leads to an increase in investment. Dividing the entrepreneur's payoff (2) by the net worth n_t and using the optimal investment rule we get that the entrepreneur's return on internal funds is

$$\rho(q_t) = \int_{\bar{\omega}_t}^{\infty} (\omega - \bar{\omega}_t) \, dG(\omega) \, \psi(q_t) \, q_t > 1 \tag{3}$$

Due to the linearity, the investment rule can be aggregated easily into an aggregate supply of capital which is increasing in both the price of capital q_t and aggregate net worth of entrepreneurs N_t.

To close the model we need the corresponding demand for capital holdings from households and entrepreneurs. The return to holding a unit of capital from period t to period $t+1$ is given by

$$R_{t+1}^k = \frac{A_{t+1} f'(K_{t+1}) + q_{t+1}(1-\delta)}{q_t},$$

where $A_{t+1} f'(K_{t+1})$ is the competitive rent paid to capital in the production of consumption goods and δ is the depreciation rate.[1] Households are risk averse and have a discount factor $\underline{\beta}$. A household's consumption-savings decision is given by the Euler equation

$$u'(c_t) = \underline{\beta} E_t \left[R_{t+1}^k u'(c_{t+1}) \right] \tag{4}$$

Entrepreneurs are risk neutral and less patient, $\beta < \underline{\beta}$, so their consumption-savings decision implies the Euler equation

$$1 = \beta E_t \left[R_{t+1}^k \rho(q_{t+1}) \right], \tag{5}$$

where the non-standard factor $\rho(q_{t+1}) > 1$ is the return on an entrepreneur's internal funds defined in (3) which is greater than one due to the agency costs.[2] The aggregate demand for capital is implied by the combination of the households' FOC (4) and the entrepreneurs' FOC (5) and is decreasing in the price of capital q_t.

In this model shocks to entrepreneurs' net worth show persistence: A negative shock in period t decreases entrepreneurial net worth N_t which increases the financing friction

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[1]Production of output also uses labor but this is fixed in supply.

[2]The assumption of relative impatience implies the entrepreneurs want to consume earlier than households, while the excess return on internal funds implies they want to postpone consumption. In a calibration, the two have to be balanced, i.e. $\beta\rho(q) = \underline{\beta}$, to prevent entrepreneurs from postponing consumption and becoming self-financed.