"**Boats and Tides and “Trickle Down” Theories: What Economists Presume about Wellbeing When They Employ Stochastic Process Theory in Modeling Behavior**"

Summary

In this paper it is questioned to what extent the “Rising tides raise all boats” and “Tickle down” mechanisms that relate growth and income distribution hold both in theory and in empirical applications. To this end the author analyses several type of stochastic process for income distribution (Gibrat’s Law, Kalecki’s and Pareto’s) and check which is the relationship between growth and some absolute and relative measures of poverty, inequality and mobility under each income process. Additionally, the author proposes to consider the population distribution of income as a mixture of different income distributions each of them corresponding to the different population’s income groups, and analyses income poverty measures more appropriate for this type of modeling. The main result is that the link between growth and poverty or inequality really depends on the type of underlying process assumed for income and the particular measure for poverty or inequality. Finally, the author proposes an application of the previous theoretical results to some African countries’ income data for the last 20 years. It is found that the behavior of different poverty and inequality indicators respond to a Gibrat’s law, thus suggesting that the income distribution is log-normal. In addition the hypothesis of the aggregate population income distribution being described as a mixture of two distributions: one poor countries and another one for rich countries is not rejected by the data.

Comments

In my view the paper analyses a very interesting question. However I do have some concerns regarding the results and exposition.

1.- My main concern on the analysis of the paper is the absence of unambiguous and clearly stated results. Results presented in Section 2 are just based on some particular stochastic process. In addition there is no proposition where the author states the main result. The author should try to provide more rigorous proofs of the statements. In the current version, the reader has to spend some time looking for the equation that corresponds.

2.- I found some parts of the paper too technical and I missed more economic intuition. First, regarding the economic rationale behind the different stochastic process proposed and second, regarding the implication on poverty and inequality measures of those process. In this context, one wonders if the paper has any solid implication for policy analysis. This is particularly important given the topic of the paper.

3.- The paper, in its present form, is too hard to read. I believe that the paper could be immensely improved by presenting the different income process in a more systematic fashion, and also by more formally defining the measures of inequality, poverty and mobility. In addition, after reading Sections 2 and 3 the reader must know which are the main theoretical findings and thus the specific hypotheses that are going to be tested in the empirical application.

Additional comments on the paper's text are the following:

a) The introduction needs a lot of work. It is not focused. It is not clear enough for the reader what the aims are, the current state of the most related literature, the results and therefore to what extent this paper contributes to the literature.

b) I suggest the author presenting the concepts of "rising tides raise all boats" and "trickle down effects" more formally. As it is the aim of the paper to check their validity, from a theoretical and empirical point of view, it is of special relevance to describe them more profoundly and clarify the underlying assumptions behind both mechanisms (and the empirical evidence supporting those assumptions). This is crucial in order to better understand the economic reasons why in general those mechanisms do not seem to operate (one of the results in the paper).

c) One of the strengths of the paper, in my view, is the analysis presented in Section 3. I think it is a rather novel approach to understand the properties of the distribution of some aggregates variables in the population. In this sense I think that income might be just an application and thus the author could try to provide a more general analysis of mixture distributions. Another application might be the study of human capital distribution in the population, for which there is evidence that different process govern the distribution of human capital for individuals with different economic background (see Heckman (2006)).

d) I found it very interesting the empirical application. Nevertheless, the "rising tides raise all boats" and "trickle down effects" are usually understood as "income" transmission mechanisms among individuals rather than countries. One of the reasons for that association is the existing empirical evidence regarding the existence of human capital externalities among individuals (see, for example, Moretti (2004)). I suggest the author to comment on this point. This might help to understand, for example, to what extent the results hold had the data be individual level instead of country level.

e) Minor comments:

- The author should number each and every equation.
- The contents of figures are not sufficiently described in the text. I suggest numbering them too.

References

Heckman, J.J. (2006) “Skill formation and the economics of investing in disadvantaged children” *Science* 312 (5782):1900-1902.

Moretti, E. (2004) “Estimating the social return to higher education: evidence from longitudinal and repeated cross-sectional data” *Journal of Econometrics* 121: 175-212.