Intermediate Inputs as Durables. Suppose that the intermediate inputs, \( X_{ij} \), are infinite-lived durable goods. New units of these durables can be formed from one unit of final output. The inventor of the \( j \)th type of intermediate good charges the rental price \( R_j \), and the competitive producers of final goods treat \( R_j \) as given.

1. How is \( R_j \) determined?

2. In the steady state, what is the quantity, \( X_j \), of each type of intermediate good?

3. What is the steady-state growth rate of the economy? How does this answer differ from the case we had in class in which the intermediate inputs were perishable goods?

4. If the intermediate goods are durables, then what kinds of dynamic effects arise in the transition to the steady state?