Cost Effective Liquidation Strategy

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Open ended funds manage mandates from their investors. Investors can subscribe for fund shares or withdraw their cash investment frequently, within a contractual notice period of a couple of days. When a fund faces larger redemption requests, the manager may need to sell some portfolio holdings to meet these obligations. On imperfect markets, however, trading comes with costs: the manager can sell assets below fair price. The larger the portfolio holding or the shorter the trading horizon, the higher these transaction costs are.

The portfolio manager can decide which holdings to sell to collect cash and pay out investors. Transaction cost depend on the asset classes: sovereign bonds tend to have smaller transaction costs than low rated corporate credit of the same transaction size. Portfolio managers may follow waterfall liquidation method, i.e. to sell liquid assets first to meet redemptions and then rebalance the portfolio on a longer horizon.

In this thesis paper, we developed an algorithm for the liquidation method that minimizes the transaction costs. We further implemented the algorithm in Python and qualitatively discussed the results using a sample portfolio.