

Referee report for MS 2529: “Income inequality and saving in a class society: the role of ordinal status”.

Short summary

The paper studies a two period model where agents are endowed with an exogenous and heterogeneous income and must decide their consumption levels in the two periods. Agents get utility from what they consume but they also care about the rank they occupy in the consumption distribution that emerges in period 1. The author focuses on a pooling equilibrium which features 3 different social classes and studies how some changes in the distribution of consumption (across the board income growth, reduction in income inequality) affect agents’ well-being and saving rates.

General assessment

The paper fits well the topic of this special issue and it is very well written. The introduction does a good job in presenting the research question(s) and the model is clearly illustrated. The analysis is competent and the results are correct, although in my view a bit limited in scope, as they are derived under rather specific assumptions (see more on this below) and the analysis is restricted to a particular setting (a specific pooling equilibrium of the game). As such, one may question their robustness and thus the validity of the policy implications that the author derives. To be fair, results are often rather inconclusive (see for instance Sections 4 and 5) even in the specific environment that the author considers. In what follows, I offer some advice on how the author could improve the paper and the exposition of the results.

Main comments

- My main concern has to do with the definition of the rank an agent occupies in the consumption distribution. The author postulates that the social rank of an agent is given by the fraction of consumers with strictly lower or equal levels of first-period consumption. Formally:

$$R^i = \frac{\#\{j \in \mathcal{N} \setminus \{i\} \mid c_{(1)}^j \leq c_{(1)}^i\}}{N - 1}$$

I am not that convinced by the “equal” part. It means that agent 1 would have the same rank ($R^1 = 1$), and most importantly enjoy the same “rank-dependent utility”, in two economies that are very different in terms of income/consumption distribution, say economy 1 where $c = (100, 100, 100, 100)$ and economy 2 where $c = (100, 60, 50, 20)$.¹ Arguably, the social status that agent 1 enjoys in the two economies is different. Incidentally, the formulation is also slightly inconsistent with what the author says a few lines before when he introduces the notion of ordinal rank: “Striving for a higher position is then like racing: one only has to be faster than the others”, since here one has to be not slower than the others.

I understand that this specific formulation comes from a precedent paper. I also appreciate the short discussion and list of references that the author provides on page 6. However, considering that this specific formulation does not capture some relevant patterns in terms of status (rat-race effects, status-seeking behavior) and it has important implications on the results (for instance the tendency for agents to exactly conform to the consumption level of the trend setters, and thus give rise to pooling equilibria), I would like to see a more careful discussion of the issue. The discussion should possibly also include an assessment about how crucial

¹Both economies consist of 4 consumers and the first number refers to the consumption level of agent 1.

is the formulation (i.e., is it possible to say something about how the results and implications would change if rank is defined as above but with strict inequality)?

- The author says that the number of consumption standards, and thus of social classes, is endogenous. But that's not very clear. Indeed, it looks kind of exogenous as the author decides to focus on a setting that features 3 social classes (see page 9: "...fix three integers e_L , e_M , and e_U ...", are these numbers arbitrary and exogenous?).

- The comparative statics that the author performs (see from Section 3 onward) are interesting but rather specific. As such the titles of the sections may be a bit misleading. In Section 3 the authors considers what happens when everyone's income rises with the same percentage ($w^{i'} = zw^i$ with $z > 1$) but there are other ways in which income can grow for everyone (and thus be consistent with the title of the section). For instance, the entire distribution can shift to the right ($w^{i'} = w^i + \Delta$) in which case I guess nothing would happen. By the way, and still focusing on the scenario under scrutiny ($w^{i'} = zw^i$), are the implications of the model symmetric in case income decreases (i.e., $z \in (0, 1)$, this could be the case in a recession/economic crisis)?

- Given that one of the main research question that the paper pursues is the analysis of the consequences of income/consumption inequality, the author may perhaps try to say something more about the effects of redistribution (i.e., taxation). In this respect the author only considers quite a peculiar redistribution scheme (see Sections 4 and 5) where only a subset of the "poors" (resp., "rich") gain (lose) in terms of income. However, redistribution is usually assumed to shrink the entire distribution of disposable income, i.e., to affect all agents. The author may consider such a scheme, which could possibly lead to more precise results. More in general he should better relate, or at least justify/rationalize, the redistribution scheme that he chooses to implement in light of agents' preferences and voting behavior. There is

a growing literature which studies the effects of social status concerns on individual preferences for redistribution (see for instance Levy and Razin - AEJmicro 2015, Koenig, Lausen and Wagener - wp 2017, Gallice and Grillo - wp 2018) and the author may want to have a look at it.

Minor comments and typos

- On page 8 (central paragraph), the author argues that the consumption level of two individuals with different income in a pooling equilibrium is *at least* equal to the utility maximizing quantity of the agent with the highest income. Then, I guess that to close the argument the author should also argue that it is indeed equal to that level.
- There is a misspelling in footnote 9 (generally vs. generell).
- I do not find the notational choice of using e to denote income groups (say e_L) particularly fortunate. e does not really make a reader think about income. By the way, what is the upper bound on e_U (beginning of page 9. More in general that paragraph is not crystal clear. What does it mean that N has to be large enough?). And going back to the end of page 7, why does the author use e_U (where, given page 9, U should stand for upper, I guess) to denote any generic income group?
- In expression (20), and then also two lines below, in the denominator the term θr_L must be at the level of w not at the level of the subscript.
- Figure 1 is not very clear. The author may want to improve it, perhaps by changing the numerical example and/or the scale such as to better highlight what is going on. A legend may also help.