

Temple University, Department of Computer
Science
CIS 4360 Computational Methods in Finance
Fall 2023
Instructor: Dr. Alex Pang

Project 2

Student Name:

due date:

Overview

The goal of the second project is to reinforce and implement what you have learned in class related to fundamental analysis. In particular, you will implement a class to calculate the fair value of a company based on discounted cashflow model. You will then run the model for 5 companies of your choice. Based on the outcome of your model, write a brief report on your buy or sell recommendation of your choices.

The project will be done independently. I will provide code and notebook template as a starting point.

Tasks

1. Download stock.py, DCF_model.py. Fill in all the missing code. If your implement is correct, you should get 84.88 for the test case.
2. Download run_DCF.py. Fill in the value of the EPS next 5Y from finviz.com of any companies you need.
3. Run the script to calculate the fair value for 5 companies. You can choose any of your favorite companies. Based on the result, pick one as your best recommendation. It can be a buy or a sell.

4. Download DiscountedCashFlowModel.ipynb notebook. Modify whatever necessary to use it to show case the result you like to share with your audience. Plot the stock price along with the 9, 20, 50 and 200 SMA.
5. Write a brief report explaining the reasoning behind your recommendation. The report should contain what model you use and some of the major assumption of your model; what universe you have looked at and the reason why you pick what you recommend.

Some of the common consideration in picking a stock

1. From the fundamental analysis, buy if the fair value is lower than the stock price; sell if the fair value is higher than the stock price.
2. From the fundamental perspective, people like low P/E ratio for long.
3. From technical perspective, people like stocks that are trading above the 10, 20 moving averages for long and vice versa for short.
4. Trends in the stock's industry and sector.
5. Overall macro environment

Check list of what you need to submit

Zip all of the following and submit them as a single zip file.

1. The python scripts, utils.py, stock.py, DCF_model.py, run_DCF.py
2. DiscountedCashflow.ipynb
3. Your stock investment recommendation report (in word or pdf format)

Rubric

Your work will be graded based on Correctness, Completeness and Elegance. Make sure your code has enough comments.