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Structure Condition In Informational Markets

It has been understood that the existence of Markowitz' optimal portfolio and the solution to the local-risk minimization problem are intimately related to some mathematical structures on the underlying assets price processes. These structures are known, in the literature, as "Structure Condition". In this talk, we consider a market model (initial market model) fulfilling these structures, and an arbitrary random time that is not a stopping time with respect to the flow of the information generated by the initial market. This random time can model the default time of a firm, the death time of an insured, or any time occurrence of an even that might affect the market some how. By adding —progressively through time— the information about this random time as it occurs, those structures may fail and hence the optimal portfolio/strategy will fail to exist. Our aim is to address the question of how the incorporation of this random time will affect these structures from different perspectives. Our analysis allowed us to conclude that under some mild assumptions on the market model and the random time, these structures will remain valid on the one hand. On the other hand, we describe the random time models for which these structure conditions are preserved for any market model.