

Mikkel Slot Nielsen

Equivalent martingale measures for Lévy driven moving averages

The aim is to obtain sufficient conditions ensuring the existence of an equivalent martingale measure (EMM) for Lévy driven moving averages. In the case where the driving process is a Brownian motion, results are perfectly known. In particular, the semimartingale property is characterized by explicit conditions on the kernel and, given that process is not of finite variation, there exists an EMM under which the process is a Brownian motion. Even when the driving process is a more general Lévy process, the semimartingale property has been well-studied, but we naturally ask for the existence of an EMM. The classical version of Girsanov's theorem suggests a specific candidate as density process. In order to verify that such candidate is indeed a density, we are forced to obtain another criterion than one of the standard Novikov type. In other cases where the proven condition is not sufficient, we suggest other (valid) choices of the density process.