PhD Macro
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Due: 23 February

Question 1. Suppose that the consumers in Neil Wallace's model of Lecture 4 have preferences characterised by a constant elasticity of intertemporal substitution and that equilibrium is given by

$$\frac{y - m_t}{nm_{t+1}} = h\left(\frac{\beta n m_{t+1}}{z m_t}\right),$$

where the variables and function h are as defined in the lecture notes. Is it possible to have equilibria where $m_t \to 0$? How does this depend on the elasticity of intertemporal substitution?

Question 2. Suppose that there is a single consumer in each generation, that the money supply M is constant, and that consumers have a constant elasticity of intertemporal substitution utility function. Suppose also that they are endowed with w^y units of output when young and w^o units of output when old. The old consumer of generation zero has w^o units of output and M units of money.

- Find a difference equation that characterises equilibrium sequences of real balances.

- Under what conditions does a fundamental equilibrium m^* exist.

- Under what conditions is m^* the unique monetary equilibrium?