Convex measures of risk and trading constraints

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Abstract

We shall study the paper [3] by H.Föllmer and A. Schied. Here the authors introduce the notion of a convex measure of risk, an extension of the concept of a coherent risk measure defined in Artzner et al. (1999), and they prove a corresponding extension of the representation theorem in terms of probability measures on the underlying space of scenarios. As a case study, they consider convex measures of risk defined in terms of a robust notion of bounded shortfall risk. In the context of a financial market model, it turns out that the representation theorem is closely related to the superhedging duality under convex constraints.

References

[1] Artzner, P., Delbaen, F., Eber, J.-M., Heath, D.: Coherent measures of risk. Math. Finance 9(3), 203-228 (1999)

[2] Delbaen, F.: Coherent measures of risk on general probability spaces Preprint ETH Zürich 2000 (http://www.math.ethz.ch/ delbaen/)

[3] Föllmer, H., Schied, A.: Convex measures of risk and trading constraints. Finance Stochast. 6, 429-447 (2002)

[4] Föllmer, H., Schied, A.: Stochastic finance: An introduction in discrete time. Berlin: de Gruyter Studies in Mathematics 2002.