

Report on Master Thesis

Institute of Economic Studies, Faculty of Social Sciences, Charles University in Prague

Student:	Tomáš Troch
Advisor:	Josef Stráský
Title of the thesis:	Wealth inequality in dynamic stochastic general equilibrium models

The thesis constructs and calibrates a DSGE model with a RBC structure (perfectly competitive markets, no real effects of money) with heterogeneous agents to model how the limited access of part of population to financial markets (zero asset constraint) affects the inequalities in the economy. In a calibration, the model predicts inequality for the US economy and the prediction is largely below the real equality.

The model exploits the standard techniques in DSGE modelling. (To circumvent the hardest difficulties, only first moments are used in Taylor expansion and also in the approximated optimization of households.) In my view, the strongest part of the thesis is the proof of ability to construct and handle such a model in Dynare framework. The weakest part is the connection of the model to the observed inequality in the US economy. Overall, the thesis is a sound theoretical work in macroeconomics, which definitely passes the threshold for a successful master thesis.

I have a couple of fundamental comments:

- With common productivity and common wage, it is apparent that the model cannot have the ambition to model inequality as such as it abstracts from the fundamental sources of inequality such as individual productivity resulting into individually high wages. (Idiosyncratic differences are only transitory shocks.) Therefore, the low degree of inequality in the calibration (relative to the US economy) is not surprising and the lesson of this reduced model is therefore not very strong. If this was the aim of the thesis (as I can see from p. 2 in Introduction), then the aim was quite modest.
- Specifically for the US economy, the number of working hours is large, and the number seems to also have an unequal pattern unlike in the model where the labor supply is fixed. (An interesting recent discussion about the labor supply of rich households is that modern jobs of white-collar workers are increasingly more rewarding in terms of self-esteem and more creative, which makes leisure less attractive.)
- Also, there are many other assumptions that make it difficult to match the model with the US economy. For example, the government affects inequality only through a tax on interest gains and a lump-sum transfer to the households that are subject to the zero asset constraint. I would be very cautious to draw policy conclusions from the benchmark model where the policies largely differ from the policies that are actually in place. Also, why to try to fit the pattern of inequality by considering purely artificial policies such as negative interest taxation?
- In my reading, the model is not a good model of wealth inequality, but a relatively useful benchmark model of the effect of the *zero asset constraint*. In brief, the model studies the consequences of having some households which abstain (for whatever reason) from saving and lending keeping other things as simple as possible.
- Therefore, I would expect more focus to be put on the relevance of the assumption going far beyond the discussion on p. 23. (Maybe some micro evidence would be helpful?) For example, I would expect a discussion about the measurement of access ownership to understand the size of the population which is subject to the asset constraints. For example, I would expect that housing market is key in the treatment of the link between the asset ownership and inequality. For most households (at least in less mobile Europe), the main assets are their houses, and the households effectively save by investing into their houses (or, into houses or flats of their descendants). This holds both for poor and rich households. This is important for understanding relevance of the zero asset constraint at least in the European context which exhibits lower mobility than the US.

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I would also have a couple of minor suggestions for improvements, like not using „c“ for both consumption and capitalists. Also, it would be nice to state immediately that $b = 0$. I would also appreciate a more detailed discussion on the introduction of the penalty function – to enforce asset ownership in this way looks artificial. (A related technical problem is that when class-membership is endogenous, then we must be cautious about any utility-difference between the classes. Here, for instance, the capitalists suffer from a positive penalty, whereas workers never pay the penalty.)

For defence, the discussion on p. 53 on possible extensions to make the model more predictive could be a useful starting. Should individual productivity differences be incorporated and how? Do we indeed need market imperfections and New Keynesian framework to model inequalities? Which government policies should be definitely be incorporated if the model seeks to model inequalities and which can be abandoned?

SUMMARY OF POINTS AWARDED (for details, see below):

CATEGORY	POINTS
<i>Literature</i> (max. 20 points)	20
<i>Methods</i> (max. 30 points)	26
<i>Contribution</i> (max. 30 points)	20
<i>Manuscript Form</i> (max. 20 points)	20
TOTAL POINTS (max. 100 points)	86
GRADE (1 – 2 – 3 – 4)	1

NAME OF THE REFEREE: Martin Gregor

DATE OF EVALUATION: June 16, 2014

Referee Signature