

## Solutions to the Exercises of Chapter 2: An Open Endowment Economy

### Exercise 2.1 (Consumption Innovations)

In the economy with AR(1) endowment shocks studied in section 2.2, we found that

$$E_t c_{t+1} = c_t$$

which means that

$$c_{t+1} = c_t + \mu_{t+1},$$

where  $\mu_{t+1}$  is a white noise process that is unforecastable given information available in  $t$ . Derive the innovation  $\mu_{t+1}$  as a function of  $r$ ,  $\rho$ , and  $\epsilon_{t+1}$ .

**Answer:**

$$\mu_{t+1} = \frac{r}{1+r} \rho \epsilon_{t+1}$$