Student: _____	**Instructor:** Richeng Piao	**Assignment:** Practice Problem Set 1
Date: _____	**Course:** ECON 2560 - Applied Econometrics	

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1. Econometrics can be defined as follows with the exception of:

   - **A.** fitting mathematical economic models to real-world data.
   - **B.** the science of testing economic theory.
   - **C.** a set of tools used for forecasting future values of economic variables.
   - **D.** measuring the height of economists.

   Answer: D. measuring the height of economists.

   ID: Test B Ex 1.1.1

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2. One of the primary advantages of using econometrics over typical results from economic theory is that:

   - **A.** it teaches you how to use statistical packages.
   - **B.** it potentially provides you with quantitative answers for a policy problem rather than simply suggesting the direction (positive/negati
   - **C.** you learn how to invert a 4 by 4 matrix.
   - **D.** all of the above.

   Answer: B.
   it potentially provides you with quantitative answers for a policy problem rather than simply suggesting the direction (positive/negative) of the response.

   ID: Test B Ex 1.1.2

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3. Suppose that you want to measure the causal effect of hours spent studying on the performance on a microeconomics exam for a class of 30 students.

Which of the following could be an ideal randomized controlled experiment to study the desired causal effect?

- **A.** Allow fifteen students, chosen at random, an extra day to study for the microeconomics exam. Then measure the exam score differ
- **B.** Allow the fifteen students with the highest grades in the class an extra day to study for the microeconomics exam. Then measure th
- **C.** Allow all students an extra day to study for the microeconomics exam. Then measure the exam score difference between the stude
- **D.** All of the above could be ideal randomized controlled experiments.

Consider the following randomized controlled experiment:

You allow fifteen students, chosen at random, an extra day to study for the microeconomics exam, and then measure the score differences between those who got the extra day to study and those that did not.

Which of the following could be impediments to implementing this experiment in practice?

- **A.** It could be against school policy to administer the same exam to two different groups of students in the same class on different days
- **B.** It could be considered unethical to allow some students more time to study.
- **C.** It could be costly to administer the same exam to two different groups of students in the same class on different days.
- **D.** A and C only.
- **E.** All of the above could be impediments to implementing this experiment in practice.

Answers A.

Allow fifteen students, chosen at random, an extra day to study for the microeconomics exam. Then measure the exam score differences between students who got the extra day to study and those that did not.

E. All of the above could be impediments to implementing this experiment in practice.

ID: Review Concept 1.1

4. Design a hypothetical ideal randomized controlled experiment to study the effect on highway traffic deaths of wearing seat belts. Suggest some impediments to implementing this experiment in practice.

ID: Review Concept 1.2 (essay)

5. In a randomized controlled experiment:

- **A.** you control for the effect that random numbers are not truly randomly generated.
- **B.** you control for random answers.
- **C.** the control group receives treatment on even days only.
- **D.** there is a control group and a treatment group.

Answer: D. there is a control group and a treatment group.

ID: Test A Ex 1.2.1

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6. You are asked to study the causal effect of hours spent on employee training (measured in hours per worker per week) in a manufacturing plant on the productivity of its workers (output per worker per hour).

Write in the box the option *letter* (a, b, c or d) on the right that best describes the statement on the left.

Choose a random group of employees to receive ten hours per week in additional training for a period of four weeks. Then, estimate the difference in productivity between workers who received the additional training and those that did not. Option [ ] best describes this statement.

Data on hours spent on training a group of ten different employees in a certain day. Option [ ] best describes this statement.

Data on hours spent on training the same employee for seven consecutive days. Option [ ] best describes this statement.

Data on hours spent training for a group of ten different employees for seven consecutive days. Option [ ] best describes this statement.

a. an observational time series data set.

b. an observational panel data set.

c. an ideal randomized controlled experiment.

d. an observational cross − sectional data set.

Answers c

d

a

b

ID: Review Concept 1.3

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7. Analyzing the behavior of unemployment rates across U.S. states in March of 2010 is an example of using:

- **A.** cross-sectional data.
- **B.** time series data.
- **C.** experimental data.
- **D.** panel data.

Answer: A. cross-sectional data.

ID: Test A Ex 1.3.2

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8. Analyzing the effect of minimum wage changes on teenage employment across the 48 continental U.S. states from 1980 to 2010 is an example of using:

- **A.** having a treatment group versus a control group, since only teenagers receive minimum wages.
- **B.** panel data.
- **C.** time series data.
- **D.** cross-sectional data.

Answer: B. panel data.

ID: Test A Ex 1.3.3

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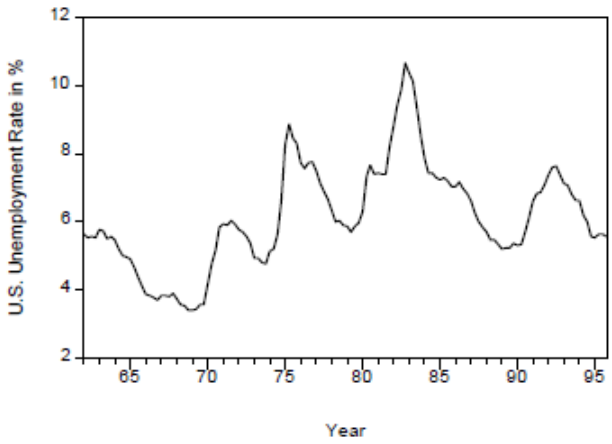
9. The accompanying graph is an example of:



- **A.** experimental data.
- **B.** cross-sectional data.
- **C.** longitudinal data.
- **D.** a time series.

Answer: D. a time series.

ID: Test A Ex 1.3.4

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10. Which type of experimental or observational data in econometrics contain multiple entities observed for two or more time periods?

- **A.** time series data.
- **B.** panel data.
- **C.** randomly generated data.
- **D.** cross-sectional data.

Answer: B. panel data.

ID: Test A Ex 1.3.5

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11. Studying inflation in the United States from 1970 to 2010 is an example of using:

- **A.** time series data.
- **B.** randomized controlled experiments.
- **C.** panel data.
- **D.** cross-sectional data.

Answer: A. time series data.

ID: Test B Ex 1.3.3

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12. The reason why economists do not use experimental data more frequently is for all of the following reasons *except* that real-world experiments:

- **A.** have flaws relative to ideal randomized controlled experiments.
- **B.** cannot be executed in economics.
- **C.** with humans are difficult to administer.
- **D.** are often unethical.

Answer: B. cannot be executed in economics.

ID: Test B Ex 1.3.4

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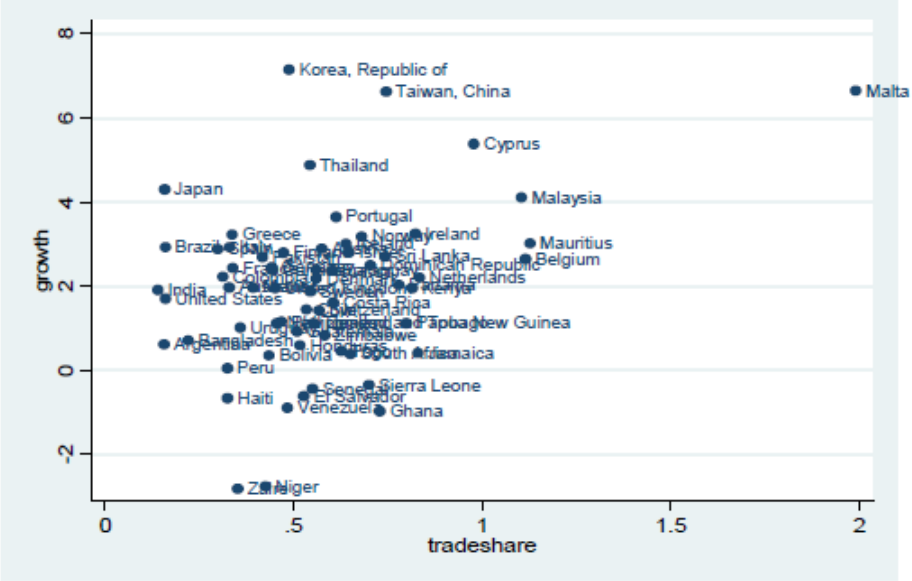
13. In the graph below, the vertical axis represents average real GDP growth for 65 countries over the period 1960–1995, and the horizontal axis shows the average trade share within these countries.



This is an example of:

- **A.** longitudinal data.
- **B.** cross-sectional data.
- **C.** a time series.
- **D.** experimental data.

Answer: B. cross-sectional data.

ID: Test B Ex 1.3.5