

Time-consistency for dynamic risk and performance measures

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A new definition of time-consistency for dynamic local and monotone measures (LM-measures) is proposed. The definition applies to both dynamic monetary risk measures [4] as well as dynamic measures of performance [2, 3]. Our definition is based on information update procedure, rather than on a benchmark set of financial positions, as was done in [1]. This allows for a more flexible approach to studying time consistency. Connection with definitions of time consistency existing in the literature are discussed, as well as some basic properties of updating procedures.

References

- [1] B. Acciaio, I. Penner, *Dynamic risk measures*, Advanced Mathematical Methods for Finance (2011), 1–34 (G. Di Nunno and B. Øksendal Eds.).
- [2] T. R. Bielecki, I. Cialenco, M. Pitera, *Dynamic limit growth indices in discrete time*, arXiv preprint arXiv:1312.1006 (2013).
- [3] T. R. Bielecki, I. Cialenco, Z. Zhang, *Dynamic coherent acceptability indices and their applications to finance*, Mathematical Finance (2012).
- [4] P. Cheridito, F. Delbaen, and M. Kupper, *Dynamic monetary risk measures for bounded discrete-time processes*, Electron. J. Probab. **11** (2006), no. 3, 57–106.