

Boats and tides and "trickle down" theories: what
economists presume about wellbeing when they employ
stochastic process theory in modelling behavior

Economics 2012-28

July 24, 2012

Summary: In this paper, the author bridges stochastic process theory with the measurement literature on poverty and inequality. This is a fruitful exercise as stochastic process theory is an important lens through which many (growth) economists look at distributional issues. In particular, the paper highlights that popular optimistic conclusions (“rising tides lift all boats” and alike) do not follow straightforwardly from the commonly made assumptions in stochastic process theory.

Most of the results obtained in the paper have the following structure: conditional on the incomes in a (subgroup of the) society following a stochastic process described by α , the incomes will be distributed according to distribution β and hence measure γ will have a certain evolution over time. Thereby α typically belongs to {Gibrat, Kalecki, Pareto}, β to {Lognormal, Pareto} and γ to {absolute/relative poverty, absolute/relative inequality, polarization, mobility}. Clarifying and bringing these results together has a large pedagogical merit. The results are illustrated based on African country-level data.

General comments:

1. As this paper bridges two different literatures, it is important that the concepts, terminology and jargon used on either side of the bridge are also clear for the “other side”. I have the feeling that the paper could gain in sharpness along these lines. I had to dig deep in my (incomplete) memory of time-series econometrics to remember what a co-integration factor is, and probably the subtleties of the difference between a polarization and an inequality measure or between an absolute and relative measure of inequality may be missed by someone with a background in

time-series analysis. Some definitions and gentle conceptual reminders could have helped me.

2. The theoretical results open some new questions. To list a few: Why can the incomes be assumed to follow stochastic process α ? What is the connection to micro-economic theory? What is the role for policy? Can we reverse engineer the link between α and β to understand better the stochastic process underlying empirical well-performing size distributions of income like the Singh-Maddala and the Beta distribution? What can we do with the predictions of these models? How pertinent is the Lukas' critique here? Given the length of the paper, the current paper is probably not the best place to address these questions, but hinting or alluding at these and similar open questions could be helpful (in particular if they have been addressed elsewhere in the literature).
3. I find the analysis in section three thought-provoking and refreshing. The identification of the poor based on the stochastic process generating their incomes rather than a (monetary) cut-off is interesting and seems, to the best of my knowledge, novel to the economic approach to poverty measurement. At first sight, there seem some echoes of sociological approaches, though. Simmel (1965, p.138), for instance, wrote "The poor, as a sociological category, are not those who suffer specific deficiencies and deprivations, ... Poverty cannot be defined in itself as a quantitative state, but only in terms of the social reaction from a specific situation." The logic of the section, however, seems somehow to be betting on two conceptual horses as the monetary cut-off identification of the poor reappears later in the section. These parallel concepts of poverty may confuse some readers (at least it does with me).
4. Honestly, the empirical part of the paper is not my favorite part. First of all, a couple of introductory sentences could have helped me understanding which hypothesis is exactly tested or how the empirical analysis can falsify (or illustrate) the theoretical results described above. Second, I think that the use of country-level data should be justified (in particular for the poverty analysis). Using the 1\$/day poverty line (or 60% of the median income) based on a smoothed distribution based on 47 country level income averages seems a quite crude approach of measuring poverty (changes in within-country inequality are not picked up, for instance). I suspect that the results are quite dependent on the selected smoothing technique. (Can we interpret the chosen Kernel function and bandwidth to play somehow the role of the unknown within-country distribution? Why is a symmetric quadratic function our best guess?) If I am not mistaken the micro-data necessary for this analysis are available from Povcal (<http://iresearch.worldbank.org/PovcalNet/index.htm>).

Detailed comments:

1. Title: 1) Wellbeing as a concept could be defined more sharply in the paper, at least for my taste; 2) Apart from page 2, not much behavior is modelled in this paper.
2. page 2, $C(t)$ is not defined.
3. page 3: ζ is the coefficient of relative risk aversion? Am I right that on this page the symbol g is used for two different things?
4. page 6: A reference to Kolm (1969)'s early contributions on absolute inequality measurement seems appropriate here.
5. page 8: In my view, a basic income (Van Parijs 1995, for instance) may be an alternative (better) example of a reflective lower boundary, given the wide meshes of the social security safety net (for instance by the non-take-up of social benefits due to stigma reasons etc. (Moffitt 1983)).
6. page 11. What is w_t referring to?
7. page 13: I am a bit confused by the sentence "... location normalized inequality measures will diminish with positive growth and diminish with negative growth since the Gini coefficient may be written as ... ". I could use a hint to understand the logical consequence.
8. page 14: This approach of measuring social mobility could have been embedded in more detail in the literature.
9. page 16: I don't understand fn 11.
10. page 17: I can be wrong, but don't the theoretical distributions have common support (and hence everybody is transitorily poor)? Anyway, I seem to be missing something here and could use some more explanation on the formula defining TP .
11. page 21: Can b be interpreted as a richness line in the sense of Peichl et al. (2010)?
12. page 22: For my taste, this theoretical section ends rather abruptly. On the contrary I liked the summary provided by table 1 at the end of the second section.
13. page 23: Some readers may find it useful to link the discussion on population weighted versus non-population weighted GDP figures (and the use of micro-data) to the distinction suggested by Milanovic (2005) between concept 1, 2 and 3 for global inequality.

14. page 24: which bandwidth has been used for the kernel estimation?
15. page 26: For someone not familiar with these χ^2 tests of a functional specification, some more explanation on how these numbers are to be read can be useful. (Aside, probably a representation with less decimals increases the readability of the table).
16. page 31: The finding that there are two groups of countries in Africa, each with different underlying stochastic processes and increasing polarization between them is interesting and very relevant.

References

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