Monetary Economics
Workshop II 2020-21

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1. Consider an overlapping generations model where agents live for two periods, with population, N_t evolving according to $N_t = (1+n)N_{t-1}$. Assume logarithmic utility: $U_t = \ln C_{1,t} + \ln C_{2,t+1}$.

   Each individual born at time t is endowed with A units of the economy's single good, which can be consumed or stored. Each unit stored yields $x > 0$ units of the good in the following period.

   There are $\frac{1}{1+n}N_0$ agents who are alive only in periodo 0 and they are endowed with some amount Z of the good. Their utility is just $C_{2,0}$.

   (a) Describe the decentralised equilibrium: will member of any generation engage in transactions with members of another generation?

   (b) Consider the paths were the fraction of agents' endowments that is stored, f_t, is constant over time (so $f_t = f$). Write the agent's lifetime budget constraint and solve for her choice of f.

   (c) Does f depend on x?

   (d) If $x < 1 + n$, is the decentralised equilibrium you obtained above Pareto efficient?

   (e) Assume that the social planner transferred a fraction f (that you obtained above) from the young to the old and that this is done every period. How much will people consume when young and when old?

   (f) What is the effect on welfare of the social planner's transfers?

2. Run the Dynare file 'ecn324LectureExample1.mod' in Dynare (note that Matlab is case-sensitive). This is available on Blackboard.