different whenever the net IR is considered as a component of the personal income tax gross income: with respect to the actual situation, the overall gross income is 114.2, and it raises up to 126.4 for owner occupiers without mortgage and to 131.2 for owner occupiers with a mortgage. As long as the other two groups considered here are not affected by the tax change, their income positions do not change with respect to the actual situation.

As already suggested in other papers, inclusion of the net IR yields a considerable reducing effect on income inequality (Frick and Grabka, 2003; D'Ambrosio and Gagliarano, 2007). Gini coefficient for equivalent household disposable gross income is .3823 with the reference model, and decreases to .3678 with the net IR. By considering the owner occupiers without mortgage, the Gini coefficient fall from .3913 to .3601, whilst the corresponding values for owner occupiers with a mortgage are .3392 and .3165, respectively.

Similar comments emerges also when decomposing population by age groups. Relative income positions are: 87.7 if the head of the household is 35 or younger, 107.5 if he is in the class 35-65, and 90.2 if he is older than 65 (Table 6). With the inclusion of the net IR, the corresponding values are 97.5, 120.8 and 107.5, respectively. Clearly, as the share of households who own the main residence increases with age, if net IR is considered the higher variations of the Gini coefficient are registered in the top two income classes, whilst the variation in the first age class is marginal.

The inclusion of net IR from owner-occupied dwelling as a component of the personal income tax gross income let the revenues increase by about 20 percent. Given the broadening in the tax base following the inclusion of IR, we fix tax revenues at the

actual level, and ask what reduction of tax rates this allows.<sup>5</sup> Not surprisingly, the reduction in the level of marginal tax rates would be consistent (Table 7): for instance, it could be possible to reduce the marginal tax rates by 6 percentage points on the first bracket, by 5 percentage points on the second one, by 2 points on the third and by 1 point on the last.

Renters and rent-free tenants (which are also the poorest ones) could benefit the most from this marginal tax rate modification, since they will have the same tax base as before. In particular, letting the actual overall household average net income be 100, the overall net income is 117.8, and it raises from 105.4 up to 128.9 for owner occupiers without mortgage and from 110 to 132.1 for owner occupiers with mortgage. For tenants and rent-free tenants the corresponding values are 85.8, 89.6, 82.7 and 86.4, respectively (Table 8). Since  $R'$  is about 8 percent of net IR, note that if it were taxed only small variation in the income positions could be registered. Moreover, taxation of net IR will change in opposite directions the inequality of groups with positive and null IR. In particular, Gini coefficient falls for owner occupiers and raises for tenants and rent-free tenants. For the latter groups, the reduction of marginal tax rates benefits the most the richer taxpayers; this does not happen for owner occupiers because the reduction of tax debts due to the decreasing marginal tax rates is more than compensated by the increase of the gross income.

Similar conclusions can be obtained analyzing results by age class: in the first age class inequality is increasing, whilst it is reducing for the last two (Table 9). This is due to the lower percentage of owner occupiers in this group with respect to the other two.

## 5. Concluding Remarks

In this paper we study the actual distributive impact of housing taxation on Italian households, and then compare this with an alternative approach of taxation by considering the imputed rent from owner-occupied dwelling as a component of the personal income tax gross income. The analysis is based on a static microsimulation

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<sup>5</sup> We leave tax deductions and tax credits unchanged with respect the actual Tax Code. For details on the 2006 PIT structure, see Pellegrino and Vernizzi 2010.

model that uses as input data those provided by the Bank of Italy in its Survey on Households Income and Wealth. The model simulate all the most important taxes on income and housing wealth. In particular, we first simulate the distribution of the 2006 housing taxation on households. We then highlight the problems and the distributional consequences of this system of taxation with respect to a tax system in which the “imputed rent” is included in the personal income tax base.

Our results show that, by including imputed rent from owner-occupied dwellings as a component of the personal income tax base, overall inequality is reducing. Moreover, broadening the personal income tax base could lead to a consistent reduction of PIT tax rates, shifting tax burden from income to wealth, with potentially positive effect on capital and labour supply. Tenants and rent-free tenants, who are also the poorest groups, could benefit the most from this tax change.

**Tab. 5: Gross income by tenure status**

Gross income	Tenure status				Total
	Owner occupiers without mortgage or in usufruct	Owner occupiers with mortgage	Tenants or occupiers under redemption agreement	Rent-free tenants	
<b>2006 mean income</b>	<b>106.3</b>	<b>113.8</b>	<b>82.6</b>	<b>79.4</b>	<b>100.0</b>
<b>Mean income if R were taxed</b>	<b>106.3</b>	<b>113.8</b>	<b>82.6</b>	<b>79.4</b>	<b>100.0</b>
<b>Mean income if net IR were taxed</b>	<b>126.4</b>	<b>131.2</b>	<b>82.6</b>	<b>79.4</b>	<b>114.2</b>
<b>Gini coefficient for the 2006 distribution</b>	<b>0.3913</b>	<b>0.3392</b>	<b>0.3514</b>	<b>0.3584</b>	<b>0.3823</b>
<b>Gini coefficient for the distribution with R</b>	<b>0.3913</b>	<b>0.3392</b>	<b>0.3514</b>	<b>0.3584</b>	<b>0.3823</b>
<b>Gini coefficient for the distribution with net IR</b>	<b>0.3601</b>	<b>0.3165</b>	<b>0.3514</b>	<b>0.3584</b>	<b>0.3678</b>

*Source:* Own calculations based on SHIW.

**Tab. 6: Gross income by age class**

Gross income	Age class			Total
	≤ 35	> 35 & ≤ 65	> 65	
<b>2006 mean income</b>	<b>87.7</b>	<b>107.5</b>	<b>90.2</b>	<b>100.0</b>
<b>Mean income if R were taxed</b>	<b>87.7</b>	<b>107.5</b>	<b>90.2</b>	<b>100.0</b>
<b>Mean income if net IR were taxed</b>	<b>97.5</b>	<b>120.8</b>	<b>107.5</b>	<b>114.2</b>
<b>Gini coefficient for the 2006 distribution</b>	<b>0.3162</b>	<b>0.3922</b>	<b>0.3711</b>	<b>0.3823</b>
<b>Gini coefficient for the distribution with R</b>	<b>0.3162</b>	<b>0.3922</b>	<b>0.3711</b>	<b>0.3823</b>
<b>Gini coefficient for distribution with net IR</b>	<b>0.3131</b>	<b>0.3789</b>	<b>0.3555</b>	<b>0.3678</b>

*Source:* Own calculations based on SHIW.

**Table 7: Tax brackets and marginal tax rates**

Tax base (euro)		Marginal tax rate (%)		
		2006	if R were taxed	if net IR were taxed
Up to	26,000	23	22.43	17
26,000	33,500	33	33	28
33,500	100,000	39	39	37
Above 100.000		43	43	42

*Source:* Ministry of Finance, 2005; own calculations based on SHIW.

**Tab. 8: Net income by tenure status**

Net income	Tenure status				Total
	Owner occupiers without mortgage or in usufruct	Owner occupiers with mortgage	Tenants or occupiers under redemption agreement	Rent-free tenants	
<b>2006 mean income</b>	<b>105.4</b>	<b>110.0</b>	<b>85.8</b>	<b>82.7</b>	<b>100.0</b>
<b>Mean income if R were taxed</b>	<b>105.2</b>	<b>109.8</b>	<b>86.1</b>	<b>83.0</b>	<b>100.0</b>
<b>Mean income if net IR were taxed</b>	<b>128.9</b>	<b>132.1</b>	<b>89.6</b>	<b>86.4</b>	<b>117.8</b>
<b>Gini coefficient for the 2006 distribution</b>	<b>0.3389</b>	<b>0.3026</b>	<b>0.3042</b>	<b>0.3148</b>	<b>0.3316</b>
<b>Gini coefficient for the distribution with R</b>	<b>0.3391</b>	<b>0.3031</b>	<b>0.3048</b>	<b>0.3155</b>	<b>0.3318</b>
<b>Gini coefficient for distribution with net IR</b>	<b>0.3144</b>	<b>0.2800</b>	<b>0.3129</b>	<b>0.3239</b>	<b>0.3231</b>

*Source:* Own calculations based on SHIW.

**Tab. 9: Net income by age class**

Net income	Age class			Total
	≤ 35	> 35 & ≤ 65	> 65	
<b>2006 mean income</b>	<b>90.2</b>	<b>105.8</b>	<b>92.6</b>	<b>100.0</b>
<b>Mean income if R were taxed</b>	<b>90.3</b>	<b>105.8</b>	<b>92.4</b>	<b>100.0</b>
<b>Mean income if net IR were taxed</b>	<b>103.9</b>	<b>123.1</b>	<b>112.8</b>	<b>117.8</b>
<b>Gini coefficient for the 2006 distribution</b>	<b>0.2813</b>	<b>0.3435</b>	<b>0.3143</b>	<b>0.3316</b>
<b>Gini coefficient for the distribution with R</b>	<b>0.2816</b>	<b>0.3436</b>	<b>0.3144</b>	<b>0.3318</b>
<b>Gini coefficient for the distribution with net IR</b>	<b>0.2831</b>	<b>0.3341</b>	<b>0.3085</b>	<b>0.3231</b>

*Source:* Own calculations based on SHIW.

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