

University of OEB

Academic Year: 2023/2024

Department of Economic Sciences

Third Year Licence: Quantitative Economics

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Lecture 01: Introduction to the Quantitative Economics

Quantitative economics is a branch of economics that emphasizes the use of mathematical and statistical techniques to analyze economic phenomena, make predictions, and test hypotheses. It involves the application of mathematical models, statistical methods, and econometric techniques to economic data in order to better understand economic relationships, make informed policy decisions, and conduct empirical research.

At its core, quantitative economics relies heavily on mathematical modeling. Economists construct mathematical equations and models to represent various economic relationships and behaviors. These models can range from straightforward supply and demand equations to intricate systems of differential equations that capture the dynamics of an entire economy. The mathematical framework allows economists to simulate economic scenarios, conduct thought experiments, and test the validity of economic theories.

Quantitative economists also excel at economic forecasting. They develop sophisticated models that use historical data and economic indicators to predict future economic outcomes. These forecasts can be instrumental in helping governments plan their budgets, businesses make production and marketing decisions, and individuals navigate their financial choices.

Vocabulary:

Econometric techniques: methods and tools used in the field of economics to analyze and understand economic relationships and make predictions based on empirical data.

Mathematical models: simplified representations of real-world systems or phenomena using mathematical equations, symbols, and relationships.

Statistical methods: a set of techniques and procedures used for collecting, organizing, analyzing, interpreting, and presenting data.

Financial: the matters related to finance, which is the management of money and other financial assets.

Reading Comprehension

- 1- What is Quantitative Economics?
- 2- Why does quantitative economics involve the application of mathematical models, statistical methods, and econometric techniques?
- 3- What is the purpose of using mathematical frameworks?
- 4- What is the program used by quantitative economists?
- 5- True or False: Quantitative economics helps governments plan their budgets, businesses make production and marketing decisions, and individuals navigate their financial choices.
- 6- Translate the words into Arabic: Econometric techniques, mathematical models, statistical methods, financial.

Grammar: The Present Simple

The present simple tense is used to describe general facts, habits, routines, and events that are always true.

I	Stem	invest
You	Stem	invest
She/He/It	Stem+ s/es	invests
We	Stem	invest
You	Stem	invest
They	Stem	invest

Activity: Let's practice using the present simple tense in economics-related sentences. Fill in the blanks with the correct form of the verb.

- Economists_____ (use) mathematical models to understand economic relationships.
- Statistical analysis _____ (play) a crucial role in quantitative economics research.
- Researchers_____ (collect) data to test hypotheses and make predictions.
- The government often _____ (rely) on econometric techniques for policy analysis.
- Quantitative economists often _____ (present) their findings through charts and graphs.

Writing:

Write a paragraph in which you describe the job that you want after you graduate.

- Follow the following questions:
 - What is the job?
 - Why do you choose this job?
 - Describe the job.