

Risk measurements for blockchain mining pools and crypto asset management

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In this paper, we study the optimal decision-making problem of miners and pool managers in blockchain pooled mining. To the best of our knowledge, risk measures are first introduced into the activity of blockchain mining, unlike the concept of utilities that are abundant in the existing literature. It is also pointed out that under this concept, miners prefer to join mining pools for mining rather than solo mining. Afterwards, we build a risk model with the goal of minimizing risk measures of miners and pool managers, trying to analyze their behaviors in equilibrium and the resulting consequences. In the quantitative illustration, we show the trend of the global hash rate, the optimal fee, and the growth rate of the mining pool with some important variables.