FE 522 Final Project Report
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Equity Research Tool

Our group created a program that, when a user enters a stock ticker, outputs various financial metrics that are valuable for analyzing stocks. This program is beneficial for investors looking for a quick and easy way to see baseline metrics for a stocks, as well as for students, who are looking to quickly gather useful information for stock pitches and equity valuation projects. More extensive tools, such as the Bloomberg Terminal, can be extremely costly and overwhelming for users who do not have the proper training resources. Our program offers a solution that will require no training and be free of cost to the user.

For our stock database, we created an R script that utilizes Yahoo Finance to gather historical price data and then outputs it nicely formatted to a CSV file. The retrieved data includes five years of historical prices for the S&P 500 index, the stocks within the index, and Treasury yields. This CSV file is then read into our C++ program and manipulated into vectors for easy extraction.

To begin using our equity research tool, the program prompts the user to input a ticker for the company they are interested in researching. The historical closing prices of the specified stock are then used to perform various calculations. The calculations within our program include mean, median, standard deviation, average return, Beta, Sharpe ratio, C-Sharpe ratio, 95% VaR and 95% cVaR. Our Buy/Sell recommendation is based on Sharpe ratios and average annual returns. If the Sharpe ratio for the selected stock is greater than the average for all stocks in the S&P 500 and if the average annual return for the stock is greater than the median for all stocks in the S&P 500, the program recommends to buy the stock. Otherwise it recommends to sell.

Our program outputs the results directly to the console for the user to quickly see, and it also generates and outputs a TXT file equity research report for the user to reference at a later time. The file includes the results of all the ratio calculations for the specified stock, as well as the program's recommendation to buy or sell the stock. This information, delivered through a simple research tool, gives the user valuable, clear and concise information that can be used to make smart investment decisions.