infinite. In the settings with costly state verification, the cost of external financing is increasing in the borrowing for given net worth since higher leverage requires more monitoring and therefore implies greater agency costs.

In equilibrium, anticipating no shocks, a productive agent borrows to the limit and does not consume any of the tradable output he produces. This implies a demand for assets k_t in period t given by

$$k_t = \frac{1}{q_t - \frac{1}{R} q_{t+1}} \left[(a + q_t) \, k_{t-1} - R b_{t-1} \right].$$

The term in square brackets is the agent's net worth given by his tradable output $a k_{t-1}$ and the current value of his asset holdings from the previous period $q_t k_{t-1}$, net of the face value of maturing debt $R b_{t-1}$. This net worth is levered up by the factor $(q_t - q_{t+1}/R)^{-1}$ which is the inverse margin requirement implied by the borrowing constraint. Each unit of the asset costs q_t but the agent can only borrow q_{t+1}/R against one unit of the asset used as collateral.

The unproductive agents' technology is not idiosyncratic – it does not require the particular agent's human capital. Therefore, unproductive agents are not borrowing constrained and the equilibrium interest rate is equal to their discount rate, $R = 1/\underline{\beta}$. An unproductive agent chooses asset holdings $\underline{k}_t$ that yield the same return as the risk free rate

$$R = \frac{\underline{F}'(\underline{k}_t) + q_{t+1}}{q_t},$$

which can be rewritten as

$$q_t - \frac{1}{R} q_{t+1} = \frac{1}{R} \underline{F}'(\underline{k}_t). \tag{12}$$

Expressed in this form, an unproductive agent demands capital $\underline{k}_t$ until the discounted marginal product $\underline{F}'(\underline{k}_t)/R$ equals the opportunity cost given by the difference in today's price and the discounted price tomorrow, $q_t - q_{t+1}/R$.

The aggregate mass of productive agents is η while the aggregate mass of unproductive agents is $1 - \eta$. Denoting aggregate quantities by capital letters, market clearing in the asset market at t requires $\eta K_t + (1 - \eta) \underline{K}_t = \bar{K}$. With the unproductive agent's first order condition (12) this implies

$$q_t - \frac{1}{R} q_{t+1} = \frac{1}{R} \underline{F}' \left(\frac{\bar{K} - \eta K_t}{1 - \eta} \right) =: M(K_t). \tag{13}$$

In equilibrium, the margin requirement $q_t - q_{t+1}/R$ faced by the productive agents is