$$L = E_0 \sum_{t=0}^{\infty} M_{0,t} \left[\left(A_t F(K_t, N_t) - W_t N_t - I_t + Q_t B_{t+1} - B_t \right) - q_t \left(K_{t+1} - I_t - (1-\delta) K_t \right) \right]$$

F.O.C.

$$N_t: \quad M_{0,t} \left[A_t F_N(K_t, N_t) - W_t \right] = 0$$

$$I_t: \quad M_{0,t} \left[-1 + q_t \right] = 0$$

$$B_{t+1}: \quad M_{0,t} Q_t - E_t M_{0,t+1} = 0 \quad \Rightarrow \quad Q_t = E_t M_{t,t+1}$$

$$K_{t+1}: \quad -M_{0,t} q_t + E_t M_{0,t+1} \left[A_t F_K(K_t, N_t) + (1-\delta) q_{t+1} \right]$$

Lecture 3