Remark 0.0.1.

(i) For any $\mathbb{Q}$-integrable r.v. ψ, we have

$$\mathbb{E}^{\mathbb{Q}}(\psi) = \mathbb{E}^{\mathbb{P}}(\eta_T \psi).$$

ψ is $\mathbb{Q}$-integrable if and only if $\eta_T \psi$ is $\mathbb{P}$-integrable.

(ii) $\mathbb{P}\{\eta_T > 0\} = 1$.

(iii) $\mathbb{E}^{\mathbb{P}} \eta_T = \mathbb{Q}(\Omega) = 1$.