We conjecture an equilibrium with prices $p_0$ and $p_D$ with the following features. In period 0 the most optimistic agents borrow and buy all the assets at price $p_0$ with a marginal buyer $h_0$. If the first move is to $U$, all uncertainty is fully resolved and nothing interesting happens. If instead $D$ realizes, the initial buyers are completely wiped out and the remaining agents each receive an equal payment $1/h_0$ from them. Among the now remaining agents the most optimistic buy the assets at price $p_D$ with a marginal buyer $h_D$.

We will derive the equilibrium by backwards induction. Analogous to the static case, the marginal buyer in state $D$ satisfies

$$h_D \cdot 1 + (1 - h_D) \cdot 0.2 = p_D.$$

The buyers $h \in [h_0, h_D]$ spend their endowment and what they can borrow to buy all the assets so market clearing requires

$$\frac{1}{h_0}(h_0 - h_D) + 0.2 = p_D h_D.$$

In period 0 the marginal buyer's situation is a bit more complicated. He will not be indifferent between spending his endowment buying the asset or consuming it since he anticipates that storing his endowment may allow him to buy the asset in state $D$ at a price he considers a bargain. To make him indifferent the return on each dollar of his endowment must be the same wether he buys the asset now (in period 0) or whether he waits and buys the asset in state $D$ tomorrow, which requires

$$\frac{h_0(1 - p_D)}{p_0 - p_D} = h_0 \cdot 1 + (1 - h_0)\frac{h_0(1 - 0.2)}{p_D - 0.2}.$$

Note that this implies that there are speculators in equilibrium: agents who consider the asset undervalued in period 0 but nevertheless prefer to hold on to their cash for the possibility of an even better opportunity in period 1. Market clearing requires, similar to before

$$(1 - h_0) + p_D = p_0 h_0$$

The four equilibrium equations can be solved by an iterative algorithm to yield the