Proposition 0.0.1. *Suppose that γ is an $\mathbb{R}^d$-valued $\mathcal{F}$-progressively measurable process such that $\mathbb{E}^{\mathbb{P}}[\mathcal{E}_T(U)] = 1$. Define a probability measure $\widetilde{\mathbb{P}}$ on $(\Omega, \mathcal{F}_T)$ equivalent to $\mathbb{P}$ by means of the Radon–Nikodym derivative*

$$\eta_T = \frac{d\widetilde{\mathbb{P}}}{d\mathbb{P}} = \mathcal{E}_T\left(\int_0^{\cdot} \gamma_u \cdot d\boldsymbol{W}_u\right) = \mathcal{E}_T(U).$$

Then the process $\widetilde{\boldsymbol{W}}$ given by the formula

$$\widetilde{\boldsymbol{W}}_t = \boldsymbol{W}_t - \int_0^t \gamma_u \, du, \quad \forall t \in [0, T]$$

follows a standard d-dimensional Brownian motion on the space $(\Omega, \mathcal{F}, \widetilde{\mathbb{P}})$.