Taxation and the Distribution of Income

Income tax and progressivity

Example: Income tax in Italy

National income tax

National income tax is levied at progressive tax rate on all income reported below.

Taxable income (EUR)		Tax on excess (%)
Over	Not over	
0	15,000	23
15,001	28,000	27
28,001	55,000	38
55,001	75,000	41
75,001		43

- Average tax rate: T/ (Total income)

- Marginal tax rate: marginal variation of the tax according to the income variation
  - $\Delta T/\Delta RC>0$
  - $\partial T/\partial RC>0$

Progressive tax:

- Average tax rate is increasing in the income
- Marginal tax rate>average tax rate

Tax incidence =average tax

- **Tax deduction** is a **deduction (reduction)** of the taxable income
  - Charitable contribution deduction
  - Pension contributions

- **Tax credit** is the reduction in the income tax the taxpayer must pay
  - tax credit for dependent job is 20% in Italy
  - Health expenditure
  - Mortgage interest rate (in Italy 19%)

Exercises

Consider a marginal income tax *t* of 20% and a tax credit of *d=1*. The yearly income of Mr A is 60.

A) Compute the Average tax

- NO deduction so taxable income = 60.
- T(A) = 0,2 *(60) -1 = 11.
- AT= 11/60 = 18,33%.

B) Show that the tax is progressive.

- A progressive tax implies the AT increases with the income. Consider generic income y.
- T(y) = 0,2y-1.
- AT=(0,2y-1)/y = 0,2-(1/y) that increases in y.
- Note that the AT converge asymptotically to the marginal tax t=0,2.

C) Determine the tax deduction, D, that applied alternatively to the tax credit, gives an equivalent amount of due tax.

- This would occur if at the same revenue will correspond the same amount of tax
- Since *d=1*, we must solve T=(0,2y)-1= 0,2(y-D), that gives D=5.