Homework 1

Introduction to Econometrics (10 points)

Due Date: Monday Sep 6 at 11:59 pm

Instruction:

- Please type in your answers in the word document provided and submit it online.

- Please do not submit PDF files or image formats! the TAs are going to give you feedback in your word document.

- All the HW assignments are team-work assignment! Make sure all of the team members participate!

- Late homework assignments will not be accepted under any circumstances.

Question 1 What is Econometrics?

Question 2 Which of the following is true of experimental data?

    A. Experimental data are collected in laboratory environments in the natural sciences.

    B. Experimental data cannot be collected in a controlled environment.

    C. Experimental data is sometimes called observational data.

    D. Experimental data is sometimes called retrospective data.

Question 3 A data set that consists of observations on a variable or several variables over time is called a —— data set.

    A. Panel

    B. Cross-sectional

    C. Time series

    D. Experimental

Question 4 Which of the following refers to panel data?

    A. Data on the unemployment rate in a country over a 5-year period.

    B. Data on the price of a company's share during a year.

    C. Annual data on the income of 5 members of a family on a particular year.

    D. Data on the birth rate, death rate, and population growth rate in different developing countries over a 10-year period.

Question 5 Which of the follow is true?

    A. A variable has a causal effect on another variable if both variables increase or decrease simultaneously.

    B. The notion of 'ceteris paribus' plays an important role in causal analysis.

    C. Difficulty in inferring causality disappears when studying data at fairly high levels of aggregation.

    D. The problem of inferring causality arises if experimental data is used for analysis.

Question 6 Explain what the difference is between a panel and pooled cross-sectional data set?

Question 7 You strongly believe that there should be a relationship between "Y" and "X" and it's been a long time you want to prove it to your friends. Unfortunately, there is no theory out there supporting your idea. However, now that you are taking econometrics course, you can finally prove yourself to your friends! Answer the following questions: (Feel free to pick any X and y. You can think of as many X variables as you wish)

    (I) How do you approach solving this problem? What are the steps?

    (II) What is your econometric model?

    (III) What do you expect to see for the sign of the coefficients in your model?