

### **Fall 2020 ETM 595 Project Foundation**

**Due: Monday, 21 December 2020**

The aim of this homework is to prepare students for the final project. The required tasks are listed below:

1. Form a group of three students (one group will end up being two people). This group will continue to the course project together.
2. Select 15 assets from one of the stock exchange markets (İMKB, FTSE; NASDAQ, etc.)
3. Report to the instructor your group members, the market you have selected and the assets of your portfolio before midnight Monday 14 December 2020. Each portfolio has to have 15 assets.
4. Record the past 52 weeks weekly return rates. Find their averages, variances and covariances.
5. Form two portfolios using different weights, one where weights increase proportional to decreasing standard deviations of individual assets and one where weights decrease as average returns decrease. Calculate the means and variances of both portfolios.
6. Assuming the average weekly return of a portfolio is normally distributed with the parameter values you have collected calculate the probability of gaining a positive return and the probability of gaining a return above the inflation rate (rate banks loan money). You need weekly rates.
7. Form a readable and well documented excel file and generate a short report of 2-3 pages summarizing your calculations and your results. Submit both the excel file and the pdf file in the assignment link before the above given due date.