

---

**RENJIE WANG**, Concordia University  
*Optimal measure transformation problems*

We introduce an optimal measure transformation problem for zero coupon bond prices based on dynamic relative entropy of probability measures. In the default-free case we prove the equivalence of the optimal measure transformation problem and an optimal stochastic control problem of Gombani and Runggaldier (Math. Financ. 23(4):659-686, 2013) for bond prices. We also consider the optimal measure transformation problem for defaultable bonds, futures contracts, and forward contracts. We provide financial interpretations of the optimal measure transformation problems in terms of the maximization of returns subject to a relative entropy penalty term. In general the solution of the optimal measure transformation problem is characterized by the solution of certain decoupled nonlinear forward-backward stochastic differential equations (FBSDEs). In specific classes of models we show how these FBSDEs can be solved explicitly or at least numerically.