

Homework 5 report

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Problem 1

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Buy-and-hold strategy:

Rebalancing strategy: Parameters:

- S_0 : initial stock price.
- S_t : stock price at time t .
- x_t : number of stock shares at time t .
- C_t : cash held at time t in dollar.

Use the Monte Carlo to simulate the stock price to get all S_t , and then update all all C_i and x_i :

$$C_{t+1} = \frac{x_t S_{t+1}}{2}$$
$$x_{t+1} = \frac{C_1}{S_1}$$

Monte Carlo simulations:

- $u = 2$
- $d = 0.5$
- $p_u = p_d = 0.5$

Problem 2

Problem 3

Problem 4