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Class: 3rd stage
Subject: Econometrics
Sample question
First Semester

Q1 / Write the difference between of the following.
1- Time series data **&** Cross-section data.
2- Simple linear regression model **&** Multi linear regression
3- Dependent variable **&** Independent variable
4- β_0 parameter **&** β_1 parameter
5- Standard Deviation (σ) **&** Coefficient of Determination (R^2)
6- T-test **&** Coefficient of Determination (R^2)
7- Parameter **&** Observations
8- Yi parameter **&** Xi parameter
9- β_i parameter **&** ui parameter
10- Economic Policymaking **&** Forecasting
11- Criterion of Statistical **&** Standard tests
12- β_1 Equation in a Real way **&** β_1 Equation a Deviation way

Q2 / what is Econometrics?

Q3 / what is the Econometrics Models?

Q4 /explain the Aims of econometrics**.**

Q5 / explain the Types of data in Econometrics, and describe each of them in summery.

Q6 / What are the Specification of the model?

Q7 / What are the Estimation of the model?

Q8 / What are the Testing of the model?

Q9 / What are the Application of the model?

Q10 / explain the simple linear regression model, and describe the linear models.

Q11 / explain the ordinary least squares method, and why use this method.

Q12 / What are the reasons for inserting a random variable (UI) into the model?

Q13 / What are the Types of quantitative variables?

Q14 / what is the EViews?

Q15 / Describing the Structure of a Workfile in EViews?

Q16 / How to Create The Equation Object in Eviews?

Q17 / explain the following expressions then give an example for each of them.

1- Model
2- Econometrics Forecasting
3- **β0** parameter
4- **β1** parameter
5- **ui** parameter
6- Dependent variable
7- Independent variable
8- Coefficient of Determination (R^2)
9- Standard Deviation (σ)

10- T-test
11- parameter
12- Observations
13- Hypothesis
14- Degree of freedom
15- Time series data
16- Cross-section data
17- Panel data:
18- Dummy variable data

Q18 / choose the right answer choice

- **Econometrics is the branch of economics that _____.**
  a. studies the behavior of individual economic agents in making economic decisions
  b. develops and uses statistical methods for estimating economic relationships
  c. deals with the performance, structure, behavior, and decision-making of an economy as a whole
  d. applies mathematical methods to represent economic theories and solve economic problems.
  - **Variables from period data are called _____.**
  a. cross-sectional data   **b. time series data**   c. observational data   d. panel data

- **The term 'u' in an econometric model is usually referred to as the _____.**
  a. error term   b. parameter   c. hypothesis   d. dependent variable

-**The parameters of an econometric model _____.**
a. include all unobserved factors affecting the variable being studied
b. describe the strength of the relationship between the variable under study and the factors affecting it
c. refer to the explanatory variables included in the model
d. refer to the predictions that can be made using the model

-**Which of the following is the first step in empirical economic analysis?**
a. Collection of data   b. Statement of hypotheses   **c. Specification of an econometric model**
d. Testing of hypotheses

- **A data set that consists of a sample of individuals, households, firms, cities, states, countries, or a variety of other units, taken at a given point in time, is called a(n) _____.**
  a. cross-sectional data set   b. longitudinal data set   c. time series data set   d. experimental data set

- **Data on the income of law graduates collected at different times during the same year is_____.**
a. panel data
b. experimental data
c. time series data
d. cross-sectional data

-**Which of the following is an example of time series data?**
a. Data on the unemployment rates in different parts of a country during a year.
b. Data on the consumption of wheat by 200 households during a year.
c. Data on the gross domestic product of a country over a period of 10 years.
d. Data on the number of vacancies in various departments of an organization on

-**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 birth rate, death rate and population growth rate in developing countries over a 10-year period.

c. Data on the income of 5 members of a family on a particular year.
d. Data on the price of a company's share during a year.

-. _____ has a causal effect on _____.
a. Income; unemployment   b. Height; health   **c. Income; consumption**   d. Age; wage

- **A dependent variable is also known as a(n) _____.**

a. explanatory variable   b. control variable   c. predictor variable   **d. response variable**

- **If a change in variable x causes a change in variable y, variable x is called the _____.**
a. dependent variable   b. explained variable   **c. Independent variable**   d. response variable

- **In the equation $y = \beta_0 + \beta_1 x + u$, β_0 is the _____.**
a. dependent variable   b. independent variable   c. slope parameter   **d. intercept parameter**

- **What does the equation $y = \beta_0 + \beta_1 x_1 + u$?**
a. The explained sum of squares   b. The total sum of squares
c. The sample regression function   d. The population regression function

- **The value of R^2 always _____.**
a. lies below 0   b. lies above 1   **c. lies between 0 and 1**   d. lies between 1 and 1.5

- **Which of the following is a statistic that can be used to test hypotheses about a single population parameter?**
a. F statistic
b. t statistic
c. Ý statistic
d. **R^2**

Q19 /which of the following statements is true?

1- Standard errors must always be positive.   True
2- A cross-sectional data set consists of observations on a variable or several variables over time. False
3- A time series data is also called a longitudinal data set.   False
4- R^2 is the ratio of the explained variation compared to the total variation.   True

Q20 / The following data represent the quantities of a particular commodity (Yi) and its price (Xi) during specific time period:

n	$\sum Y_i$	$\sum X_i$	$\sum X_i^2$	$\sum X_i Y_i$	$\sum x_i^2$	$\sum y_i^2$	$\sum x_i y_i$	$\sum \hat{y}_i^2$	$\sum e_i^2$
12	756	108	1020	6960	48	894	156	507	386.98

Required :

1- Supply function estimation and explanation.
2- Calculation of the coefficient of determination (R^2).
3- Calculate the standard deviation (SD) to determine the degree of confidence of the estimates.

Econometrics | Econometrics question |

4- Calculation of the t-test for the significance of the estimated parameters.

Note: the t- table in the level of significance (0.05) and degrees of freedom (n-k=10) equal to (2.228).

Q21/ The data listed below is the relationship between the quantity supplied of goods (Yi) and the price of the goods (Xi).

Y_i	69	76	52	56	57	77	58	55	67	53	72	64
X_i	9	12	6	10	9	10	7	8	12	6	11	8

Required: 1- Estimate the supply function with economic Explanation.

2- Calculation of the coefficient of determination (R^2) and their Explanation.

3- Calculate the standard deviation (SD) to determine the degree of confidence in the estimates and their Explanation.