**ISF 110, Feb 24/2022**

**Lab 5 – Graphical data analysis exercise**

In this lab, you will learn (1) how to visualize data through graphs, and (2) how to interpret graphs. For this, please prepare a do file with the following:

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\*\*\*\*\*\*\*\*\*LAB 5 – DATA VISUALIZATION\*\*\*\*\*\*\*\*\*\*

\*\*\*\*\*\*\*\*Written by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \*\*\*\*\*\*\*\*

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clear all

set more off

capt log close

local c\_date = c(current\_date)

local study "SP500"

Now, carefully follow the instructions below to create your graphs and write a brief analysis of the graphs.

**1. Dropline:** We will visualize the daily stock price change data for S&P 500. You can download the S&P 500 data for 2001 using the following command: webuse sp500. You can also write:

use https://www.stata-press.com/data/r17/sp500

We want to see the market trends of S&P 500 for the first three months of 2001. Use br command to browse the data and count the exact number of days in the first three months.

Write down the exact number of days in the first three months here: \_\_\_

The command twoway dropline is useful for drawing plots in which the numbers vary around zero. Use the following command to create your dropline plot for the stock closing price change in the first three months (or the first quarter) of 2001:

twoway dropline change date in 1/62, yline(0)

Use the Graph Editor to give the graph a title like “S&P 500 Daily Closing Price Change, First Qrt, 2001”. Save the graph and copy paste on a Word document for analysis.

Get another dropline plot for the last quarter of 2001 following the same command as above. Just change the number of days in the last quarter and give a title to your graph.

Write a short analysis of the trends by comparing the two graphs you have created.

**2. Overlaid bar chart:** Using the same S&P 500 data, you can compare the daily high and low prices. If you want to see the trends in January, write:

twoway bar high low date in 1/22

Give a title to the chart. What does the chart say?

**3. Stacked bar chart:** You will create a bar chart to compare temperature change within the same region in the US between January and July of a given year. After you create the chart using the following commands, don’t forget to give it a title and interpret the result.

clear all //this command will clear the previous data set from memory

webuse citytemp

br  
graph bar tempjan tempjuly, over(region) stack

You can also show the bars side by side. Do this:

graph bar (mean) tempjuly tempjan, over(region) blabel(total)

**4. Population pyramid:** Can you create a population pyramid yourself? Use the following commands to create one with the 2000 US population data:

clear all

webuse pop2000

replace maletotal = -maletotal //use this command to put male on the left  
twoway bar maletotal agegrp, horizontal || bar femtotal agegrp, horizontal

**5. Line graph:** Finally, you will draw a line graph to show the trends in life expectancy of Americans over 1900-1999. Use the following commands:

clear all

webuse uslifeexp

twoway (line le year)(scatter le year) (line le\_male year) (line le\_female year)

Now, show the life expectancy of whites and life expectancy of blacks over time. Calculate the mean difference of life expectancy between males and females and between whites and blacks. You should use the sum command to get the means. Give your line graphs a title and write a short interpretation of the results.

\*End of Lab5\*

log close

exit, clear