

Abstract

This research paper will discuss two financial analysis methods to aid investors in making investment decisions.

The first portion of this paper will introduce the One-Factor Model, which is a predictive function that estimates the price of a particular stock based on the price of the market index. It is constructed through linear regression of their historical price data. We will investigate how the time period of historical data used affects the accuracy of the predicted price. After that, we will predict the future price of ExxonMobil on 11th March 2015 (SSEF Judging Day) with the optimal time period of training data used.

The second portion of this paper will introduce the Efficient Frontier, which allows investors to construct efficient portfolios through using standard deviation as a proxy for risk. We will first illustrate the construction of the minimum variance set, from where the efficient frontier is obtained from its upper bound. We then investigate how the correlation of historical stock prices in a portfolio affects the efficient frontier constructed, through comparing two portfolio of generally uncorrelated stocks (from different industries) and highly correlated stocks (from the same industry).