Unit 1: Case Study: Graphical Representation of Data

In this unit, you learned some basics statistical concepts about qualitative and quantitative graphical representation of data, measures of center and variation and measures of grouped data and position and outliers and the five-number summary and boxplots. It now time to use the knowledge you gained in the Financial Markets I course and apply the concepts in this unit to a finance scenario.

Spend time researching and completing the following activities:

1. Download data for last 2 years for the NASDAQ Composite. Download data from an appropriate financial website such as Google Finance, Yahoo Finance, Quandl, CityFALCON, or another similar source.

2. Calculate Daily returns of NASDAQ composite for the last 1 year

3. Graphically represent the stock prices as a line plot

4. Bucket the daily return values into bins and plot a histogram

5. Calculate mean, median and standard deviation of Daily return values and plot them on the same graph mentioned in step IV

Project Guidelines

The goal of this project is to apply the theory learned in this Unit through hands on involvement in a case study. As such, the focus is on the correct application of the theory, and not on rigorous implementation of coding logic. We would prefer that this mini project be executed in R as it would enable the most graceful implementation of the said logic. Students are however free to execute the project in Microsoft Excel (or a corresponding free open-source spreadsheet tool) also. There are no technical limitations in either R or Excel that would force the students to choose one platform over another.

The submitted R code/Excel worksheet should constitute a fully workable version. Students are encouraged to avoid usage of any special R/Excel packages for the assignment and stick to using standard R/Excel libraries. In case such a nonstandard package is anyway used, students should provide clear directions as to how to access and install the same.

Based on your findings, evaluate the following:
1. How are the daily returns of NASDAQ distributed? Does it follow a normal distribution?
2. Are any obvious trends visible in movement of NASDAQ prices for the period under study?
3. Analyze the measures of central tendency calculated and offer opinion on the overall risks and possible rewards associated with investing in the NASDAQ index for the period under study.

If you have multiple documents, create a ZIP file with all of them and upload that as your assignment.

Make sure to use the following naming convention: Your_Name-Assignment_Name-Date

Example: Instructor-Final_Project-May_12_2016

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