1 – Introduction

In the past twenty years many European and OECD[1] countries have accomplished tax structure reforms. In many cases one of the policy objectives was, and still continues to be it, to decrease the total tax burden in the economy, redistributing in some way the gains over tax units.

In this paper it presents some methods to redistribute the gains (or losses) of a tax reform and a procedure to identify the value judgements according to the tax reform outcome; they will be useful to analyse the first proposal of personal income tax (IRPEF) reform presented in Italy by the current Executive on 21 December 2001. In the past years also in Italy a reorganization of current income tax code was operating and, in contrast, this proposal chooses to modify it radically. IRPEF provides around ¼ of the total revenue for the government and is around 15 percent of the total GDP. The Italian Constitutional Law states that IRPEF had to be progressive, hence in some way it has to allow to redistribute a given amount of income from the richer component of the population to the poorer one.

The rest of the paper is organized as follows. First I present a review of the principal results of the literature concerning the rationales for a progressive income tax, especially by looking for the normative significance of outcomes of a tax code, as well some indexes able to summarize the redistributive effect and departure from disproportionality (that is, how much the tax burden is differently distributed than income between the population of income units).

In section 3 I offer an empirical survey. As we shall see, after the proposal was announced many practitioners have investigated its possible redistributive consequences. The principal outcome will show that 'the redistribution continues to go from the richer group to the poorer, but with a reduction of intensity'. Section 4 concludes the paper by a deeper theoretical analysis of the design of the original tax reform, showing how theoretical instruments can be used to verify the degree of the progression of tax structure and resultant distributive effects.

In accordance with these effects, it seems that there could be some reasons for changes in the structure of the tax reform proclaimed more recently by the current Executive. Other contributions (Baldini and Bosi, 2004) study the effects of these changes, affirming the presence of a lower 'reduction of intensity'. However, the principal conclusion does not modify so much: the Executive main interesting appears to be the relationship between the tax cut and the expenditure side of budget (how large does it would become the public spending

[1] - Organization for Economic Cooperation and Development.

deficit? Is this acceptable?) and how the tax cut affect the economic growth, rather than which distribution of income.

2 – A Progressive Income Tax Schedule: Theoretical Results

The large majority of European and OECD countries have a progressive income tax. Given the respect, or not, of horizontal equity (HE) prior principle (a normative goal) "progression arises from principles of vertical equity" (Lambert, 2001, p. 175): vertical equity states taxpayers in unequal circumstances bear appropriately unequal taxes (a matter of judgment, that is an ethical norm referring to the treatments of unequals)[2].

The literature suggests some rationales, for instance the Equal sacrifice principle (by using an increasing concave utility of income function equal for all individuals, this calls for a equal utility loss for all)[3] as well as the Benefit principle (by relating the tax liability to the expenditure side of budget)[4]; the automatic stabilizing effect on the macro-economy; the envy reducer capacity.

After the seminal Atkinson (1970) and Shorrocks' (1983) papers another way to justify progression was on hand to the researchers: I shall give an idea about it referring to the papers where it is opportune. Before to do that I provide some definitions about what it defines as a progressive income tax as well as some other useful instruments.

2.1 Some Definitions

An income tax schedule embodies a succession of upward and fixed marginal tax rates (the *rate structure*) on bands of taxable income with different specified threshold values.

If $t(\mathrm{x})$ is the tax liability[5] of the pre tax money income x and is a differentiable function, an increasing with income average tax rate $t(\mathrm{x})/\mathrm{x}$ is the condition for strict progression

$$\mathrm{d}\,[t(\mathrm{x})/\mathrm{x}] \,/\, \mathrm{dx} > 0 \quad \forall \mathrm{x} \quad \text{iff} \quad t'(\mathrm{x}) > t(\mathrm{x})/\mathrm{x} \quad \forall \mathrm{x} > 0$$

In this case the tax burden is function only of money incomes while the typical real income tax code usually is also function of other features: we shall see how to take account of these non-income characteristics.

[2] - In a second best-world there is a potential trade-off between HE and VE objectives (see Musgrave 1990).
[3] - See Samuelson (1947).
[4] - See Head (1964), Snow and Warren (1983).
[5] - I assume $0 \leq t'(\mathrm{x}) < 1$ (incentive preservation principle), then $0 \leq t(\mathrm{x}) < \mathrm{x}$ (where $t'(\mathrm{x})$ is the first derivative).