

Mean field portfolio games

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Abstract

First, I will discuss a mean field portfolio game in a general framework. Using a dynamic programming principle and a martingale optimality principle, I establish a one-to-one correspondence between the Nash equilibrium and some BSDE. Such a correspondence is key to the uniqueness result of Nash equilibria. Generally, this BSDE can be solved under a weak interaction assumption. Motivated by this assumption, I will introduce an asymptotic expansion result of the game value in terms of the interaction parameter. Second, I will incorporate consumption into the portfolio game and show that the equilibrium investment and consumption can be fully characterized by one BSDE.



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