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TAX CREDITS FOR DEPENDENT CHILDREN AND CHILD BENEFITS IN ITALY

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JEL CLASSIFICATION: D31; H24; H53.

KEYWORDS: Income tax, child benefits, tax credits, microsimulation, effective marginal tax rates, Italy.

TAX CREDITS FOR DEPENDENT CHILDREN AND CHILD BENEFITS IN ITALY

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Abstract

This paper focuses on the relative redistributive and efficiency power of tax credits for dependent children (TCDC) and child benefits (CB) in Italy within the period 1991-2003. Results indicate that the redistributive power of child benefits is generally higher than that of tax credits, especially for low-income households. In 2003, for example, the number of households that cannot claim tax credits for dependent children has increased by 21.6 per cent in the first decile, compared with the previous year. At the same time, in 2003, the amount of tax credits that cannot be claimed because of tax exhaustion has increased from 49.7 per cent to 68.5 per cent of the potential amount of tax credits available to the same households. As a consequence, one billion of euros spent on CB has, on average, twice as much power of the same amount spent on TCDC. On the other hand, evidence is also provided that the interaction between the personal income tax (applied on an individual basis) and child benefits (paid on a family basis) gives rise to higher effective marginal tax rates at lower income levels.

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Introduction

In Italy, as in many other countries, support to income of households with children is mainly paid as cash benefits and as specific tax credits within the personal income tax (PIT). In Italy, tax credits for dependent children have been independent of income for many years. Since 2001, they are applied depending on an income scale. Their claiming is still dependent on children having below a certain income level and, more important, they are not refundable. Tax credits can therefore be claimed only by PIT taxpayers on an *individual income* basis and only until tax exhaustion. Cash benefits, instead, are paid considering both categorical requisites and through means-testing procedures. The amounts of child benefits are generally decreasing with incomes and increasing in the number of children. Most importantly, they are paid on a *family income* basis, i.e. taking into account total household income.

This way of supporting households with children is likely to generate important interactions on both sides of redistribution and efficiency. In particular, are tax credits for dependent children more effective than child benefits in redistributing income? How much effective are these tools in alleviating poverty of low income households? How has this performance evolved over time? Do child benefits generate significant poverty traps?

This paper tries to answer these questions by calculating redistributive and efficiency effects of different tax/benefit systems within the period 1991-2003. Evidence is shown that child benefits are more effective than tax credits for dependent children in redistributing income and in alleviating poverty mainly because of the non-refundable nature of tax credits. Evidence is also shown that the power of tax credits is declining over time, as an increasing proportion of them is «wasted» because of insufficient gross tax. On the other hand, there is evidence that the interaction between PIT and child benefits gives rise to higher effective marginal tax rates at lower income levels.

The structure of the paper is as follows. Section 1 provides the operational framework to calculate the redistributive impacts of PIT, child benefits and tax credits for dependent children. Section 2 shows the results, separately discussing the impact of each tool on the total income distribution and on poverty. Section 4 deals with efficiency issues, comparing the intensity and the distribution of effective marginal tax rates in three years, 1995, 1998 and 2003. Section 5 concludes.

1. How to measure the redistributive effects of PIT and child benefits

The redistributive impact of different PIT and child benefits (CB) systems is measured by the difference of Gini indices before and after PIT and CB. According to Reynolds and Smolensky (1977), this difference may be decomposed as follows:

[1] $$RE = G_B - G_A = \left(G_B - C_{A(B)}\right) + \left(C_{A(B)} - G_A\right)$$

where *B* and *A* are two hypothetical income distributions before and after tax/benefits, respectively; the first term in brackets of the right hand side is the progressivity effect; the second term in brackets is the reranking effect; *G* is the Gini index and *C* is the concentration index of income after tax/benefit provisions. Note that the concentration of income after tax and benefits is measured over the income distribution *B*, i.e. before taxes and benefits. In the absence of reranking, this measure does not differ from the Gini index of the same income distribution measured over the income distribution *A*, which means that the second term in round brackets will be equal to zero.

Expression [1] can be decomposed in order to highlight the contribution of the disproportionality of the personal income tax and the contribution of the average tax rate to the total redistributive outcome. The first effect is measured by the Kakwani index Π; the second effect is measured by the implicit average tax rate $t^* = \frac{t}{1-t}$.

Of particular concern in this paper is the measurement of various redistributive impacts: a) the overall impact of the net income tax, i.e. after tax credits RE_{NP}; b) the impact of the gross personal income tax, i.e. before tax credits RE_{GP}; c) the impact of tax credits RE_{TC}; d) the impact of tax credits for dependent children RE_{TCC}; e) the overall impact of the net income tax and child benefits RE_{NPCB}; f) the impact of child benefits separately taken RE_{CB}.

Corresponding formulas are given by the following expressions:[1]

[2] $$a)\ RE_{NTAX} = G_B - G_{B-NTAX} = \Pi_{NTAX}\frac{t_{NTAX}}{1-t_{NTAX}}$$

$$b)\ \Pi_{NTAX} = C_{NTAX(B)} - G_B$$

Part a) of expression [2] is the decomposition of the difference between Gini indexes. The subscript *B-NTAX* indicates the income distribution after the net income tax; *NTAX*, therefore, indicates the net income tax; *t* indicates the average

[1] For simplicity of notation, the reranking effect R is omitted in all formulas. Its value, however, is given in tables in the empirical section.

tax rate (in this case of the net income tax). Part b) of [2] indicates that the Kakwani index Π is calculated as the difference between the concentration coefficient of the net income tax (measured on the initial income distribution B) and the initial Gini index.

With regard to the impact of the gross personal income tax (*GTAX*), formulas are as follows:

$$[3] \qquad \begin{aligned} a)\ & RE_{GTAX} = G_B - G_{B-GTAX} = \Pi_{GTAX} \frac{t_{GTAX}}{1-t_{GTAX}} \\ b)\ & \Pi_{GTAX} = C_{GTAX\,(B)} - G_B \end{aligned}$$

The impact of tax credits (*TCRE*) is instead given by:

$$[4] \qquad \begin{aligned} a)\ & RE_{TCRE} = G_{B-GTAX} - G_{B-NTAX} = \Pi_{TCRE} \frac{t_{TCRE}}{1-t_{TCRE}} \\ b)\ & \Pi_{TCRE} = C_{TCRE\,(B-GTAX)} - G_{B-GTAX} \end{aligned}$$

It is worth noting that, in this case, the redistributive impact of tax credits is measured by the difference between the Gini index of the income distribution after the gross income tax (i.e. excluding tax credits) and the income distribution after the net income tax (i.e., including tax credits). Consequently, the concentration coefficient of tax credits included in the Kakwani index is calculated on the income distribution after gross income tax, which is also the reference distribution for the Gini index.

If the redistributive impact of tax credits for dependent children (TCDC) is to be isolated from expression [5], one has to go a step further, as follows:

$$[6] \qquad \begin{aligned} a)\ & RE_{TCDC} = G_{B-NTAX\,(TCDC)} - G_{B-NTAX} = \Pi_{TCDC} \frac{t_{TCDC}}{1-t_{TCDC}} \\ b)\ & \Pi_{TCDC} = C_{TCDC(B-NTAX\,(TCDC))} - G_{B-NTAX\,(TCDC)} \end{aligned}$$

The redistributive impact of tax credits for dependent children is therefore measured by the difference between the Gini index of the income distribution after the net income tax, but without tax credits for dependent children (*NTAX*(*TCDC*)), and the Gini index of the income distribution after the net income tax. The calculation of the Kakwani index is adjusted accordingly, with the concentration coefficient measured on *NTAX*(*TCDC*).

Finally, one can measure the redistributive impact of the net income tax and child benefits together and that of child benefits taken separately. In the first case, we have:

[7]
$$a)\ RE_{NTAX+CB} = G_B - G_{B-NTAX+CB} = \Pi_{NTAX+CB}\frac{t_{NTAX+CB}}{1-t_{NTAX+CB}}$$
$$b)\ \Pi_{NTAX+CB} = C_{NTAX+CB(B)} - G_B$$

In the second case, one can get:

[8]
$$a)\ RE_{CB} = G_{B-NTAX} - G_{B-NTAX+CB} = \Pi_{CB}\frac{t_{CB}}{1-t_{CB}}$$
$$b)\ \Pi_{CB} = C_{CB(B-NTAX)} - G_{B-NTAX}$$

3. Empirical section

3.1. The redistributive impact of the personal income tax

Equipped with the indexes developed in the previous paragraph, one can calculate the desired redistributive impact. This is done with the microsimulation model AWARETAX.[2] The redistributive impact of the personal income tax (net and gross) and the contribution of tax credits and tax credits for dependent children is given in table 1. The first panel of the table describes the total redistributive effect of the net personal income tax (*NTAX*). As can be easily noted, the redistributive impact is increasing over time, but as the decomposition between Π and *t* also reveals, the potential redistributive power of *NTAX* is the result of different combinations of disproportionality and average tax rates across years. To this purpose, some critical structural changes may be distinguished.

A first structural change can be dated back between 1991 and 1993 where both Π and *t* moves in the same upward direction. Tax revenue is increasing in this period and disproportionality is also increasing, with the two top tax rates moving from 40 and 50 per cent to 41 and 51 per cent, respectively. The effects of increasing the two top tax rates is also visible in the redistributive impact of gross income tax *GTAX* (the second panel), where again, from 1991 to 1993, both Π and *t* increases. It is worth noting that without considering tax credits, the disproportionality of income tax is much lower (0.086 and 0.096 in 1991 and 1993, respectively, compared with 0.171 and 0.185 of the net income tax in the same years). It means that tax credits, in this period, contributes significantly to make the net income tax more concentrated on high-income households. As the comparison between average tax rates of *NTAX* and *GTAX* shows, the contribution of tax credits worth about 4 percentage points of total income.

[2] See Appendix 1 for the basic characteristics of the model and for the data used in this paper.

The separate impact of all tax credits between 1991 and 1993 is indeed reported in the third panel of table 1. The average tax credit rate has negative entries, as tax credits are in fact tax expenditures, i.e. they reduce the total tax paid by households. The Kakwani index has also negative entries, signalling that tax credits are mostly concentrated (in absolute values) on the lowest part of the income distribution, even though in 1993 this concentration is lower.[3] Their amount, in this period, is around 3.7 and 4.6 per cent of total income, with a redistributive power around 2.7 per cent of the initial Gini index (0.367). It means that tax credits contribute to around one third of the total redistributive impact of the net income tax (7.5 per cent of the initial Gini index in 1991 and 8.5 per cent in 1993).

Therefore, on average, tax credits seem to be a relatively powerful tool to redistribute income in this period. However, things are not so encouraging when tax credits for dependent children are separately taken. While the Kakwani index of the fourth panel of table 1 reveals that tax credits for dependent children (TCDC) are even more disproportionately distributed than all tax credits taken together, the average rate at which they are paid is very low (about 0.2 per cent). Consequently, their redistributive power is only about 0.2 per cent of the initial Gini index, less than 10 per cent of the total redistributive power of all tax credits taken together and only 2.6 per cent of the total redistributive impact of the net income tax.

The second structural change can be dated back from 1993 to 1998. In this period, an increasing redistributive impact is obtained by a combination of lower disproportionality and a mounting average tax rate, especially in 1998.[4] The reasons of this change must be carefully examined. In particular, the contraction of the Kakwani index is due to a reduction of the same index in the case of *GTAX* (second panel). This latter has been originated by an increase of nine percentage points of the bottom marginal tax rate and a reduction of five percentage points of the top marginal tax rate from 1995 to 1998.[5] The fall of Kakwani index of *GTAX* lends to a fall in its total redistributive impact (from 0.02 in 1995 to 0.017 in 1998), notwithstanding the significant increase in the average tax rate (from 23.6 per cent to 31.5 per cent). The increase of the total redistributive impact of the net income tax (from 0.031 in 1995 to 0.344 in 1998) must be therefore necessarily driven by an increased redistributive power of tax credits. This is shown in the third panel. From 1993 to 1998, Π increases significantly for tax credits, signalling their potential better targeting on low-income households. After a slight decrease in 1995, also the implicit average tax credit rate significantly increases from 1995 to 1998. As a result, the redistributive power of tax credits increases to 2.9 and to 4.6 per cent of the initial Gini index in 1995 and 1998, respectively, which is a remarkable percentage of the total redistributive impact in the same period (about 50 per cent in 1998). However, things do not change very much when tax credits for dependent children are isolated. Even though their potential redistributive

[3] Recall that the concentration of tax credits is measured on the distribution of income after gross income tax (*B-GTAX*).

[4] The regional income tax is introduced in 1998.

[5] In 1998, the distance between the top and the bottom marginal tax rate is indeed 27 percentage points against 41 percentage points prevailing in 1995. See Table A.1 in Appendix 2 for details.

power is almost doubled in 1998 (compared with 1991), the amount of resources devoted to this specific item maintains very low (about 0.36 per cent of total income against a 5.3 per cent of all tax credits in 1998).

The third structural change can be traced back to the period from 2000 to 2003. In this case, the total redistributive impact increases for opposite reasons compared with the second structural change. From 1998 to 2003, Π starts increasing again, while the average tax rate shows a downward trend. A significant change, within this period, is experimented with the last reform (2003), where a base allowance has been introduced marking a differentiated no-tax area for employees, self-employed and pensioners. The power of the base allowance can be particularly appreciated if one looks at the second panel of table 1 (*GTAX*). Following a period of invariance between 1998 and 2002 Π sharply increases from 0.06 to 0.15 in 2003. This implies that, excluding tax credits, the gross income tax system prevailing in 2003 is particularly well targeted to low-income households. Indeed, the proportion of the total redistributive power explained by the gross income tax is now much greater compared with other systems (about 85 per cent, 9.3 per cent of the initial Gini index compared with a total 11 per cent).

The income tax system of 2003 marks a drastic change in the way redistribution is made through the personal income tax. As a consequence of the attention to what happens *before* tax credits, the redistributive power of tax credits falls, in 2003, to 1.7 per cent of the initial Gini index, despite the fact that their disproportionality is almost the same as that of 1998 (Π equal to 0.33 in both cases). In this context, however, tax credits for dependent children seem to be of particular concern to the policy-maker. Their redistributive power increases to 0.9 per cent of the initial Gini index, doubling again since 1998 also in terms of resources devoted to them. As a result, their power is now about 50 per cent of the total redistributive power of all tax credits taken together.

2.2. The redistributive impact of the personal income tax and child benefits

How does the previous analysis change if one introduces child benefits? Table 2 answers this question by replicating the analysis to take into account the overall impact of both *NTAX* and child benefits (first panel) and the separate impact of child benefits (second panel). Overall, the three structural changes so far described survive the introduction of child benefits, with the total redistributive power amplified by the action of child benefits as a percentage of the initial Gini index. Taking child benefit separately, one can also appreciate that their disproportionality, on the corresponding reference income distributions, is on average 2.3 times that of tax credits for dependent children on the overall period.

It is also worth noting that when child benefits are left invariant in nominal terms, their redistributive power decreases, as occurred from 1991 to 1995.[6] This loss of redistributive power was driven by both a reduction of the disproportionality effect and a reduction of real resources devoted to child benefits. The two effects have also interacted. From 1991 to 1995 the monetary amount of child benefits were kept constant in nominal terms. With positive inflation rates, the real amount of resources has been eroded, and this is traced in table 2 (second panel) by a slight reduction of the average rate of benefit paid in spite of invariance in nominal terms. From 1998 onwards, a marked structural change has reversed this effect, driving the total redistributive impact to the levels achieved in 1989 (not reported on the table) where child benefits were introduced. This reversion is mainly caused by a re-evaluation of the monetary amounts of both child allowances and income limits and by a better targeting of households participating in the programme. Notwithstanding this effort, it seems that restructuring child benefits has achieved nothing more than the effect that was already in place about fifteen years ago.

Whatever the relative effect of child benefits across years, it is worth focusing on the fact that the Kakwani index of child benefits is about two times and a half as much that of tax credits for dependent children in all years. However, with the exception of 2002, the average child benefit rate is always higher than the tax credit rate. From 1991 to 2000, child benefits have benefited of an amount of resources that is almost twice as much that paid for tax credits for dependent children. This suggests investigating two questions. First, how much of the corresponding redistributive power of the two tools is actually benefiting the lowest part of the income distribution? Second, which tool has the greatest comparative power for unit of currency paid? In other words, if the policy maker chooses to pay additional child benefits, is she/he obtaining a greater redistributive impact compared with the case that the same unit is paid through tax credits for dependent children?

Table 3 answers both questions, by focusing on the lowest thirty per cent of households ranked by equivalent income.[7] The first three columns gives evidence of the Gini index of the income distribution in this subset of population in various hypothesis: a) income net of taxes and tax credits (excluding those for dependent children) and before child benefits (*B-NTAX*(*TCDC*)); b) income net of taxes and tax credits as before but including child benefits (*B-NTAX*(*TCDC*)+*B*); c) income net of taxes and all tax credits and after child benefits (*B-NTAX+B*). Moving from left to right across the first three columns, the Gini index decreases in each year, as additional tools are added to the income tax. The effect of child benefits and tax credits for dependent children are also separately reported in columns D and E.

[6] See table A.3 in Appendix 2, which refers to the standard scale applied in child benefit payments.

[7] To some extent, this analysis is focusing on a truncated horizontal equity criterion. Horizontal equity criterion is not necessarily linked to income levels. However, it is interesting in its own to understand how much of the total amount is actually alleviating low-income households. In the specific case, the level of equivalent income below which there is the thirty per cent of household is equal to about 57.4 per cent of mean equivalent income. This may be thought of as the implicit poverty line of the analysis.

As can be easily seen, the redistributive power of child benefits for low-income households is significantly higher than that of tax credits for dependent children in all years (the minimum is twice as much in year 2002). Figures also reveal that about 45-60 per cent of the total redistributive power of *CB* is actually falling on low-income households. On average, about 51 per cent of the total redistributive power fall in the first thirty per cent of households. On the other hand, on average, only 32 per cent of the amount of tax credits for dependent children falls on the same households. It is also worth noting that, unlike the case of TCDC, the redistributive power of child benefits in 2003 is almost the same of that of 1991. It has also followed a loss of redistributive power in mid-Nineties as a consequence of both a reduction of real resources devoted to *CB* and the loss of beneficiaries with nominal incomes over the constant nominal income limits for claiming child benefits.

According to these figures, the amount of child benefits paid to low-income households seems to have a stronger redistributive power than tax credits for dependent children. However, this does not yet take into account that resources devoted to child benefits are much higher. A more sensible measure of the relative redistributive power of the two tools is therefore to calculate the redistributive power for billion of euros. Columns F and G provides this information, while column H gives the synthesis by calculating the relative power of child benefits compared with tax credits for dependent children. As can be easily seen, child benefits were much more powerful from 1991 to 1995, where a billion of euros gave more than three times as much reduction of the Gini index compared with TCDC. This relative power has suddenly reduced in 1998 mainly because the measure of tax credits for dependent children in 1998 was 3.5 times as much that of 1995. In 2000 and 2002, but especially in the latter year, tax credits for dependent children were further increased, achieving the same redistributive power as child benefits. It is worth noting that from 2002 to 2003, even though nominally unchanged in levels, the redistributive power of tax credits for dependent children falls significantly. There are two reasons for this effect. The first, as can be appreciated from the far right column K, is that despite increasing resources devoted to them (see table 1 – fourth panel), there is also a significant increase of tax credits that cannot be claimed by low-income households. This percentage of 'wasted' tax credits increases from 24.4 per cent to 31.2 per cent from 2002 to 2003. The same percentage increases from 49.7 per cent to 68.5 per cent in the bottom ten per cent of households. While the amount of tax credits for dependent children is potentially increased by 49 per cent, the actual amount used by households increases only by 35.6 per cent. Within the bottom ten per cent of households the result is even more striking. Potentially, those households would experience a 44 per cent increase in available tax credits; however, the amount of tax credits actually used decreases by about 10 per cent.

The second reason for a reduced redistributive power of TCDC is that, in 2003, the introduction of a no-tax area for low-income households makes tax credits not claimed by relatively poorer households. In fact, the total number of households that cannot fully claim tax credits for dependent children is slightly decreased from

3.8 millions in 2002 to 3.65 millions in 2003. However, within the bottom twenty per cent of households, the number of those not fully using TCDC is increased by more than 180 thousands units, i.e. 21.6 per cent more households than in 2002.

As the no-tax area will be the structural regime of the income tax in the next years, this will cast some doubts about the opportunity of maintaining tax credits for dependent children. The same amount of money could be more profitably devoted to strengthen the effectiveness of child benefits, as their relative redistributive power, in 2003, is raised again to about twice as much that of tax credits for dependent children.

4. Poverty traps: some empirical evidence

This paragraph will address efficiency issues in delivering tax credits for dependent children and child benefits. In particular, it will compare the most recent systems in their ability to avoid poverty traps, i.e. those cases where income increases cause reduction (or loss) in tax credits or withdrawal of means-tested child benefits.

It must be recalled that a particular concern of personal income tax reforms occurred in the last fifteen years in Italy has been that of reducing the disincentive effects of high marginal tax rates. This may be the reason why the 'nominal' maximum marginal tax rate has been lowered from 62 per cent, in 1986, to 45 per cent in fiscal year 2003 and is planned to be set at 33 per cent in the next fiscal year.

However, disincentive effects, if any, depend on *effective* marginal tax rates (*EMTR*). Effective marginal tax rates are to a large extent determined not only by nominal marginal tax rates, but also by the conditional nature and the rate of withdrawal of many welfare programmes, including child benefits and tax credits for dependent children.[8] To this respect, the calculation of effective marginal tax rates is an important parameter to infer potential disincentive effects of tax systems.[9]

Before moving to this step, however, it would be useful to understand how and where poverty traps may originate from tax credits for dependent children and from child benefits. To this purpose, a simulated income distribution of earnings is used, assuming the case of married couples with one, two and three children in 1995, 1998 and 2003. In order to focus on tax credits for dependent children and child benefits all other tax credits are disregarded.

[8] Nominal amounts of tax credits for dependent children are reported in table A.2 in Appendix 2.

[9] For a similar analysis on Spanish income data comparing two tax systems (1980 and 1994), see Mercader-Prats (1997).

Figure 1 and 2 report the outcome for a married couple with variable number of children in 1995 and 1998, respectively. In these years, tax credits of dependent children are a fixed amount of money regardless of the level of income of taxpayers. When income increases, therefore, there is no jump in the marginal tax rate, as tax credits are not reduced.[10] Tax credits for dependent children, therefore, do not affect in any case the path of the nominal marginal tax rate (NMTR). On the contrary, child benefits are withdrawn at different rates when income increases. This is visible in figure 1 and 2, as all deviations from the pattern of the nominal marginal tax rates are due to withdrawal rates of child benefits. Qualitatively, poverty traps in 1998 are potentially higher, especially for the case of two and three children.

Things change when considering 2003. In this year, tax credits for dependent children depend on income levels and, as already discussed, a basic allowance is introduced. Income brackets for child benefits are also re-evaluated. Figure 3 tries to capture the interactions of these three elements. The NMTR line is again the pattern of nominal marginal tax rates. The EMTR(TCDC) bold line is now the line illustrating the pattern of effective marginal tax rates due to the withdrawal rate of the basic allowance and of tax credits. For income levels above 7,500 euros and up to 33,500 euros, the basic allowance has the effect of generating EMTRs always higher than nominal marginal tax rates.[11] In this income range, tax credits for dependent children are constant, as the same amount of money (516 euros) is given to incomes below 36,152 euros. When the basic allowance falls to zero (after 33,500 euros), the effective marginal tax rate would follow the pattern of the nominal marginal tax rates, with the exception of some points where the withdrawal rate of TCDC would cause the EMTR to jump.[12] Child benefits play their own role especially below 33,500 euros in all cases. All peaks in that range represent the potential frequency and intensity of poverty traps.

As a matter of fact, the use of TCDC in 1995 and 1998 did not produce poverty traps because of their invariance with respect to income. Qualitatively, this makes a difference with 2003, when some graduation is introduced, even though it is not likely to generate poverty traps for a significant part of the population. When child

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[10] Analytically, if the total amount of tax paid is $T = tY - TCDC$, the effective marginal tax rate will be: $\frac{\partial T}{\partial Y} = t - \frac{\partial TCDC}{\partial Y}$. When TCDC is a constant, the second term will be zero and the effective marginal tax rate will be equal to the nominal marginal tax rate.

[11] This is implicit in the functioning of the basic allowance. Formally, the mechanics of this allowance can be written as follows: $T = t(Y - D)\left(1 + \frac{D}{S}\right)$, where D is the amount of the basic allowance and S is a threshold value equal to 26,000 euros. In this case, the effective marginal tax rate will be: $\frac{\partial T}{\partial Y} = t\left(1 + \frac{D}{S}\right)$, which is always greater than the nominal marginal tax rate for $D>0$.

[12] For the case of one child, the first big jump is around 36,000 euros; the second is around 41,000 euros. They intensify and move to the right when two or three children are considered.

benefits are considered, as they are means-tested and graduated with respect to income, the frequency and the intensity of poverty traps is likely to increase, especially at low income levels. Furthermore, poverty traps have higher intensity when the number of children increases, regardless of the system analysed.

But how do poverty traps perform in practice? In practice, tax credits for dependent children and other tax credits interact in determining poverty traps. Also child benefits interact with tax credits. The real functioning of tax/benefit systems, therefore, may exacerbate some of the theoretical results so far produced working on a simulated income distribution. This is why actual data have been used to simulate the frequency and the intensity of poverty traps in the same tax systems (1995, 1998 and 2003). This simulation has been run for both first and second earners in a household, under the assumption of an equal increase of income of 516 euros.[13] The nature of income added to each earner is the same as the prevailing income observed in the distribution (e.g. earned income, self-employment and entrepreneurial income, etc.). The simulation takes into account interactions among first and second earner and interactions among all parameters of the actual personal income tax.[14]

Two different outcomes are shown in table 4 and 5. Table 4 reports the distribution of households by classes of EMTRs. Let us focus on the first panel, including the bottom thirty per cent of households. In the case additional income is gained by the first earner, in all years considered about 70 per cent of this population bears an effective marginal tax rate below 60 per cent. But in all years, nevertheless the change in nominal marginal tax rates, there is about 18 per cent of households bearing effective marginal tax rates above 80 per cent. When the additional income is gained by the second earner things do not change dramatically, with about 15 per cent of households technically in poverty traps. When all households are considered (second panel), the proportion of them bearing effective marginal tax rates above 80 per cent falls to around 10 per cent when additional income is gained by the first earner. A comparative fall occurs also in the case where the additional income is gained by the second earner. This suggests that higher effective marginal tax rates are more likely at lower income levels.

Table 5 contributes to illustrate this finding. Furthermore, it clearly illustrates that this problem is mainly caused by child benefits. The left panels report average EMTRs by deciles for both first and second earner including child benefits. The right panels give the same information excluding child benefits. Two things are worth noting. The first is that EMTRs basically follow a hump-shaped pattern in all years when child benefits are taken into account. When additional income is gained by the first earner, in 1995, on average, EMTR increases from 39.8 per cent in the

[13] This is done separately for each earner.

[14] For example, if the second earner has his/her income increased, it must be checked whether the primary earner has still right to, say, tax credits for non-working spouse or to family benefits. The microsimulation model AWARETAX performs this task only by introducing instructions about the additional income before running the tax module. The differential tax arising from this simulation is then compared with the original tax burden and the marginal tax rate calculated.

first decile to 62.3 in the third and then start declining to converge to the top marginal tax rate. Similar increases are evident also in 1998 and 2003. In the case of the second earner, levels change (they are lower) but profiles are the same in all years. This effect totally disappears when child benefits are excluded by the analysis. On average, EMTRs become much lower and steadily increasing across deciles. It means that, on average, child benefits may contribute significantly to the frequency and intensity of poverty traps. Figure 4 precisely depicts this effect, also signalling that the contribution to the average EMTRs in the first two deciles is slightly higher in 1998. The main reasons are two. First, the child benefit system of 1998 has been done more detailed than the same system in 1995. This increases the probability of falling in poverty traps. The second is that, in real terms, income limits are more stringent in 1998 than in 1995 and 2003 (when they have been re-evaluated), which moves poverty traps towards the lowest part of the income distribution.

4. Conclusions

The analysis developed in this paper sheds some light on the potential redistributive power of child benefits and tax credits for dependent children over the last ten years in Italy, as well as on their potential disincentive effects. Both tax credits for dependent children and child allowances are losing redistributive power per billion of euros significantly. In particular, the redistributive power of child benefits is in 2003 only 72 per cent of the corresponding power in 1991, if measured on the lowest thirty per cent of the population and just about 94 per cent if measured over total population. This is mostly due to the slow erosion of the real power of child benefits due to lack of indexation of both monetary amounts and income limits. If one wants to have child benefits actually playing a role within the most disadvantaged households, their value must be kept (at least) constant in real terms. Tax credits for dependent children, instead, have in 2003 only 40 per cent of their redistributive power in 2000, while their power is almost constant if measured on total population. This is mainly caused by the non-refundable nature of TCDC, preventing their full exploitation by low-income households, especially in 2003 when the basic allowance (not dependent on the number of children) has been introduced. In this year, the introduction of the exemption level has indeed increased the overall percentage of wasted tax credits to 31.2 per cent (from 24.4 per cent in 2002), while the number of households actually using those tax credits is reducing by 21.6 per cent in the first decile. This cast some doubts on the future use of tax credits for dependent children to support low-income households, but it also opens the question of how much substitutability there is between TCDC and the basic allowance recently introduced in Italy. It is also significant that from 2000 to 2003 both tools have lost some of their redistributive power, weakening the total protection to low-income households with children in real terms. Within this framework, tax credits for dependent children are relatively less redistributive than child benefits, especially at low-income levels. A billion of euros spent on child benefits gives about 1.9 as much redistributive power of the same amount spent on tax credits for dependent children. On the other hand, focusing on the efficiency side, tax credits for dependent children may perform better provided that the income intervals within which they are kept constant are sufficiently large to include as much low-income households as possible. This suggest to avoid detailed income scales in applying TCDC, which also better match the horizontal equity criterion, as it has been done in 1995 and 1998, causing no deviations from the nominal marginal income tax rate. In 2003, they are decreasing with income. Nevertheless, poverty traps are sufficiently limited by the fact that the first band includes incomes up to about 36,000 euros, slightly above the average households' income for 2003. Child benefits, instead, generate a hump-shaped profile of effective marginal tax rates, first increasing from the first to third decile and then converging to the top marginal tax rate. This suggests that more redistribution is obtained at the cost of making a significant fraction of households subject to strong disincentives in either increasing their income or in reporting it. If the main aim of child benefits is to support low-income households with children, a broad initial income band should be applied in order to avoid deviations between nominal and effective marginal tax rates. Our analysis also suggests that devoting to child

benefits part of the loss of tax revenue caused by the use of tax credits for dependent children might increase the total redistributive impact of public assistance.

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Table 1 – The redistributive impact of PIT
(Households, equivalent income).

Net taxes (NTAX)	RE	K	t	R	RE/Gini
1991	0.02758	0.17076	0.16546	-0.00067	7.5
1993	0.03113	0.18509	0.17300	-0.00089	8.5
1995	0.03123	0.17616	0.18277	-0.00097	8.5
1998 (*)	0.03441	0.14517	0.24547	-0.00122	9.4
2000 (*)	0.03683	0.16496	0.23173	-0.00140	10.0
2002 (*)	0.03631	0.16320	0.23023	-0.00126	9.9
2003 (*)	0.04041	0.19395	0.21553	-0.00139	11.0

Taxes before tax credits (GTAX)	RE	K	t	R	RE/Gini
1991	0.01754	0.08558	0.21106	-0.00052	4.8
1993	0.02116	0.09555	0.22960	-0.00078	5.8
1995	0.02043	0.09025	0.23570	-0.00084	5.6
1998 (*)	0.01746	0.05832	0.31518	-0.00092	4.8
2000 (*)	0.01755	0.06064	0.30524	-0.00096	4.8
2002 (*)	0.01767	0.06192	0.30025	-0.00092	4.8
2003 (*)	0.03421	0.15203	0.24037	-0.00233	9.3

Tax credits (TC)	RE	K	t	R	RE/Gini
1991	0.01004	-0.27254	-0.03765	-0.00022	2.7
1993	0.00996	-0.22301	-0.04603	-0.00031	2.7
1995	0.01080	-0.25668	-0.04284	-0.00020	2.9
1998 (*)	0.01695	-0.32775	-0.05300	-0.00042	4.6
2000 (*)	0.01928	-0.35138	-0.05632	-0.00051	5.3
2002 (*)	0.01864	-0.35475	-0.05385	-0.00046	5.1
2003 (*)	0.00620	-0.32919	-0.02003	-0.00039	1.7

Tax credits for dependent children (TCDC)	RE	K	t	R	RE/Gini
1991	0.00075	-0.38974	-0.00209	-0.00006	0.2
1993	0.0008197	-0.385325	-0.0021424	-0.00001	0.2
1995	0.00093	-0.379618	-0.0024807	-0.00001	0.3
1998 (*)	0.0014701	-0.4074763	-0.0036208	-0.00001	0.4
2000 (*)	0.00200	-0.41285	-0.004866	-0.00001	0.5
2002 (*)	0.00246	-0.41182	-0.00600	-0.00001	0.7
2003 (*)	0.00336	-0.39950	-0.008433	-0.00001	0.9

(§) Gini of the initial income distribution 0.367
(*) Includes central and regional income tax

Source: Authors' elaborations by AWARETAX, SHIW data.

Table 2 – The redistributive impact of PIT and child benefits
(Households, equivalent income).

Net taxes + Child benefits (NTAX+CB)	RE	K	t	R	RE/Gini
1991	0.03389	0.22179	0.15648	-0.00082	9.2
1993	0.03729	0.23360	0.16400	-0.00102	10.2
1995	0.03693	0.21783	0.17440	-0.00106	10.1
1998 (*)	0.04157	0.18282	0.23476	-0.00135	11.3
2000 (*)	0.04413	0.20634	0.22115	-0.00150	12.0
2002 (*)	0.04323	0.20263	0.22018	-0.00139	11.8
2003 (*)	0.04750	0.23908	0.20506	-0.00153	12.9
Child benefits (CB) (**)	**RE**	**K**	**t**	**R**	**RE/Gini**
1991	0.00388	-0.95064	-0.00417	-0.00009	1.1
1993	0.00379	-0.93843	-0.004125	-0.00008	1.0
1995	0.00364	-0.92098	-0.00406	-0.00010	1.0
1998 (*)	0.00569	-0.91224	-0.00629	-0.00005	1.6
2000 (*)	0.00569	-0.92923	-0.00635	-0.00021	1.6
2002 (*)	0.00539	-0.92506	-0.00604	-0.00020	1.5
2003 (*)	0.00561	-0.88870	-0.00657	-0.00023	1.5

(§) Gini of the initial income distribution 0.367
(*) Includes central and regional income tax
(**) CB includes only the "Assegno per il nucleo familiare" paid to households with children

Source: Authors' elaborations by AWARETAX, SHIW data.

Table 3 – The redistributive impact of tax credits for dependent children and child benefits on poverty. (*Households, equivalent income – lowest 30 per cent*).

	Gini 1 (*)	Gini 2 (**)	Gini 3 (***)	Redistributive power		Redistributive power per billion of euros		Relative redistributive power of child benefits	Redistributive power per billion of euros of claimed tax credits	Relative redistributive power of child benefits	Percentage of wasted tax credits
				Child benefits	Tax credits for children	Child benefits	Tax credits for children		Tax credits for children		
	A	**B**	**C**	**D=A-B**	**E=B-C**	**F**	**G**	**H=F/G**	**I**	**J=F/I**	**K**
1991	0.0658	0.0634	0.0632	0.00239	0.00015	0.00134020	0.00036334	3.69	0.00044712	3.00	18.7
1993	0.0660	0.0637	0.0636	0.00222	0.00015	0.00134777	0.00034476	3.91	0.00043566	3.09	20.9
1995	0.0657	0.0639	0.0638	0.00177	0.00016	0.00108683	0.00032643	3.33	0.00041619	2.61	21.6
1998	0.0653	0.0625	0.0621	0.00274	0.00039	0.00113425	0.00057276	1.98	0.00067844	1.67	15.6
2000	0.0661	0.0633	0.0621	0.00278	0.00117	0.00109651	0.00121315	0.90	0.00152202	0.72	20.3
2002	0.0663	0.0636	0.0623	0.00268	0.00131	0.00110936	0.00106760	1.04	0.00141272	0.79	24.4
2003	0.0660	0.0635	0.0626	0.00246	0.00096	0.00096991	0.00052254	1.86	0.00075958	1.28	31.2

(*) Gini index of income net of taxes and tax credits (with the exception of tax credits for dependent children) and before child benefits.
(**) Gini index of income net of taxes and tax credits (with the exception of tax credits for dependent children) and after child benefits.
(***) Gini index of income net of taxes and all tax credits and after child benefits.

Source: Authors' elaborations by AWARETAX, SHIW data.

Table 4 – The distribution of effective marginal tax rates

A) (first 30 per cent of households ranked by equivalent income)

Class of EMTR (%)	Additional income gained by the first earner (*)			Additional income gained by the second earner (*)		
	1995	1998	2003	1995	1998	2003
0-20	25.6	39.6	34.4	57.4	62.0	60.0
20-40	34.6	22.6	29.5	5.7	5.9	12.0
40-60	9.1	10.6	11.9	15.4	11.6	10.1
60-80	11.0	9.7	6.5	7.1	5.1	1.4
80-100	5.2	1.0	1.0	4.7	2.0	1.8
Over 100	14.5	16.5	16.6	9.7	13.4	14.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

B) (all households)

Class of EMTR (%)	Additional income gained by the first earner (*)			Additional income gained by the second earner (*)		
	1995	1998	2003	1995	1998	2003
0-20	8.0	12.3	10.6	42.8	47.2	44.5
20-40	63.6	59.5	52.4	37.2	32.2	34.5
40-60	10.9	10.8	19.4	9.2	9.8	10.4
60-80	6.7	8.1	7.6	4.3	3.5	3.0
80-100	4.3	1.7	1.9	2.4	1.6	1.2
Over 100	6.4	7.6	8.1	4.1	5.7	6.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

(§) Hp: Main income is increased by 516 euros. EMTRs are calculated taking into account both the tax and the child benefit systems.
(*) The first earner is the individual with the highest income in the household. The second earner is the individual with the second highest income in the household.

Source: Authors' elaborations by AWARETAX, SHIW data.

Table 5 – Average effective marginal tax rates, by decile
(first and second earner)

(First earner) - including child benefits

Decile	1995	1998	2003
1	39.8	56.5	44.6
2	52.4	59.8	52.7
3	62.3	67.9	68.3
4	59.5	62.6	66.8
5	47.4	48.7	51.8
6	36.6	41.1	43.7
7	34.2	39.7	42.5
8	34.1	37.1	40.7
9	34.6	36.3	39.6
10	37.9	39.9	41.6

(First earner) - excluding child benefits

Decile	1995	1998	2003
1	8.2	12.0	4.0
2	20.2	22.6	17.9
3	25.0	27.2	27.4
4	28.3	30.2	33.3
5	29.1	30.8	33.7
6	29.3	31.8	34.7
7	30.5	33.4	36.4
8	32.5	35.0	38.3
9	33.8	35.9	39.2
10	37.8	39.7	41.5

(Second earner) - including child benefits

Decile	1995	1998	2003
1	32.1	45.4	40.8
2	34.6	41.1	36.1
3	42.3	47.7	43.8
4	36.6	39.4	38.1
5	27.1	28.2	26.2
6	19.0	22.8	21.9
7	20.1	24.7	24.2
8	20.5	23.2	24.2
9	21.7	24.4	25.2
10	24.3	26.8	29.1

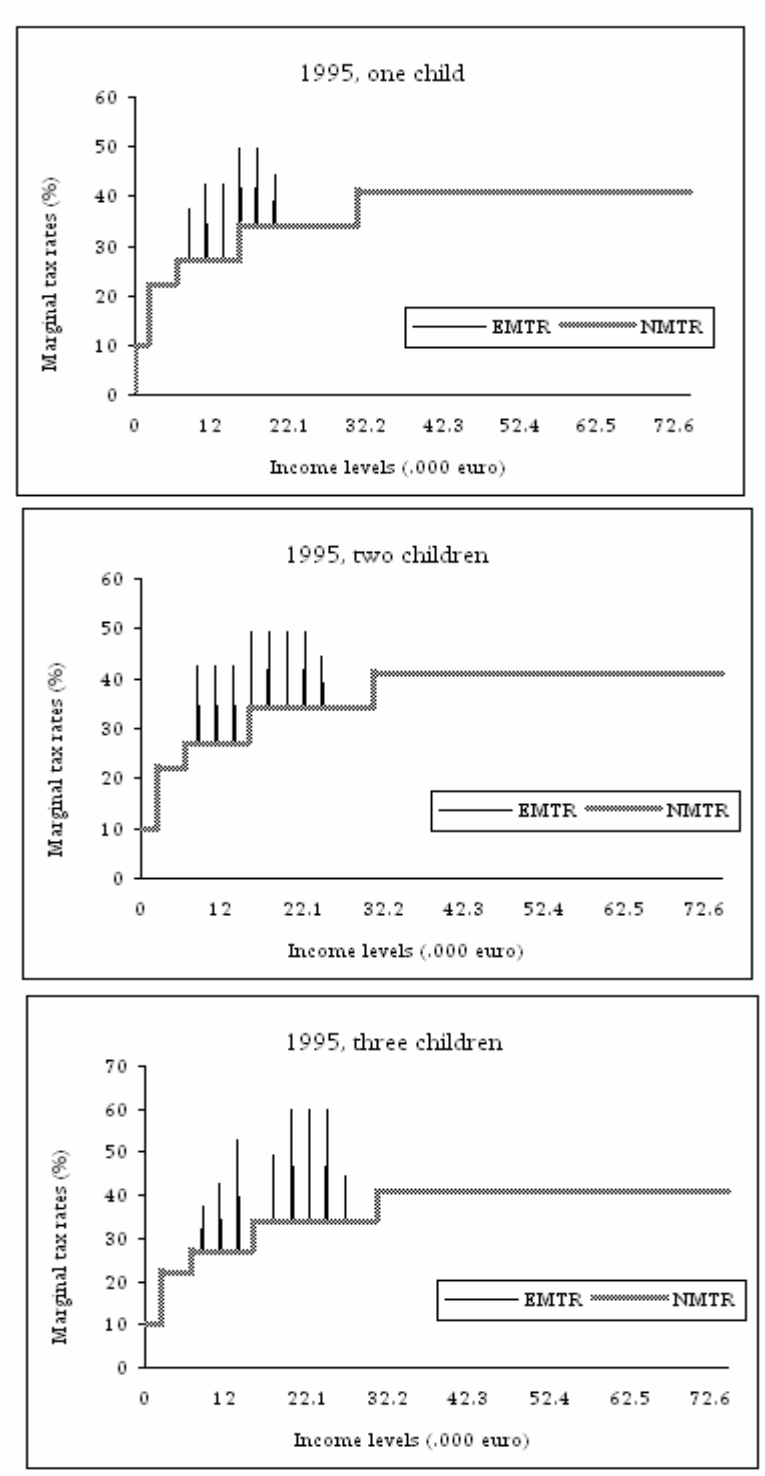
(Second earner) - excluding child benefits

Decile	1995	1998	2003
1	0.5	0.9	0.2
2	2.4	4.0	1.3
3	5.0	7.0	2.9
4	5.4	7.1	4.6
5	8.8	10.3	8.2
6	11.7	13.6	12.9
7	16.4	18.4	18.1
8	18.9	21.1	21.7
9	20.9	23.9	24.8
10	24.2	26.6	28.9

(§) Hp: Main income is increased by 516 euros. EMTRs are calculated taking into account both the tax and the child benefit systems.

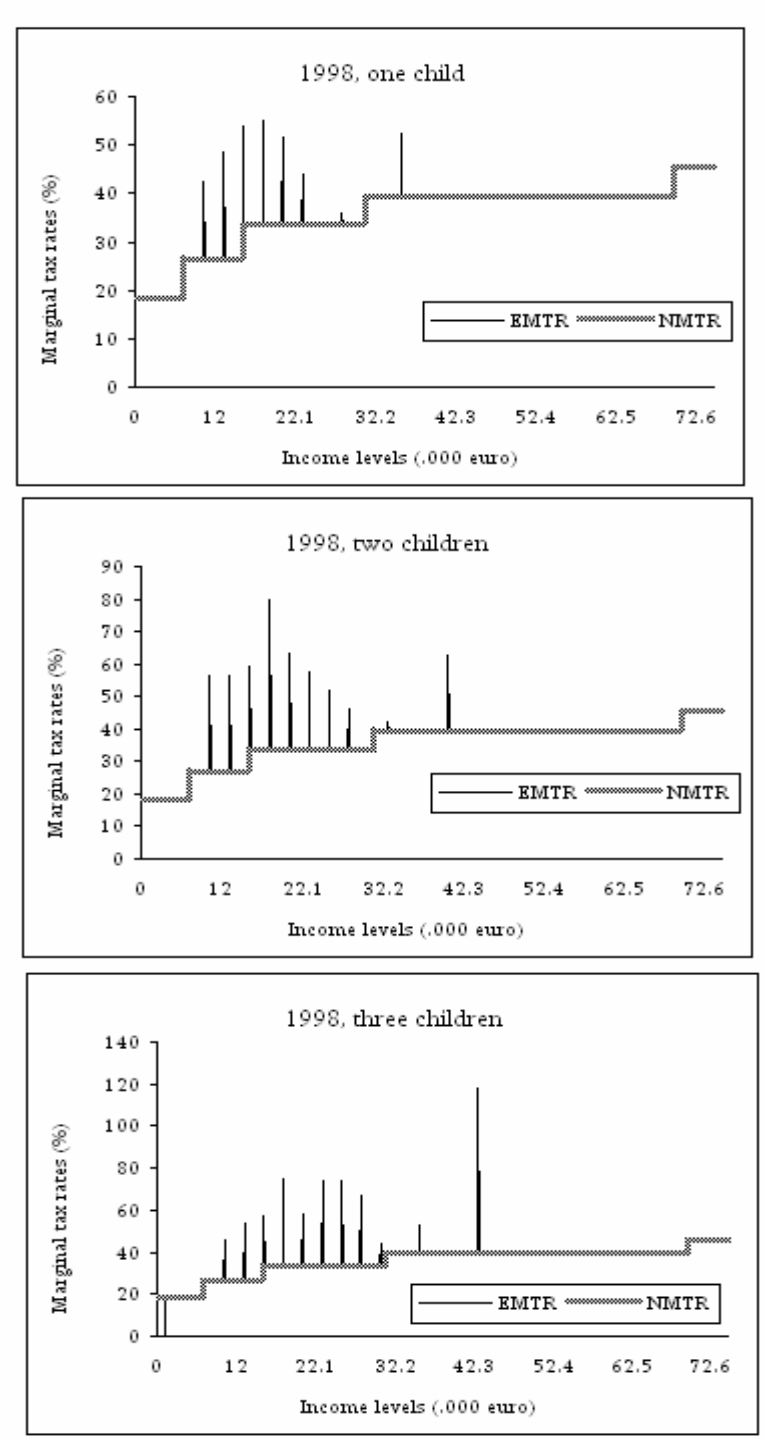
Source: Authors' elaborations by AWARETAX, SHIW data.

Figure 1 – Effective marginal tax rates, 1995
(simulated distribution)



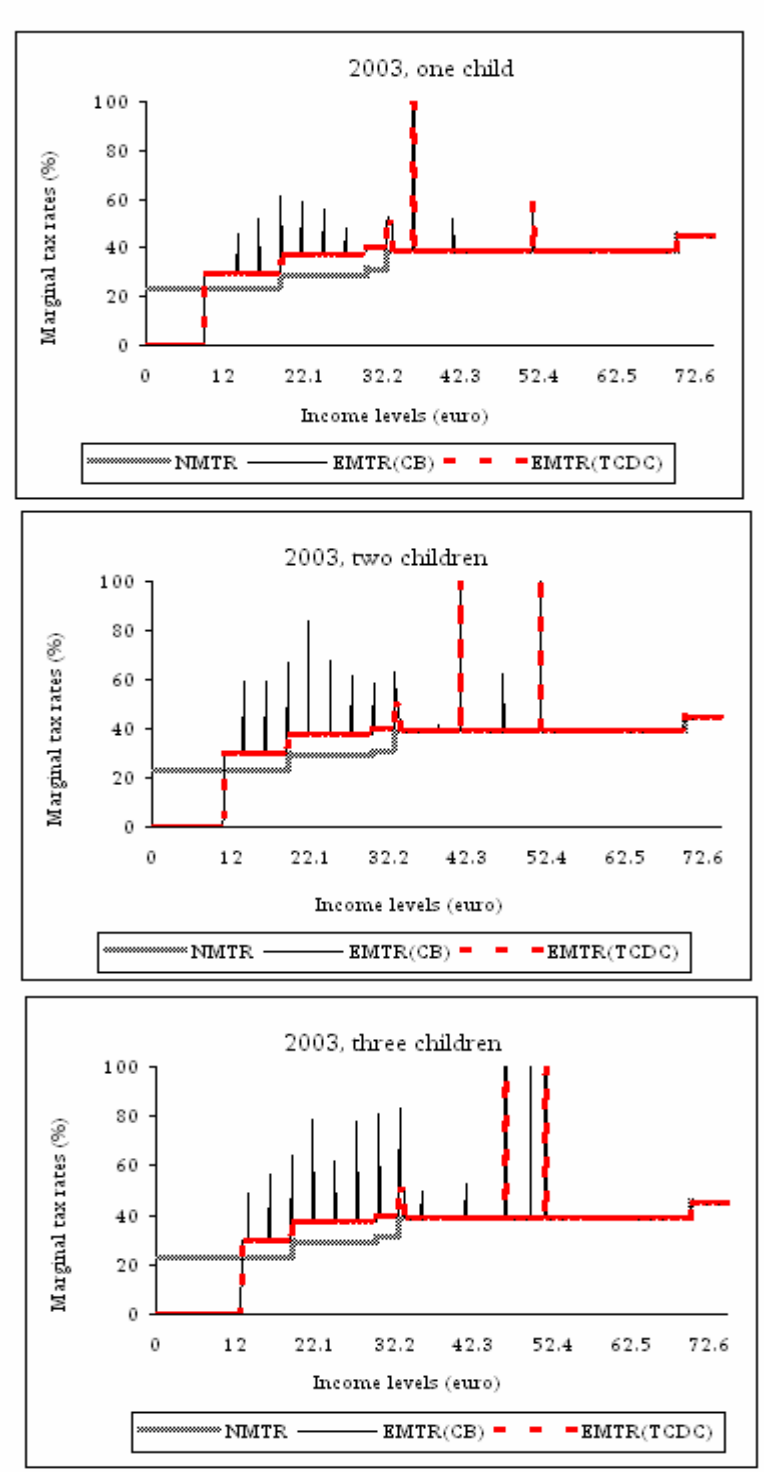
Source: Authors' elaborations by AWARETAX, SHIW data.

Figure 2 – Effective marginal tax rates, 1998
(simulated distribution)



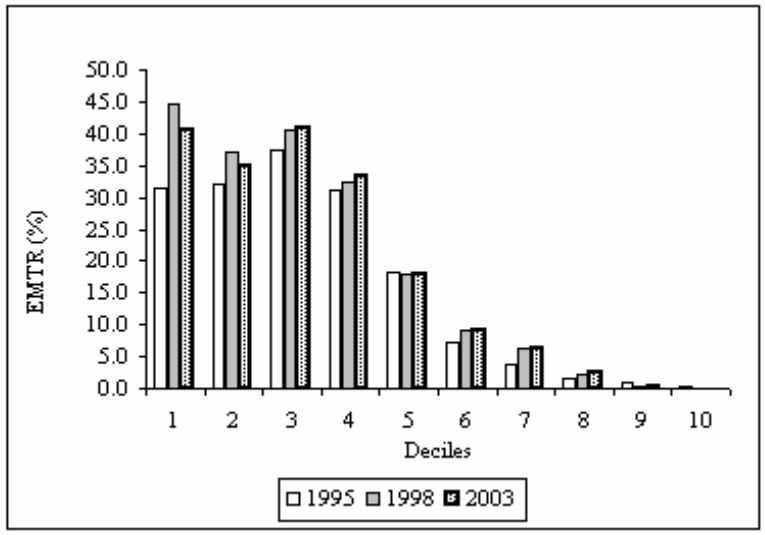
Source: Authors' elaborations by AWARETAX, SHIW data.

Figure 3 – Effective marginal tax rates, 2003
(simulated distribution)



Source: Authors' elaborations by AWARETAX, SHIW data.

Figure 4 – Variation of average effective marginal tax rates with child benefits, by decile
(actual distribution)



Source: Authors' elaborations by AWARETAX, SHIW data.

Appendix 1 – The microsimulation model

The static microsimulation model used in the paper is AWARETAX (Assessing Welfare And Revenue Effects of TAXation). The model has two modules, AWARETAX_DIR, for the analysis of direct taxes and monetary transfers, and AWARETAX_IND, for the analysis of indirect taxes. The module used in the paper is AWARETAX_DIR.[15] All simulations are based on the Bank of Italy *Survey of Household Income and Wealth* (SHIW) for 1995. This provides information on different sources of net incomes (earned and self-employment incomes; entrepreneurial income; pensions; income from immovable properties; capital incomes, etc.), as well as information on household size and characteristics. Since data are provided net of taxes, a procedure is embodied in AWARETAX to reconstruct gross incomes, calculating them as those incomes from which, after applying the tax structure, recorded net incomes can be obtained.[16] No correction for tax evasion or underreporting has been made, under the assumption that households reveals something closer to taxable income than to 'true' incomes.[17] Further, as the aim of the paper is to compare different systems of taxes and benefits at *constant population*, we only validated data for 1995 against exogenous information on fiscal and national aggregates.[18] According to this method, the differential effects of the various systems are those that would have been observed if no other change other than those related to tax and benefits had occurred. Results are therefore not polluted by modifications of the underlying distribution (e.g. population increases/decreases, changes in household compositions, etc.). The major shortcoming of this procedure is that it properly assesses the 'potential' effects of different systems rather than their real impact. To the purpose of the paper the following systems are analysed: 1991, 1993, 1995, 1998, 2000 and 2003. All systems are made comparable by inflating or deflating monetary values to 1995, according to the consumer price index.[19]

Simulations have been run considering the household income distribution. For the distribution of household income, the OECD equivalence scale has been applied by

[15] AWARETAX is a microsimulation model built by the authors at University of Rome "La Sapienza", Dipartimento di Economia Pubblica. Basic functioning of AWARETAX_IND can be found in Gastaldi and Liberati (1998), while information on the _DIR module is in Gastaldi and Liberati (2000). Full information on the model is not reported here, but specific issues can be provided by the authors upon request.

[16] As not all tax parameters can be perfectly imputed in this process, an iterative procedure has been run in order to minimise the deviations of the difference between gross incomes and taxes paid, on the one hand, and net incomes, on the other hand. Also in this case, specific information is available on request.

[17] See Gastaldi and Liberati (2000) but for a different position, see Marenzi (1996).

[18] For the *constant population* methodology see Redmond and Sutherland (1995). For an application to the Spanish case, see also Mercader-Prats (1997).

[19] This method is known as *price uprating*. However, as Redmond and Sutherland (1995; 3) argue "there is no single neutral way of uprating earlier policy regimes" suggesting that also *income uprating* may deserve attention. In the paper the price uprating method has been chosen for a twofold reason: it is consistent with the idea that tax systems should be neutral to inflation; it is the most observed practice in many countries (including Italy) to re-evaluate monetary amounts.

which the spouse (and other adults) is given a coefficient of 0.7, while a 0.5 coefficient is assigned to children.

Appendix 2 – Marginal tax rates and tax credits for dependent children

Table A.1. Nominal marginal tax rates and income brackets, 1991 – 2003

Years	Minimum tax rate and corresponding brackets		Intermediate rates and corresponding brackets										Maximum tax rate and corresponding brackets	
1991	10		22		26		33		40		45		50	
	0	6,800	6,800	13,500	13,500	33,700	33,700	67,600	67,600	168,800	168,800	337,700	337,700	
1993	10		22		27		34		41		46		51	
	0	7,200	7,200	14,400	14,400	30,000	30,000	60,000	60,000	150,000	150,000	300,000	300,000	
1995	10		22		27		34		41		46		51	
	0	7,200	7,200	14,400	14,400	30,000	30,000	60,000	60,000	150,000	150,000	300,000	300,000	
1998	18.5		26.5		33.5		39.5						45.5	
	0	15,000	15,000	30,000	30,000	60,000	60,000	135,000					135,000	
2000	18.5		25.5		33.5		39.5						45.5	
	0	20,000	20,000	30,000	30,000	60,000	60,000	135,000					135,000	
2002	18		24		32		39						45	
	0	20,000	20,000	30,000	30,000	60,000	60,000	135,000					135,000	
2003	23		29		31		39						45	
	0	29,044	29,044	56,152	56,152	63,122	63,122	135,539					135,539	
IRE	23												33	
	0	193,627											193,627	

Tax rates in percentage of income (excluding regional and local taxes)
Amounts in thousands of liras at current prices

Table A.2. Tax credits for dependent children

	income limits		Amount
1991			78
1993			88
1995			94
1998			336
2000			408 (*)
2002 (**)	0	70,000	1,000
	70,000	80,000	588
	80,000	90,000	652
	90,000	100,000	552
2003 (**)	0	70,000	1,000
	70,000	80,000	588
	80,000	90,000	652
	90,000	100,000	552

Amounts in thousands of liras at current prices

(*) 648 for children aged below 3
(**) Additional tax credits for children below age 3 and handiccaped children

Table A.3. Child benefits, standard scale, 1991 – 2003.

1991		Number of household members					
Income brackets		2	3	4	5	6	7
0	14,252	90	160	230	300	370	440
14,252	17,815	70	140	200	280	360	420
17,815	21,378	50	110	170	250	350	400
21,378	24,940	20	80	140	220	330	380
24,940	28,503		50	110	200	320	360
28,503	32,066		20	80	170	300	340
32,066	35,628			50	120	270	310
35,628	39,191			20	70	240	280
39,191	42,753				20	210	260
42,753	46,316					100	230
46,316	49,879						100
49,879							

1993		Number of household members					
Income brackets		2	3	4	5	6	7
0	15,983	90	160	230	300	370	440
15,983	19,979	70	140	200	280	360	420
19,979	23,975	50	110	170	250	350	400
23,975	27,969	20	80	140	220	330	380
27,969	31,965		50	110	200	320	360
31,965	35,961		20	80	170	300	340
35,961	39,956			50	120	270	310
39,956	43,951			20	70	240	280
43,951	47,946				20	210	260
47,946	51,942					100	230
51,942	55,937						100
55,937							

1995		Number of household members					
Income brackets		2	3	4	5	6	7
0	17,306	90	160	230	300	370	440
17,306	21,632	70	140	200	280	360	420
21,632	25,958	50	110	170	250	350	400
25,958	30,282	20	80	140	220	330	380
30,282	34,609		50	110	200	320	360
34,609	38,935		20	80	170	300	340
38,935	43,260			50	120	270	310
43,260	47,585			20	70	240	280
47,585	51,910				20	210	260
51,910	56,236					100	230
56,236	60,562						100
60,562							

1998		Number of household members					
Income brackets		2	3	4	5	6	7
0	20,293		253	485	695	953	1200
20,293	25,111		222	427	658	932	1163
25,111	29,929		179	369	606	916	1131
29,929	34,744		127	306	548	879	1094
34,744	39,563		85	216	468	789	983
39,563	44,381		50	158	421	757	946
44,381	49,199		30	111	342	705	904
49,199	54,015		30	75	263	657	851
54,015	58,832		25	50	199	615	825
58,832	63,649		25	50	178	436	772
63,649	68,468		25	45	178	299	567
68,468	73,286			45	152	299	424
73,286	78,104			45	152	256	424
78,104	82,922				152	256	366
82,922	87,740					256	366
87,740	92,559						366
92,559							

2000		Number of household members					
Income brackets		2	3	4	5	6	7
0	20,990		253	485	695	953	1200
20,990	25,973		222	427	658	932	1163
25,973	30,956		179	369	606	916	1131
30,956	35,936		127	306	548	879	1094
35,936	40,921		85	216	468	789	983
40,921	45,903		50	158	421	757	946
45,903	50,887		30	111	342	705	904
50,887	55,868		30	75	263	657	851
55,868	60,850		25	50	199	615	825
60,850	65,832		25	50	178	436	772
65,832	70,817		25	45	178	299	567
70,817	75,800			45	152	299	424
75,800	80,783			45	152	256	424
80,783	85,766				152	256	366
85,766	90,750					256	366
90,750	95,734						366
95,734							

2002		Number of household members					
Income brackets		2	3	4	5	6	7
0	20,990		253	485	695	953	1200
20,990	25,973		222	427	658	932	1163
25,973	30,956		179	369	606	916	1131
30,956	35,936		127	306	548	879	1094
35,936	40,921		85	216	468	789	983
40,921	45,903		50	158	421	757	946
45,903	50,887		30	111	342	705	904
50,887	55,868		30	75	263	657	851
55,868	60,850		25	50	199	615	825
60,850	65,832		25	50	178	436	772
65,832	70,817		25	45	178	299	567
70,817	75,800			45	152	299	424
75,800	80,783			45	152	256	424
80,783	85,766				152	256	366
85,766	90,750					256	366
90,750	95,734						366
95,734							

2003		Number of household members					
Income brackets		2	3	4	5	6	7
0	26,233		253	485	695	953	1200
26,233	31,610		222	427	658	932	1163
31,610	36,984		179	369	606	916	1131
36,984	42,361		127	306	548	879	1094
42,361	47,739		85	216	468	789	983
47,739	53,115		50	158	421	757	946
53,115	58,491		30	111	342	705	904
58,491	63,867		30	75	263	657	851
63,867	69,242		25	50	199	615	825
69,242	74,621		25	50	178	436	772
74,621	79,998		25	45	178	299	567
79,998	85,372			45	152	299	424
85,372	90,750			45	152	256	424
90,750	96,127				152	256	366
96,127	101,506					256	366
101,506	106,882						366
106,882							

Amounts in thousands of liras, current prices