

# MICROECONOMICS I. B





NEW

SZÉCHENYI PLAN

# MICROECONOMICS I.

## B

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Course Material Developed by Department of Economics,  
Faculty of Social Sciences, Eötvös Loránd University Budapest (ELTE)

Department of Economics, Eötvös Loránd University Budapest

Institute of Economics, Hungarian Academy of Sciences

Balassi Kiadó, Budapest



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ELTE Faculty of Social Sciences, Department of Economics

# Microeconomics I. "B"

week 2

## THE NATURE AND SCOPE OF ECONOMICS, PART 2

Authors:

Gergely Kőhegyi, Dániel Horn, Klára Major  
Supervised by Gergely Kőhegyi

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The course was prepared by Gergely Kőhegyi, using *Jack Hirshleifer, Amihai Glazer and David Hirshleifer (2009) Mikroökonómia. Budapest: Osiris Kiadó, ELTECON-books (henceforth HGH)*, and *Gábor Kertesi (ed.) (2004) Mikroökonómia előadásvázlatok. <http://econ.core.hu/kertesi/kertesimikro/> (henceforth KG)*.

The economic system

Decision-making agents in the Economy

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# Elements of the economic system

- Individuals (consumers): The basic units of the economy. They decide over what and how much to consume and what sort of and how much resource to offer in exchange.
- Business firms (companies, producers): artificial units, consisting of people, who cooperate in order to produce - to transform resources into goods or services demanded by the people. So each company is owned by one or more people, directly or indirectly.
- Governments: artificial units, which we consider to be a sum of the people. Its job is to set the legal framework for the economy and to redistribute (a part of) the income. Governmental decisions are based on political and not market mechanisms.
- Other organizations: trade unions, cartels, clubs, foundations, churches, etc. (these can usually be traced back to one of the above types).

# Elements of the economic system (cont.)

- The objects of economic decisions are commodities or goods. These terms are usually understood to include not only merchandize but also services. Services represent a flow of benefits over a period of time, which might be derived either from physical goods (e.g. shelter provided by a house) or else from human activities (e.g. the entertainment provided by a concert).

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# Elements of the economic system

- Economic activities:
  - Consumption:
    - the ultimate economic activity
    - in a sense the explanation for all the others.
    - In their consumption decisions, individuals choose their goods they like the best, given their incomes and the prices they face.
  - Production
    - transform resources into consumable goods.

## Note

*To be economically rational, production should represent conversion from less desired to a more desired configuration.*

- Exchange (trade)
  - like production it is also a kind of conversion: sacrifice of some goods or resources for others.
  - It does not create or destroy goods, but only reshuffles them among the different decision making agents.

# Elements of the economic system (cont.)

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## Note

*From a social point of view exchange is distinguished from production by the fact that the totals of commodities are unaffected.*

# Elements of the economic system (cont.)

Several model can be used to explain the same phenomenon, usually. We can treat a phenomena as consumption, or production or even as an exchange. It depends on what sort of features of that phenomena we would like to explain. Let us identify the models in the following cases:

- I am going to have lunch at the cafeteria.
- I run a cafeteria.
- Bilking on the bus or buying a ticket.

# Elements of the economic system (cont.)

- I am going to have lunch at the cafeteria.
  - as consumption: from a given amount of money (income), at given prices what sort of food (good) I choose.
  - as production: eating a certain amount of food (resource) how much work (services) I am capable of
  - as exchange: I exchange my given amount of money (goods) to a given amount of food (goods), just as many other people do. How does the exchange rate of food/money will change due to this?
- I run a cafeteria.
  - as consumption: from a given amount of money (income), at given prices what sort of raw materials (goods) I buy.
  - as production: using a certain amount of raw materials (resource) what sort of food (good) I will prepare
  - as exchange: I exchange the given amount of food (good) to a given amount of money (good), just as many other cafeterias. How does the exchange rate of food/money will change due to this?
- Bilking on the bus or buying a ticket.

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# Elements of the economic system (cont.)

- as consumption: from a given amount of money (income), at given prices (ticket, expected punishment) which combination of goods will I choose (travel+little money or travel+fear+more money).
- as production: for a given service (being on the other side of the town at a given point in time) how much resources should I sacrifice
- as exchange: as everyone else on the bus I exchange my goods (money as price of the ticket or as expected fee for bilking) to a service. How does the price of ticket or the punishment for bilking change due to this?

An economic agent can appear in many roles as well:

- A book store can be a consumer when buying books from publishers and producer when setting the prices for these books.

# Elements of the economic system (cont.)

- A local government can be in the government role, when issuing statutes, collecting taxes or giving out social assistance. But it could also be consumer when ordering a construction of a new school from a company, or a producer when running a school (offering educational services to families).
- A parent can be a consumer when goes for shopping, producer when in her/his spare time cooks food; or government when creates incentives for the kids ("if you don't eat that spinach, then no dessert for you").

## Note

*Depending on what we use to describe a phenomena sets (more-or-less) what we take to be defined inside the model, and what are the exogenous factors.*

# Mathematical tools and models

The requirement of numerical forecast and strict logical structure in economics necessitates quantitative (mathematical) methodology:

- functions
- graphs
- conditional maximization-minimization

Parts of a mathematical model (that you *always* have to be able to identify):

- variables (in economics *endogenous variables*): their values are set within the framework of the model
- parameters (in economics *exogenous variables*): their values are set outside the framework of the model, so the values are given with the model
- functions: describe the relationship between the variables

# Mathematical tools and models (cont.)

E.g.: A company transports building rubble. It charges 2000 HUF for a cubic meter. It has 2 lorries, and each can carry 10 cubic meter. Let's assume that the cost of a transport (independent of the amount and the distance) is 5000 HUF.

- How does the profit ( $y$ ) depend on the amount of rubble transported? (define the function, and draw a graph!)
- How would the function change if the company had unlimited lorries?
- Identify the (endogenous) variables and the parameters (the exogenous variables) in the model.
- How much rubble should be transported in order to gain 16 000 HUF profit?



# Mathematical tools and models (cont.)

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- How does the profit ( $y$ ) depend on the amount of rubble transported? (define the function, and draw a graph!)

$$y = f(x) = \begin{cases} 0 & \text{ha } x \leq 0 \\ 2000x - 5000 & \text{ha } 0 < x \leq 10 \\ 2000x - 10000 & \text{ha } 10 < x \leq 20 \end{cases}$$

- How would the function change if the company had unlimited lorries?

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# Mathematical tools and models (cont.)

- How would the function change if the company had unlimited lorries?

$$y = f(x) = \begin{cases} 0 & \text{ha } x \leq 0 \\ 2000x - 5000 & \text{ha } 0 < x \leq 10 \\ 2000x - 2 * 5000 & \text{ha } 10 < x \leq 2 * 10 \\ \vdots & \\ 2000x - i * 5000 & \text{ha } (i - 1) * 10 < x \leq i * 10 \\ \vdots & \\ 2000x - n * 5000 & \text{ha } (n - 1) * 10 < x \leq n * 10 \end{cases}$$

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- Identify the (endogenous) variables and the parameters (the exogenous variables) in the model:
  - independent variable: amount of rubble transported ( $x$ )
  - dependent variable: income ( $y$ )
  - parameters: number of lorries, cost of transportation. ( $2, n, 5000, 2000$ , etc.)
- Usually a quadratic equation  $y = f(x) = ax^2 - bx + c$ 
  - independent variable:  $x$
  - dependent variable:  $y$
  - parameters:  $a, b, c$
- How much rubble should be transported in order to gain 16 000 HUF profit?

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# Mathematical tools and models (cont.)

- How much rubble should be transported in order to gain 16 000 HUF profit? (8 and 10,5 cubic meter)
- What does the inverse function mean? What are the conditions for a function to be invertible?

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# Microeconomics versus Macroeconomics

- A typical microeconomic problem: if a company lowers its price by 5 percent on a market, how would its profit change?
- A typical macroeconomic problem: if the government can lower unemployment by 5 percent, how would the price level change?  
*That is*
- A *microeconomics* deals with the decisions of well defined economic units, separate markets and their interactions.
- A *macroeconomics* deals with the economy as a whole, with aggregated markets and their interaction.

## Note

*Is there a fundamental difference between the methodology of micro- and macroeconomics? If we take our principles seriously then there is not! The two has to be in harmony, so microeconomics founds macroeconomics.*

# Fields and borderlands of economics

## Microeconomics

Market theory and marketing,

Business finance

Business theory

Economic regulation  
and Economic policy

## Macroeconomics

Development economics

Bank finance

Regional economics

Where do data come from for the models? Statistics, econometrics, Accounting, etc.

## Note

*Microeconomics, due to its special logic and use of notions, can be considered as the language for all economic subjects.*

*Microeconomics will be used in almost all of the economic subjects you will study.*

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# Finding solutions to social problems as an economist

## Finding solutions to social problems

Problem	Solution	Possible adverse consequences
1. Our country's steel producers are threatened by competition from imports.	Impose a tariff on imported steel.	a) The price of steel will rise, so steel-using industries will have higher costs and will have to raise prices to consumers. b) Foreigners, because they will be selling less steel to us, will buy fewer of our country's exports.
2. Apartment rents are rising, putting decent housing out of reach for the poor.	Freeze apartment rents.	a) Landlords will skimp on upkeep and repair of apartments. b) In the longer run, fewer rental units will be constructed.

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# Finding solutions to social problems as an economist (cont.)

## Finding solutions to social problems

Problem	Solution	Possible adverse consequences
3. Women's wages are lower than men's.	Adopt "comparable worth" laws requiring equal pay for men and women doing comparable jobs.	a) Employers will become less willing to hire women. Costly bureaucratic and judicial proceedings will be involved in setting wages.
4. Commercial fishing for tuna kills large numbers of dolphins.	Require domestic fisheries to use special nets that let dolphins escape.	a) Consumers will have to pay more for tuna. b) Foreign fisheries, not subject to our laws, will take over more of the tuna trade.

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# Finding solutions to social problems as an economist (cont.)

Finding solutions to social problems		
Problem	Solution	Possible adverse consequences
5. Medical costs are very high.	Require government to pay a share of medical bills, especially for the poor.	a) Doctors' bills and hospital charges will rise even more than they have previously. b) Taxes will have to go up.
6. Many people are addicted to drugs.	Toughen enforcement of narcotics laws.	a) Street prices of narcotics will rise, forcing addicts to steal to feed the habit. b) Huge financial stakes in the narcotics trade will lead to more corruption of the police and judiciary.
7. Many people are addicted to drugs.	Abandon enforcement of narcotics laws.	Increased availability and lower prices of narcotics will increase usage and addiction.

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# Objections against economics

- "Economists always conflict each other"
  - The power of debate
  - (HGH example 1.10) In what do economists usually disagree?
- "How come not all economist are rich? They should know how economy really works." (HGH example 1.2)
- "Economists are selfish" (HGH1.6 és HGH1.7 example)

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# Summary

- Economics as science and as method
- Principles
  - Cost benefit comparison (based on opportunity cost)
  - Scarcity
  - Rationality postulate
  - Modeling
- Economics as social science
  - Following self interest
  - Allocation mechanisms
  - Market interactions
  - Intended and unintended consequences
  - Market failures
  - System of incentives
  - Positive versus normative approach
- Economics as a science based on mathematics

# Summary (cont.)

- Fundamental modeling framework
  - Homo Oeconomicus
  - Production
  - Consumption
  - Exchange
- Fields of economics

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