Proof of Theorem 32 (Dec)

Follows from the fact that each underlying single period market is complete iff it has a unique risk neutral probability measure. In view of how we constructed $\mathbb{Q}$ for the multiperiod financial market in the previous section, the result follows.

Proof of Proposition 35 (Idea)

$\Rightarrow$) If X is attainable, by the risk neutral pricing principle, Theorem 27, we have that its price (at time 0) will be equal to $V(0)$ and $V(0) = E_Q[X/B(T)]$ for any $Q \in M$.

$\Leftarrow$) Suppose that X is not attainable. Then, the backward procedure to compute a replicating strategy will fail at some of the underlying single period markets. For such S.P.M. there will be at least two conditional RNPM. giving two different conditional expectations to $X/B(T)$. This will extend to the multi-period market.