Econ 525   Prof. Aguilar
Advanced Financial Economics   UNC at Chapel Hill

Student Name: _____
PID: _____
Honor Code Signature: _____

Matlab HW#7 - 3/29/19 @ 5:00pm

Instructions:

- You must state and justify any and all assumptions you make in the assignment.

- Your submission must be a professional presentation of your work.

- Students may collaborate, but each student must follow the honor code, and submit their own work. Obvious instances where more than one student utilizes the same spreadsheet or commentary will not be tolerated.

- This assignment must be completed using Matlab.

- Your deliverable should be a single m file with the following naming convention: "FirstName-LastName-HW#.m".

- This m file should be submitted to the 525 sakai dropbox by the due date and time stated above.

- The m file should include code for importing the data, as well as producing the requested figures.

- Provide any files (Excel, csv, etc) that are necessary for the m file to run.

- The m file should be heavily commented, detailing every step of your calculations. Please include the answers to the questions below within these comments.

- Please include the following in the preamble of your code:

  * %Purpose:
    · Econ 525-Spring2019
  * %Note:
    · This m-file is dependent upon xyz files.
  * %Author:
    · %Name — Date
    · %UNC Honor Pledge: I certify that no unauthorized assistance has been received or given in the completion of this work.

Suppose you are working for a money manager. Your boss asks you to devise a trading strategy that outperforms the DJIA-30. Use the following information to answer the questions below.

- Use the constituents of the DJIA-30 listed in the Excel file provided.
- Use monthly return data from 01/01/2017 through 02/01/2019.
- Set your expected returns, variances, and covariances to their historical averages.
- Portfolio 1: long only, no leverage.
- Portfolio 2: long only, no leverage, $6 \leq N_p \leq 15$, where N_p is the number of assets in the portfolio.

1. Fill in the following table. The performance metrics can be computed entirely from the in-sample estimation period.

Performance Metrics	Portfolio 1	Portfolio 2
Total Active Return (%)		
Monthly Active Return (%)		
Active Risk (i.e. StDev of Active Return)		
Information Ratio		
MaxDrawdown of Active Return		
Omega Ratio (Active @0)		
Sortino Ratio (Active @0)		
Upside Ratio (Active @0)		

2. Create a bar chart for Portfolio 1 that has assets on the horizontal axis and active weights on the vertical, where active weights = portfolio weight - benchmark weight. Repeat for Portfolio 2.

3. Discuss your findings. Specifically, interpret each of the performance metrics. Compare and contrast portfolios 1 and 2.