CSC 425 - final - nontechnical

In my analysis, I select two dataset, 5-year period, on the same stock and perform time series analysis on those two, hoping to get assisted to our investment.

This is very informative on our expected return from holding the stock.

In long-term dataset, we fit a model to capture autocorrelation of the leveraged volatility and daily return based on a very long time window. Our model is

Rt =-0.077Rt-1 + 0.12Rt-2 +at , at =σt et  (return dependence)

ln(σt2) = -0.081+0.051g(et)+0.989 ln(σt-12) (volatility dependence)

g(eT)=-0.45et +[|et|-E(|et|)] (to capture the leverage volatility)

Our model give us a three days forecast of return 0.58%, while actual price return for this period is -1.44%.

We could use this model to manage investment risk for our portfolio, computing the weighted average volatility for our stocks. While in our analysis on the stock, we are 95% confident that the next day's price return is with -4.7% and +5.2%. However, in order to accurately estimate the price return, we have to update our model very frequently, since the predicting ability is limited for our model.

However, there is a potential drawback for our model, because it seems that we have to adjust the seasonal effect for the model.