FX consistency

Let X^{10} = GBPUSD, X^{20} = EURUSD so $X^{12} := \frac{X^{10}}{X^{20}}$ = GBPEUR. If we specify a model for X^{10} and X^{20} under the USD measure $\mathbb{Q}^0$, then we can price call options on X^{12} (in the unnatural currency USD) using

$$\mathbb{E}^0[X_T^{20}(X_T^{12} - K)_+].$$

To avoid arbitrage this must be equivalent to

$$X_0^{20}\mathbb{E}^2[(X_T^{12} - K)_+]$$

where here X^{12} dynamics are under $\mathbb{Q}^2$, verifying $\frac{d\mathbb{Q}^2}{d\mathbb{Q}^0} = X^{20}$.