Abstract

Optimal investment is used for financial institutions, such as commercial banks, investment banks and insurance companies, etc. to build financial modeling which can help them choose the best portfolio to make a profit. A portfolio is an investment of financial assets, including bonds, stocks and other financial products. Thus, investors need to be concerned about how to maximize the expected returns and minimize risk by choosing the proper portfolio. Harry Markowitz (1952) built the one-period model to help the investors achieve the maximization of expected return and minimal risk. Robert Merton (1974, 1975) built the continuous time model to maximize the expected utility. We will follow the book, Optimal Investment, written by Rogers (2013), which shows the solving method by giving several theoretical approaches, such as the Value Function Approach and the Dual Value Function Approach. There is also a numerical solution implemented for the value function which can be solved by policy iteration.
Reference


