Capstone Project 2 Proposal

Stock Volatility

Abstract

The goal of my project is to attempt to predict certain changes in volatility in stocks. Specifically, I am very interested in Boeing's stock and I want to attempt to predict changes in the money option volatility. Can this be predicted by using other information about the stock over a period of time? This will help organizations either with profitable trading strategies or drawbacks in existing portfolios. The data will be available from quandl using the stock data that provides information such as open, close, dividend, split etc. and volume data that will include option volatility information. I will be using a time series analysis to move forward with this project. The elements include stock price, trading volumes, historical volatility, and prices of the money options. I will look at moving averages instead of just the data in order to see what is changing the volatility. There are several ways to use Time Series Analysis but I will definitely be using Auto-ARIMA. I will use other methods as I go along to see if there is a better model. The biggest challenge with Boeing is that the stock can fluctuate significantly. Specifically with Covid-19, we have been flying less and less causing the stock to plummet. We also saw fluctuations in the stock during the 737 MAX accidents. This may have to be removed during the process as well as seasonal patterns.