Review of: "Necessity of budget deficit in a growing economy where people hold money and leave a bequest"

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Potential competing interests: No potential competing interests to declare.

Referee report on “Necessity of budget deficit in a growing economy where people hold money and leave a bequest”

The paper attempts to demonstrate that under some circumstances, it might be possible that a budget deficit would be a necessary condition in order for such a model economy to have full employment. Although the question in itself is interesting (though a more appropriate question would be “under what conditions is a budget deficit necessary in order for an OLG economy to have full employment?”) It is the opinion of this referee that the paper does not prove what the author claims it proves, and several elements of the model are incorrect/incomplete. Specific comments referencing these issues follow.

1. The author never defines what is the equilibrium concept used for this model. Are agents rational in this model or not? It appears that the author is not using rational expectations (see next point). Thus what type of expectations are being used is never defined.
2. The paper assumes that up to period t-1 prices are constant. This is incorrect under rational expectations. In models with money and rational expectations and no other frictions, prices are typically a forward-looking variable and thus current prices depend on expectations for the future on money growth as well as the growth of the economy. Thus finding the current price level should be an endogenous variable, as opposed to what the author assumes. If prices were to be sticky somehow, there are no microfoundations to show how sticky prices would result in this model.
3. The author claims that for full employment a budget deficit is necessary. But in addition to other issues identified, how employment or unemployment results (e.g. there could be a matching framework) from the model is completely missing.
4. Even if somehow the price level could be assumed to be completely sticky, assuming that the price level would remain constant is an assumption very hard (impossible in my opinion) to defend as in 2-period overlapping generations model as a period represents about 25 or 30 years when calibrated. Thus assuming that prices can stay constant while the economy is growing is something that would be unnatural to assume over the 25 years or so that a period represents. Not only that, but if money is neutral as it would be expected in this type of model, a growing economy with a fixed amount of money would typically yield a decreasing price level (deflation) forever, again making the assumption of constant prices incorrect.
5. The author refers multiple times to his own work. It would be important to consider other advances in OLG models from other authors. Starting for example with the book of Acemoglu (2008) and the references therein would be a good

start.

6. The maximization problem appears to be incorrect in the following. The lagrangean program is the same for employed and unemployed people (but again unemployment is missing from the model), where the only difference is that the author claims that average values (averaging over employed and unemployed individuals) are used in the maximization process. This is incorrect in that (assuming that unemployment and employment are properly defined, currently missing from the model) in that it is not the same to maximize utility given that the agent is unemployed versus the maximization problem if the agent is employed. Then the author would need to show that the interaction in the economy between these types of agents would result in only having to keep track of average variables (which is not guaranteed). In other words, averaging the optimized saving functions (or labor supply or other variables) yields not necessarily the same solution as first averaging variables and then optimizing over savings.

In conclusion, it is the opinion of this referee that the author's conclusions are unwarranted as there are multiple issues with the model which are incorrect/incomplete.

References

Acemoglu, D (2009). Introduction to Modern Economic Growth. Princeton University Press.