

Predictable Forward Performance Processes for Loss-Averse Agents

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Predictable forward performance processes (PFPPs) are stochastic optimal control frameworks for an agent who controls a randomly evolving system but can only prescribe the system dynamics for a short period ahead. This is a common scenario in which a controlling agent frequently re-calibrates her model. In this talk, I discuss a new class of PFPPs for loss-averse agents who update their loss threshold and loss-aversion level throughout their investment horizon. Construction of these loss-averse PFPPs reduces to solving a sequence of inverse optimal control problems, in which the value function is known and a (linear-concave) utility function is to be found. Existence and uniqueness results for the inverse problems are obtained by the analysis of a corresponding Fredholm integral equation. Illustrative numerical examples are provided in the context of conditionally complete Black-Scholes model.

In Special Session 61 on Recent Advances in Mathematical Finance and Related Fields at the Mathematical Congress of the Americas 2025.