Abstract

During the last few years, market micro-structure research has been active in analysing the dependence of market efficiency on different market characteristics. Make-take fees are one of those topics as they might modify the incentives for participating agents, e.g. broker-dealers or market-makers. In this thesis, we propose a Hawkes process-based model that captures statistical differences arising from different fee regimes and we estimate the differences on limit order book data. We then use these estimates in an attempt to measure the execution quality from the perspective of a market-maker. We appropriate existing theoretical market frameworks, however, for the purpose of finding optimal market-making policies we apply a novel method of deep reinforcement learning. Our results suggest, firstly, that maker-taker exchanges provide better liquidity to the markets, and secondly, that deep reinforcement learning methods may be successfully applied to the domain of optimal market-making.