

Exercise 11: Supporting an Arrow Debreu Equilibrium as a Sequence of Markets Equilibrium

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There are i types with λ_i being the measure of type i . The Arrow-Debreu commodity point is $\{x_t\}_{t=0,1,2,\dots}$ where $x_t=(c_t, i_t, h_t, k_t)$. Here c_t denotes date t consumption good, i_t date t investment good, h_t hours of date t labor services, and k_t is units of date t capital services. Let the allocation $\{x^1, x^2, \dots, x^I, y\}$ and the price system $\{p_t, q_t, w_t, r_t\}_{t=0,1,2,\dots}$ be an A-D competitive equilibrium. Here y is the aggregate commodity vector of the business sector. There are constant returns to scale. Only households own capital and supply capital services.

- i. Specify the credit-debt position per type i person as a function of the prices and x^i .
- ii. For the sequence of market equilibrium that supports this allocation, specify the date t credit-debt position per type i person as a function of x^i and the prices.