

The paper presents two theoretical results concerning the redistributive effect of three types of fiscal reform on inequality and show an empirical example of them using Spanish data. In particular, the manuscript focuses on the idea of shifting tax burden from the vast majority of the population (bottom 99%) to a small share of wealthy individuals (top 1%). The three reforms considered are revenue-neutral reforms that increase/decrease the tax due: *a*) proportionally to tax paid, *b*) proportionally to the net income, *c*) proportionally to gross income earned.

The paper shows a rather intuitive result: redistributing money from the top incomes to the bottom of the distribution one will generally reduce inequality. However, depending on how the reform increases the taxation of individuals in the top and how it reduces the amount paid by those at the bottom, it is theoretically possible to have the opposite result (inequality in the net incomes goes up). But this is ruled out for reforms that modify the tax liability consistently in the two groups.

Then the authors show that, when the rich group is very small (less than 1%,  $p \rightarrow 0$ ), the redistributive effect of the three possible reforms can be ranked as  $b > c > a$ .

An empirical illustration based on Spanish data follows.

### **Comments**

As far as the motivation is concerned I do not really understand why one should be willing to implement a policy that redistributes from the particular group of top 1% earners to the rest of the population. We know that polarization is increasing in many countries, nevertheless it is hard to accept that the contribution individuals are asked to pay in order to redistribute should have a discontinuity at a particular point of the income distribution. Why being the richest individual among the bottom 99% is so different than being the poorest of the top 1%? In the empirical application proposed, the paradox is clear, the two individuals have exactly the same income (table 1 page 10). However, according to the authors, one should obtain a tax reduction and the other a tax increase.

One way to make the manuscript more attractive (and policy relevant) would be to focus on different type of groups. The partition into groups could be based on something different than the quantile of the income distribution. For example, if groups are based on different access to productive assets or to different capabilities, one could claim that heterogeneous treatment of groups is justified. The derivation of the theoretical results is likely to be a little more complex (one cannot get rid of the overlapping term  $R$  in the Gini decomposition).

Concerning the theoretical section: something that remains unclear is whether one or more of the nine reforms can create re-ranking between individuals originally belonging to different groups. This is ruled out by assumption at the end of page 4. However, if this is imposed, then the reforms can no longer be described by the formulas *i*), *ii*) and *iii*) in page 5. Under rather general conditions applying such reforms to the two groups will re-rank some of the incomes (see again table 1 page 10 where richest individuals getting a reduction earns exactly the same amount earned by the poorest individual getting a tax increase). Again, re-ranking implies the need to revise and check whether all propositions still hold.

One of the theoretical conclusion is that it is possible to rank the three reforms in terms of redistributive effect, provided that, instead of considering the 1-99%, the top earners' group is shrunk sufficiently (its % approaches 0). However, I wonder what is the practical relevance of proposition 3: after all, when  $(p \rightarrow 0)$  the redistributive effect of all reforms tends to be zero.

The empirical illustration is based on a simplified tax scheme which does not correspond to the tax function in place in Spain. The reader may wonder how different is this from the real fiscal system. The authors may consider providing some additional information about the differences.

### *Minor points*

- Page 4: if the number of groups is  $k$ , it should not be used as index
- Page 4 line 5: remove "(average)"
- Page 4: "R represents an extra term to make the decomposition work
- when the subgroup income ranges overlap" is a rather imprecise sentence. It should be rephrased with exact reference to the definition of additive decomposability the authors have in mind
- Page 5, beginning of section 2.2, I cannot get the meaning of the sentence. Increase of what?
- Page 6, title of section 3, pit should be PIT
- Make sure that each term used corresponds to a precise definition, i.e. RS index = redistributive effect
- Page 10 beginning of section 4: the authors may avoid repeating again what  $aa'$ ,  $bb'$ ,  $cc'$  mean
- Page 10: is "disseminate" the correct term here?
- Page 10 table 1: what is the difference between EUR and €?
- Page 12: as-l-increases, of-l (spaces missing)

- Page 12 figure 2: the authors may find a different way to show the same information which are not immediate to grasp at first glance. Moreover I suppose here the authors should cite the source of the data.
- Page 13 and 13: the authors may want to avoid using bullet points and large number of parenthesis in the concluding section.