BASICS OF BUSINESS ECONOMICS

Revision for mid-term 1 exam

- Mid-term exam dates are visible in Infoeduka
- Rule: 2 minutes per exam point (eg. Outcome of learning 2 has 17 points max, you write it 34 minutes)
- Questions in the exam are for 2 and 3 points.
- Be clear, concise and accurate when writing about theory and examples explaining theory.
- Read the questions carefully so as to answer what is actually asked and not what you think it is asked – „elephant and mouse answering”

	Minimal learning outcomes	Preferred learning outcomes
SET 1	I1 Present the basic elements of the economic system.	I1 Analyse the interaction of the basic elements of the economic system.
SET 1	I2 Explain market, supply, demand and the concept of elasticity of supply and demand.	I2 Evaluate the impact of various factors on market decisions, supply, demand and on the elasticity of supply and demand.
SET 1	I3 Analyse the factors influencing consumer behaviour and producer decisions.	I3 Interpret how different factors influence consumer behaviour and producer decisions.
SET 2	I4 Explain the characteristics of production inputs.	I4 Compare the characteristics of production inputs.
SET 2	I5 Explain the interaction of macroeconomic objectives, instruments and indicators.	I5 Analyse the impact of elements of economic activity on the economic results of the economy.
SET 2	I6 Explain the impact of various factors on economic growth and development.	I6 Analyse different strategies of economic growth and development.

How is it distributed on outcomes of learning?

SET	OL	MID-TERM EXAM 1	MID-TERM EXAM 2	SHORT TESTS/ SW	ATTENDANCE		MAX POINTS
S1	I1	8		2			10
	I2	17		3			20
	I3	17		3			20
S2	I4		14	2			16
	I5		19	3			22
	I6		12				12
	OUTSIDE OL				0		0
	TOTAL	42	45	13	0	0	100

Outcome of learning 1

Definitions of economics

- *Economics is the science of choice. It studies how people choose to use scarce or limited production resources (labor, equipment, knowledge ...) to produce different goods and distribute them for consumption.*
- *Economics is the study of money, banking, capital and wealth.*
- *The economy asks what (which goods) should be produced, how they should be produced and for whom they should be produced.*
- *Economics is the study of how societies use scarce resources to produce valuable goods and distribute them to different people.*
- *Economics is the scientific study of how societies use resources to produce useful goods and distribute them to different people*

Common features of definitions

- **Economics is the study (science which studies) how societies use scarce resources to produce valuable goods and distribute them to different people in order to satisfy theirs needs and desires. (definition)**

Key elements of the definition

- Scarce resources
- Unlimited Needs
- Exchange for other goods

The law of scarcity

- **The law of scarcity says that if goods were not scarce then all human desires and needs could be met and resources should not be rationed, as literally everything could be produced - then there would be no basic problems in the economy contained in the questions of what, how and for whom to produce.**

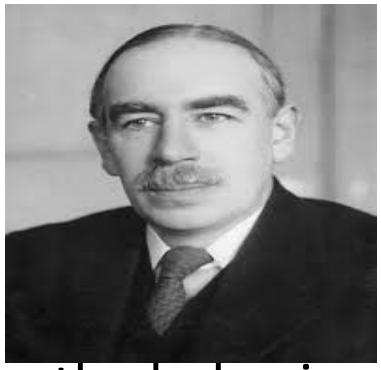
Economic good

- The goods are scarce because people want much more than what the economy can produce.
- Economic goods are scarce, not free, and society must choose between limited goods that can produce available resources

MICROECONOMICS

- A branch of economics that studies the behavior and functioning of microeconomic entities - individuals, households, enterprises and industries.
- The founder of microeconomics is Adam Smith (1723 - 1790), who in 1776 published "The Wealth of Nations", a kind of economic Bible in which he explained the functioning of the market economy.
- We consider him the father of the modern Western economy
- Fundamental issues: Rarity of resources and goods, human needs, value of goods, prices of factors of production, business behavior, consumer behavior, market, costs, income, profit, interest, wages, supply and demand ...

MACROECONOMICS



- Macroeconomics is a branch of economics that studies the behavior and functioning of the economy as a whole.
- The founder of macroeconomics is John Maynard Keynes (1883 - 1946) who in 1936 published the work "General Theory of Employment, Interest and Money ”where the foundations of macroeconomics are given.
- Unlike microeconomics, which is based on the functioning of the market, macroeconomics is based on state regulation of the economy.
- Basic issues: Selection and functioning of the economic system, total production and employment, national income, general economic balance, general price level, inflation ...

RELATIONSHIP BETWEEN MICRO AND MACROECONOMICS

- Microeconomics and macroeconomics are not separate economic disciplines. They complement each other because the activities of microeconomic entities take place in a macroeconomic environment.
- In addition, the net profits of some global companies are the same as the gross domestic product of some countries (and higher!)
- https: // www.businessinsider.com/25-giant-companies-that-earn-more-than-entire-countries-2018-7#johnson-and-johnson-generated-greater-revenues-in-2017-than- ethiopias-gdp-14

Theoretical economy is divided into :

Positive economics

- Positive economics researches functional and causal relationships between economic variables without judgment about them
- It studies economic occurrences such as they are
- It is also called „Economic analysis”
- Example : “ Unemployment in 2003, in Croatia was over 17 % of the labour force” ; "Tourism is the main economic branch in Croatia "

Normative economics

- Normative economics contains :

- Judgment on economic reality very often from an ethical point of view

- Vision of economic reality

- Instructions (rules or norms)

- It says what economic occurrences should be

- Example : “ High unemployment in Croatia is economically and politically unacceptable so employment policies must be one of the priorities of the overall economic policies . ” "Croatia should not rely so much on tourism, but on developing manufacturing."

Link between efficiency and scarcity of resources

- When we produce as many goods and services as possible with as few resources as possible, then we operate efficiently.
- through efficiency we increase the success of production, earnings, etc.
- Being efficient means that we have achieved a very good result with very few resources.
- Efficiency in learning means that in a short time you can master big amounts of learning material.
- Efficient investment - little money invested and getting high return.
- Efficiency is related to the relationship between what we have invested and how much we have earned
- To be efficient, we need to think about three basic problems of economic organization - what, how and for whom to produce

3 basic problems of economic organization

- What to produce - society determines what to produce (what goods and services) given the scarce resources it has (wood or furniture ?; basic sewing or designed clothing?, IT or tourism?) and given what the consumers in society want to buy
- How will it be produced - who will produce, with what technology, what production techniques will be used (sophisticated software or cheap labor?). E.g. will we produce electricity from coal, oil or from solar energy?
- For whom will it be produced - how will the total production of the country be divided - will the rich have a majority and the poor a minority? Producers want to gain profit and will produce for those who have money. However, what with the poor people – how will the society take care of them (dole, universal income or do they have to work to eat?)

Different economic systems

- Society answers the questions of what, how and for whom in different ways
- We distinguish three basic ways of organizing an economy

1. Market economy - one in which individuals and private companies make major decisions about production and consumption. (South Korea)

- *Companies produce the goods that bring the biggest profits (what) using the cheapest production techniques (how). Consumption is determined by the decisions of individuals on how to spend wages and profits (for whom).*

- Extreme market economy - " laissez - faire or let them work" (the state does not interfere in economic decisions at all)

2. Command economy - the state makes all important decisions on production and consumption, it owns resources, directs the company's operations and is the employer of most workers (former USSR, Yugoslavia, today Cuba)

MIXED ECONOMIES

- The vast majority of modern societies are mixed economies with elements of a market and command economy
- Today, for example. in the USA, most economic decisions are made on the market, but the state is important for passing laws that regulate economic life, the state provides education services, controls pollution etc.
- The state "redeems" the sins of the private sector through taxpayers' money - 2008 US banking crisis (bailout fund), saving the U.S. auto industry with U.S. taxpayer money

The production-possibility frontier

- An economic model that describes what and in which quantities a society can produce
- It is based on several assumptions:

- Countries, states do not have unlimited quantities of goods
  - All resources are limited
  - Technology is also limiting
- You have to choose between limited options

Inputs and outputs

- **Inputs** are commodities or services that are used to produce goods and services. An economy uses its existing technology to combine inputs to produce outputs.
- **Outputs** are the various useful goods or services that result from the production process and are either consumed or employed in further production.
- Consider the “production” of pizza. We say that the eggs, flour, heat, pizza oven, and chef’s skilled labor are the inputs. The tasty pizza is the output.

Factors of production

- **Another term for inputs are factors of production**
- **These are:**

Land - all natural resources collectively referred to as the Land (eg forests, drinking water, arable and non-arable land, fish stocks, etc.)

Labour

-The totality of mental and physical knowledge, skills and abilities that a person has and can use in the production process

Capital

-Durable goods produced with the intention of producing and increasing the value of other goods

The production-possibility frontier -PPF

Shows the maximum quantity of goods that can be efficiently produced by an economy, given its technological knowledge and the quantity of available inputs.

Graphical representation of PPF and the concept of opportunity cost

If you want to produce more of one good, you must necessarily produce less of the other good (if we are on the frontier of production capacity - all resources are max used)

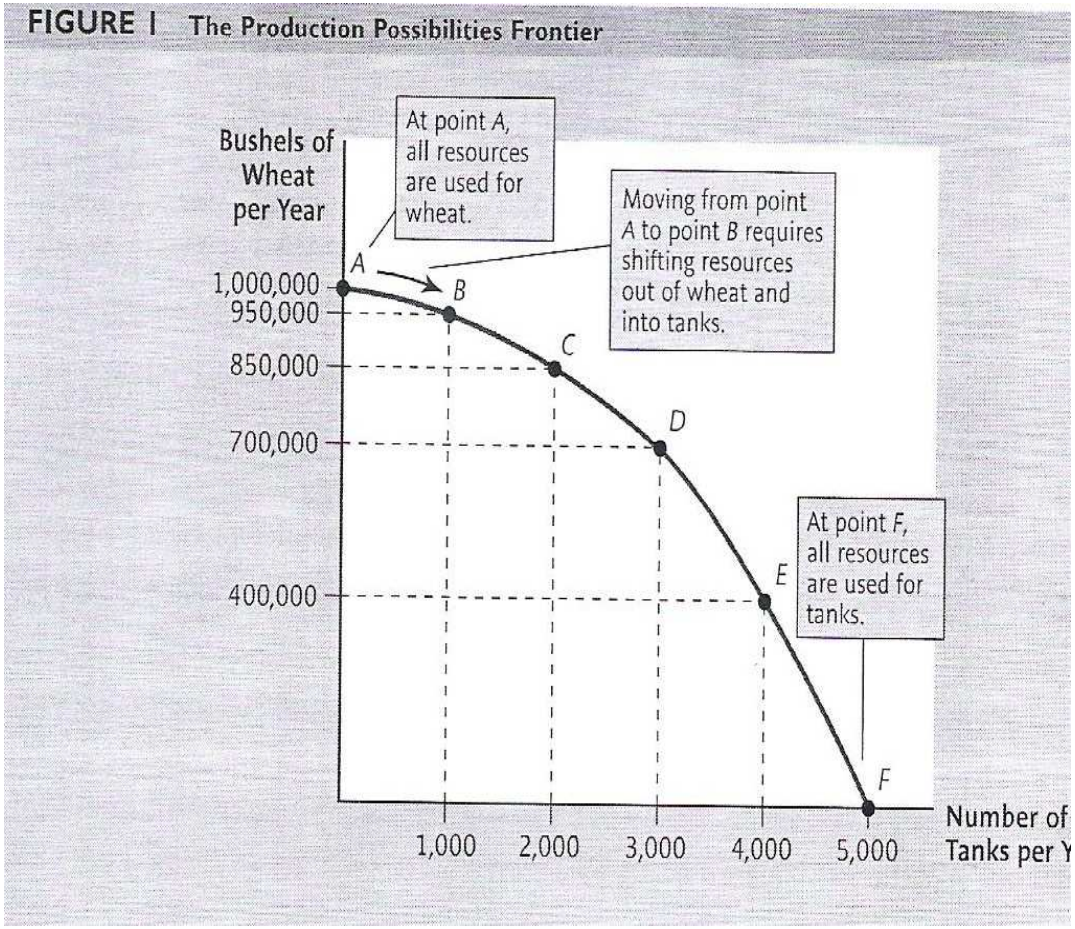
This is called **opportunity cost in economics**

Opport.cost. is equal to the amount of good that needs to be given up in order to get more of the other good produced

For example, if we are at point B where we produce 1000 tanks and 950,000 bushels of wheat, to move to point C - production of additional 1,000 tanks (for a total of 2,000) requires that we reduce wheat production to 850,000 bushels, ie less by 100,000 bushels

The opportunity cost of producing an additional 1,000 tanks is 100,000 bushels of wheat that we have to give up.

The more tanks we produce, the more wheat production we have to give up - the law of increasing opportunity costs.



Why are opportunity costs rising/increasing as we move along the PPF curve?

- **Because most resources—by their very nature—are better suited to some purposes than to others**.
- If the economy were operating at point *A* - we'd be using *all* of our resources for wheat, even those that are much better suited to make tanks. People who would be better at factory work than farming would nevertheless be pressed into working on farms. And we'd be growing wheat on all the land available, even land that would be fine for a tank factory but awful for growing crops.
- As we move rightward along the PPF, say from *A* to *B*, we would shift resources out of wheat production and into tank production. But we would *first* shift those resources *best suited* to tank production—and least suited for wheat. When these resources are shifted, an additional 1000 tanks causes only a small drop in wheat production. This is why, at first, the PPF is very flat: a small vertical drop for the rightward movement.
- As we continue moving rightward, however, we are forced to shift resources away from wheat—resources that are less and less suited to tanks and more and more suited to wheat. As a result, the PPF becomes steeper.

Efficient and inefficient economy

Efficient

- The economy operates at the PPF
- Limited resources are used efficiently - everything that can be obtained is obtained from the resources that are in possession
- This means:
  - An increase in the production of one product can only be achieved at the expense of a decrease in the production of another product
- Points ON the PPF curve

Inefficient

- there are unemployed resources, the economy is not on its production-possibility frontier at all but, rather, somewhere *inside* it.
- It is possible to increase the production of one product without causing a decrease in the production of another product
- It occurs due to inefficiency in one of the stages of the production process

PPF shift

- **Technological advances** can change the PPF
- It can increase it, move it from the origin of the chart
- Production possibilities are increasing, more can be produced
- A shift is also achieved when the **amount of resources increases**
- When technology or the amount of resources change, the PPF curve changes its position and the economy can produce more products with full employment of available resources

Outcome of learning 2

Market

- A place where supply and demand meet and prices are formed
- The mechanism by which buyers and sellers determine the price and quantity of a good bought and sold

- **A mechanism by which buyers and sellers interact to determine prices and exchange goods and services.**
- **The market can be organized physically e.g. marketplace, or via Internet e.g. eBay**

Key elements of the market : price and quantity!

- **Price** =

- the value of a good, expressed in money, represents the conditions under which people and companies voluntarily exchange various goods
- prices are signals to the producer / consumer; if consumers are looking for more specific goods / services, the price will rise sending a signal to producers that more supply is needed (increasing the production of existing producers, but also increasing the number of new producers coming to that market)

- **Quanitity of good or services** - quantities depend on prices - the lower the prices, the lower the quantity of goods offered, the higher the prices, the greater the incentive for producers to offer more goods

Emergence and development of the market

- Markets arose from the need to **trade and exchange** products between **specialized producers and consumers**
- Without the market, individuals and states would be limited in their spending on what they can produce themselves
- The market allows **specialization** in the production of one or more products, and consumption of a wide range of goods and services obtained **by exchange with other countries**
- Specialization enables **the production of higher output from available resources** (inputs) - ie higher productivity

Input specialization

- **Labour** - specialization is achieved when people focus on special jobs, those in which they are the best, and thus make the best use of their specific skills (eg web-site development - front end , back end , full - stack developers)
- The fact of economic life - make **the division of labour** so that specialized professionals do the smaller steps of the entire work rather than everyone doing everything but being mediocre. It allows eg. tall people to become basketball players, people who have good persuasive power to become sales experts, etc.
- Sometimes it takes many years to acquire the knowledge needed for a certain career (15 years of postgraduate study to be a neuro-surgeon with a degree)
- When is there too little specialization and when is there too much? Fachidiot (one-track specialist) or multipractitioner?

Input

- **Land** as a factor is also specialized - some land is better for growing vines, and some is better for oil exploitation
- **Capital** is also specialized - you will use a tractor to cultivate the land, a specialized robot for making chips

How has specialization contributed to market development?

- Specialization has contributed to market development because people and entire countries have specialized in producing what they are best at.
- No country produces all the products in the world, but those in which they will make the most significant **gains from trade** - ie we specialize in producing what we are most efficient at, we consume these products both domestically and we export it to other countries, and we import product or services from other countries (which are unefficient to be produced in our countries)

To summarize….

- Specialization and trade are the key to high living standards. By specializing, people can become highly productive in a very narrow field of expertise. People can then trade their specialized goods for others' products, vastly increasing the range and quality of consumption and having the potential to raise everyone's living standards.

Advantages and disadvantages of the free market

For

- It enables formal legal freedom and equality of citizens as entrepreneurs and consumers
- It encourages initiative, productivity and entrepreneurship
- In the given circumstances, it represents the efficient mechanism of allocation and use of rare resources – perfect competition and no market failures

Against

- The emergence of monopolies that reduce production and increase price
- The emergence of mass unemployment
- Environmental pollution and other negative externalities
- Inequality in the distribution of income and consumption
- Cyclical movement of the economy

(recession - expansion)

- Lack of care for the development of public goods

Conclusion

The free market mechanism is not perfect!

How state corrects market failures ?

Inefficiency (monopoly , externalities and lack of public goods)

- Antitrust and antitrust laws
- Laws against pollution , regulations against smoking
- Building parks, river dams, etc.

Inequality (uneven distribution income and wealth)

- Progressive taxation of income and property
- Aid for lower income citizens

Macroeconomic problems

- Macroeconomic problems (business cycles , unemployment , inflation , economic rise / fall)
- Monetary policy : control of money supply, interest rates…
- Fiscal policy : taxation , subsidies , state consumption …
- Building infrastructure : schools, roads, hospitals etc.

Circular flow of the market economy

- The economy consists of millions of participants
- Each participant is engaged in economic activities - production, sales, purchases, employment, etc.
- The circular flow of the market economy simplifies thinking about all the activities of all participants in the countries economy
- It shows how the economy is organized and how the participants of the economy interact

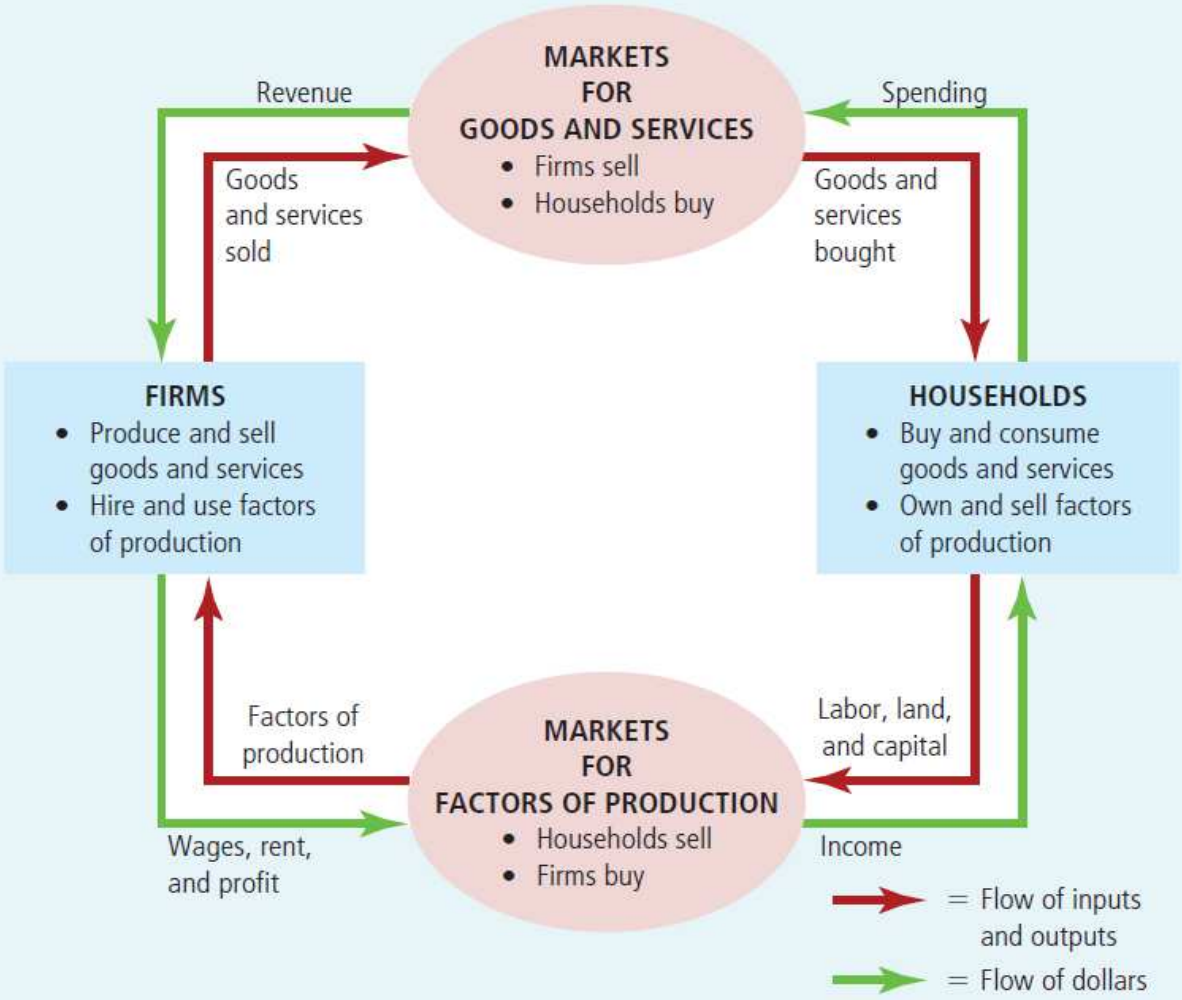


FIGURE 1

The Circular Flow

This diagram is a schematic representation of the organization of the economy. Decisions are made by households and firms. Households and firms interact in the markets for goods and services (where households are buyers and firms are sellers) and in the markets for the factors of production (where firms are buyers and households are sellers). The outer set of arrows shows the flow of dollars, and the inner set of arrows shows the corresponding flow of inputs and outputs.

Circular flow of the market economy (1)

- The economy is simplified, so it contains **two types of decision makers** :
  - **Households**
  - **Firms**
- They are the bearers of supply and demand

Characteristics of two types of decision makers:

- **Firms**
  - They produce goods and services
  - They use or buy factors of production: land, labor, capital to produce products / services
- **Households**
  - Owners of factors of production: land, labor and capital; sell those factors to firms
  - They consumer the goods and services that firms produce

Circular flow of the market economy (2)

- Households and firms interact in **two types of markets**
  - **Markets for goods and services**
    - Households - buyers of goods and services
    - Firms - sellers of goods and services
  - **Markets for factors of production**
    - Households - sellers of factors of production
    - Firms – buyers (buy and hire) of factors of production

Circular flow of the market economy (3)

- Inner circuit represent the flow of inputs and goods and services produced (outputs)

- Households sell labor, land and capital to firms in the markets for factors of production
- Firms use these factors to produce goods and offer services that are sold to households in the markets for goods and services
- Factors of production flow from households to firms, and income from wages, rents and profits flows from firms to households - so for the sale of factors of production households receive income
- With this income, they can buy goods that firms produce and offer on the market

Circular flow of the market economy (4)

- Outer part of the model is parallel flow of money

- Households spend money to buy goods and services from firms – they receive money because firms pay them for the usage of factors of production
- Firms use part of the sales revenue to pay for the usage the factors of production (workers' salaries, rent of space, rent of land etc. ...)
- The remaining income is the profit of the business owners, who are themselves members of a household
- Thus money spent on goods and services flows from households to firms, and income from wages, rents and profits flows from firms to households

Demand

- Def. Demand is the amount of goods and services that buyers are willing to pay for at a certain price.
- The demand schedule is a table that shows the quantity demanded at each price. The demand curve, which graphs the demand schedule, illustrates how the quantity demanded of the good changes as its price varies.

The law of downward-sloping (diminishing) demand

When the price of a commodity is raised (and other things are held constant), buyers tend to buy less of the commodity. Similarly, when the price is lowered, other things being constant, quantity demanded increases.

- Because a lower price increases the quantity demanded, the demand curve slopes downward.

Why is it happening?

- Quantity demanded tends to fall as price rises for two reasons:

- Substitution effect - if the price increases and our income remains the same, goods become more expensive. Consumers will substitute these goods for other similar but cheaper goods (cigarettes - tobacco)

- Income effect - if there is an increase in price, and my income is the same, I am realistically poorer and I will demand less of all goods. If gasoline prices double, I have in effect less real income, so I will naturally curb my consumption of gasoline and other goods

Substitutes and complements

Substitutes = are often pairs of goods that are used in place of each other, such as hot dogs and hamburgers, sweaters and sweatshirts, and cinema tickets and film streaming services.

- They are also two goods for which an increase in the price of one leads to an increase in the demand for the other

Complements = are often pairs of goods that are used together, such as gasoline and automobiles, computers and software.

- They are also two goods for which an increase in the price of one leads to a decrease in the demand for the other

Factors affecting demand

- The price of the good itself – increase in price leads to decrease in demand
- Prices of substitutes and complements
- Market size (mobile sales in Turkey and Croatia - because the Turkish market is much larger than the Croatian market, more mobile phones will be sold at any price)
- Average income (the higher the income, the higher the total demand for all the goods)
- Tastes and preferences (eg Valentine's Day and the price of roses - on Valentine's Day the price of roses rises due to increased demand)
- Special influences (demand for umbrellas in rainy London is higher than in dry Cairo)

Exceptions to the law of demand – upward sloping demand curve

a)Giffen paradox

- a good for which an increase in the price raises the quantity demanded (inferior goods- potatoes, cheap bread etc. – goods we buy when our income is low)
- If inferior goods represent large portion of our income (which means we have low income), then increase in all prices in the market (normal and inferior goods) will lead to us consuming even more of the inferior good (e.g. price of meat goes up – normal good, we eat more potatos- inferior goods)

b)Veblen effect

- Veblen good is a type of luxury good for which the demand for a good increases as the price increases (snobbery, status symbols, e.g. very expensive cars, champagnes etc.)
- If the price would go down, demand would also decrease

c) Speculation - Market bubbles

Supply

- Supply is the amount of a good that sellers are willing and able to sell
- table that shows the relationship between the price of a good and the quantity supplied, holding constant everything else that influences how much of the good producers want to sell **- supply schedule**

The law of supply

- **Other things being equal, when the price of a good rises, the quantity supplied of the good also rises, and when the price falls, the quantity supplied falls as well**

Factors affecting the supply

- Technology (e.g. robotics) – Technology reduces firms' costs, the advances in technology raise the supply of a product (firms can produce more at lower costs).
- Input prices - When the price of one or more of these inputs rises, producing any product is less profitable, and firms supply less of it. If input prices rise substantially, a firm might shut down and supply no product at all. - (labour costs in Asia vs Europe)
- Prices of related goods (vehicle producers can switch between producing cars and trucks)
- State policy (quotas / tariffs) – Raising quotas/tariffs will lower supply of products
- Number of sellers – the more the sellers, the greater the supply
- Special conditions (weather in agriculture) – bad weather hitting crops can decrease supply of it

DEFINITION OF PRICE ELASTICITY OF DEMAND

- The **price elasticity of demand** (sometimes simply called **price elasticity**) measures how much the quantity demanded of a good changes when its price changes.
- The precise definition of price elasticity is the percentage change in quantity demanded divided by the percentage change in price.

$$\text{Price elasticity of demand} = E_D$$
$$= \frac{\text{percentage change in quantity demanded}}{\text{percentage change in price}}$$

Coefficient of price elasticity of demand

We express the price elasticity of demand by the coefficient of price elasticity of demand

- **The coefficient of price elasticity of demand can be:**

- **Greater than 1 (price-elastic demand)**
- If a change in price of 1% leads to a change in the quantity demanded by more than 1%. - tourist arrangements (mass tourism - sun and sea)
- **Equal to 1 (unit-elastic demand)**
- The percentage change in price is equal to the percentage change in quantity demanded.
- **Less than 1 (price-inelastic demand) - eg. Cigarettes, goods you buy from a monopolist**
- If a change in price of 1% leads to a change in the quantity demanded of less than 1%.

Extreme cases - perfectly inelastic demand (eg drug addiction); perfectly elastic demand (roughly the marketplace)

What does the price elasticity of demand depend upon?

- Intensity of needs, ie whether it is a necessary or luxury good (necessity of that good)
- Substitutes
- Length of consumer reaction time
- What is the share of that good in the total income you earn

Intensity of need - necessity or luxury

- The greater the need for a good, the less elastic the demand for such a good is and vice versa.
- Necessary goods - necessity (eg bread, milk) are necessary for life and their purchase cannot be easily given up regardless of the price.
- Luxury goods (eg yacht, Rolex watch) can be easily given up, so the demand for such goods is more elastic.
- Need is also a matter of personality, which for some is a luxury for another is a necessity. If you make a living from renting a yacht, it is a necessity for you, so your demand for them is less elastic than the average person with a deeper pocket who uses a yacht to show of his/her wealth and as a „chick magnet”.

substitutes

- If a good has easily available substitutes, its demand is elastic - e.g. Holidays (mass tourism) in Croatia and Spain. If Croatia raises prices, tourists go to Spain.
- If a good does not have easily available substitutes, its demand is inelastic - e.g. petrol (if price of petrol goes up you cannot substitute it by diesel or gas)

Consumer reaction time

- This is the time the consumer has to respond to a change in price.
- The elasticity of demand is greater in the long run than in the short run, because consumers have more time to adapt to change.
- Eg when the price of a soda drops, it will not have a significant effect on demand in the first place, but with time and when consumers learn that prices are lower, they will start buying more of that particular type of soda.

Share in personal income

- Pr. Salt - it represents a small share of your consumption and your income, so your price elasticity of demand is less elastic i.e it is inelastic - you do not worry so much about the price of salt and if the price of salt somewhere in Zagreb drops by 10% you will not go searching for particular shop to buy cheaper salt.
- But for the iPhone 13, which represents a significant share of income, you will certainly react to price changes, ie your demand will be elastic and you will react to price changes. If somewhere in Zagreb price drops by 10% you will for sure go and search for the particular store.

Other demand elasticities - Income elasticity

$$\text{income elasticity of demand} = \frac{\text{percentage change in quantity demanded}}{\text{percentage change in income}}$$

- The **income elasticity of demand** measures how the quantity demanded changes as consumer income changes. It is calculated as the percentage change in quantity demanded divided by the percentage
- With respect to change in income we divide goods into: Normal goods(eg clothing) , luxury goods (eg luxury watch) and inferior goods (eg cheap chicken salami, cheapest bread, cheap greenhouse tomatoes)
- For most goods this elasticity is positive in sign (if income increases, we demand more of these goods) . However, for the so-called inferior goods it is negative (the higher the income, the lower the demand for them) .
- Inferior goods are those that are bought by people of low purchasing power. The increase in personal income leads to the fact that a person can afford, for example, food of better quality, so instead of tomatoes from the mall he/she will buy the same amount of tomatoes from organic farming. That is why the sale of cheap tomatoes from mass greenhouse cultivation will fall.

Other demand elasticities – cross-price elasticity of demand

$$\text{cross-price elasticity of demand} = \frac{\text{percentage change in quantity demanded of good 1}}{\text{percentage change in the price of good 2}}$$

- Measures how the quantity demanded of one good responds to a change in the price of another good. It is calculated as the percentage change in quantity demanded of good 1 divided by the percentage change in the price of good 2.-

Complements , substitutes and neutrals good

Complements - goods that are typically used together, such as computers and software.

- Coefficient cross elasticity is less than 0 (negative)
- Change in prices of one good induces the change in demand for another good in opposite direction
- If the price of petrol increases , the demand for cars will decrease (software and computer)

Substitutes - goods that are typically used in place of one another, such as hamburgers and hot dogs

- Cross elasticity coefficient is greater than 0 (positive)
- Change in prices one good induces the change in demand another good (substitute) in the same direction
- If price of Coca -Cola goes up, the quantity demand of Sky Cola will rise (or butter and margarine, hamburgers and hot dogs)

Neutral good – goods that do not affect one another (bread and computers)

- Coefficient of cross elasticity is equal to 0
- Change in prices one good does not affect the demand for another

Elasticity and revenue

- Businesses wonder if price increases will increase or decrease their revenue?
- Total revenue = price x quantity
- **1.** When demand is price-inelastic, a price decrease reduces total revenue.
- **2.** When demand is price-elastic, a price decrease increases total revenue.
- **3.** In the borderline case of unit-elastic demand, a price decrease leads to no change in total revenue.

Price Elasticity of supply

- Company's decisions also show greater or lesser reactions to price changes
- the **price elasticity of supply** is the percentage change in quantity supplied divided by the percentage change in price.

The exact definition of the price elasticity of supply, E_s, is as follows:

$$E_s = \frac{\text{percentage change in quantity supplied}}{\text{percentage change in price}}$$

Coefficient of price elasticity of supply

- **The elasticity of supply is measured by the coefficient of elasticity of supply**
- **Coefficient of price elasticity of supply can be:**

- **Greater than 1 (price-elastic supply)** - for products for which manufacturers can find substitutes very quickly by changing the price or have a lot of products in stock
- **Equal to 1 and (unit-elastic supply)**
- **Less than 1 (price-inelastic supply)** - ex. agricultural products because they are seasonal

- • **There are also two extreme cases:**

- Perfect inelastic offer (Es = 0) - picture Mona Lisa
- Perfectly elastic offer (Es = ∞) - approximately: market offer

Factors affecting price elasticity of supply

- Availability of production capacities
- Mobility of factors of production
- Inventories of products/services
- Time
- Length of production process

- **Supply is elastic when there are greater opportunities to increase production**

- It depends on the production capacity - the larger they are and the more readily you can use it (i.e. now you factory works in one shift but you can easily work in 3 shifts and produce more) – the higher the elasticity of supply

- **It also depends on the mobility of production factors (inputs)**

If inputs (eg labor) can be easily procured at current prices, production can also increase due to a relatively small increase in market price - it is resilient

- If the inventory of products is large, the elasticity is also higher

- Large inventories allow available goods to be placed on the market quickly; if there are no goods available at the inventory, the goods must first be produced

- The elasticity of supply is greater if the manufacturer can adapt quickly to changes (less-time needed) and if the production process is short (in less time due to short production process firm can put on market additional products)

Outcome of learning 3

Consumer behavior model

OBJECTIVE: maximization of utility, ie satisfaction

Satisfaction arises from the quantity of goods and services consumed: the greater the quantity, the greater the degree of satisfaction of needs, the greater satisfaction

LIMITATIONS:
Disposable income and
Prices of goods and services

HOW TO ACHIEVE THAT GOAL?

Utility

Subjective theories of value / utility

Name of theory and assumption	Key terms	Explanation / example
CARDINAL THEORY: utility intensity can be measured and represented by a number	• Marginal utility • The law of diminishing marginal utility • The equimarginal principle	How much will the total utility (total satisfaction) increase if… I buy another pair of shoes / drink another juice / go on a trip to the USA again (

Cardinal theory: Types of utility

- We express utility in units that we call " util " (from the word utility - usefulness). We distinguish several important concepts:
- Marginal utility (MU) - additional utility obtained from the use of an additional unit of a good
- Total utility (TU) - the utility of the entire quantity of a good or service. The total utility curve has a positive slope and shows that as consumption increases, overall utility increases but at an ever lower rate. The total utility curve reaches its maximum when the marginal utility is equal to 0
- Law of diminishing marginal utility = when the quantity of a consumed good increases, the marginal utility of that good tends to decrease - every extra unit brings lesser satisfaction

Total and marginal utility- e.g. consumption of 0.5l bottles of water

Quantity of good - 0.5 liter water bottles	Total utility	Marginal utility
0	0	-
1	100	100
2	180	80
3	230	50
4	250	20
5	250	0
6	220	-30

- If the consumer gets the first bottle of water in the day, it will give him/her the greatest satisfaction (we are thirsty, it is important for us to keep us alive)
- According to the table, that satisfaction is 100 units of utility
- The second bottle of water - very useful, because it will allow us not to suffer from serious diseases due to disorders of metabolic processes. However, it is a little less useful than the first bottle, to which the observed person owes his/her life – utility 80
- The third bottle - does not save lives but ensures a minimum level of functioning of the organism - utility 50
- Fourth bottle - a total of two liters per day (optimal amount of water per day) - utility 20
- The fifth bottle - neither harms nor benefits - the utility is 0
- Sixth bottles - negative utility - can cause stomach pain or worse
- trend occurs up to 5 units - this is the point of maximum total utility (saturation point)
- At higher levels the overall utility increases, but at a slower pace all the way to the saturation point, which means that each additional bottle of water does not provide equal satisfaction

Total and marginal utility – contd.

Quantity good - 0.5 liter water bottles	Total utility	Marginal utility
0	0	-
1	100	100
2	180	80
3	230	50
4	250	20
5	250	0
6	260	-20

- At higher levels the total utility grows, but at a slower pace all the way to the saturation point, which means that each bottle of water does not provide equal satisfaction
- Each additional bottle of water brings the consumer a smaller and smaller additional utility - marginal utility
- At the saturation point, the marginal utility is 0, which means that the consumer has reached the point of maximum utility
- After that point, the marginal utility begins to have negative values, which reduces the overall utility
- This phenomenon is described by the **law of diminishing marginal utility**

Definition of production and functions of production

- Production is a process of combining production factors with the goal of creating the products intended for the satisfaction of human needs
  .

Production process

- **In production process companies convert inputs (L,L,C) to outputs (products and services).**
- Inputs are factors of production .
- **Relationship between inputs and outputs is described by production function .**

Production function

The **production function** specifies the maximum output that can be produced with a given quantity of inputs.
It is defined for a given state of engineering and technical knowledge.
The goal of the manufacturer is to achieve maximum output from a given amount of input

• Key element: production techniques - Production techniques show how producers combine inputs to obtain output

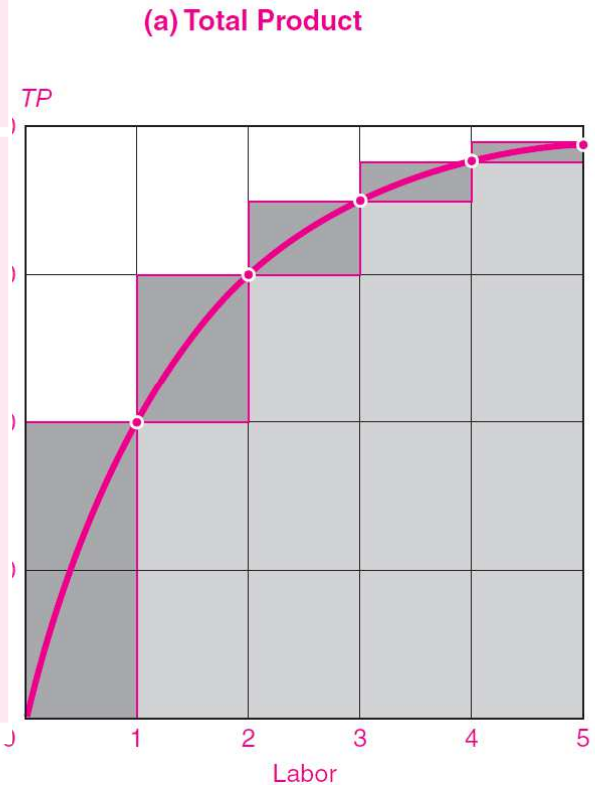
E.g. based on the use of technology and human labor, we distinguish between labor - intensive and capital -intensive production
• Only a certain amount of output can always be obtained with the given technology and available inputs

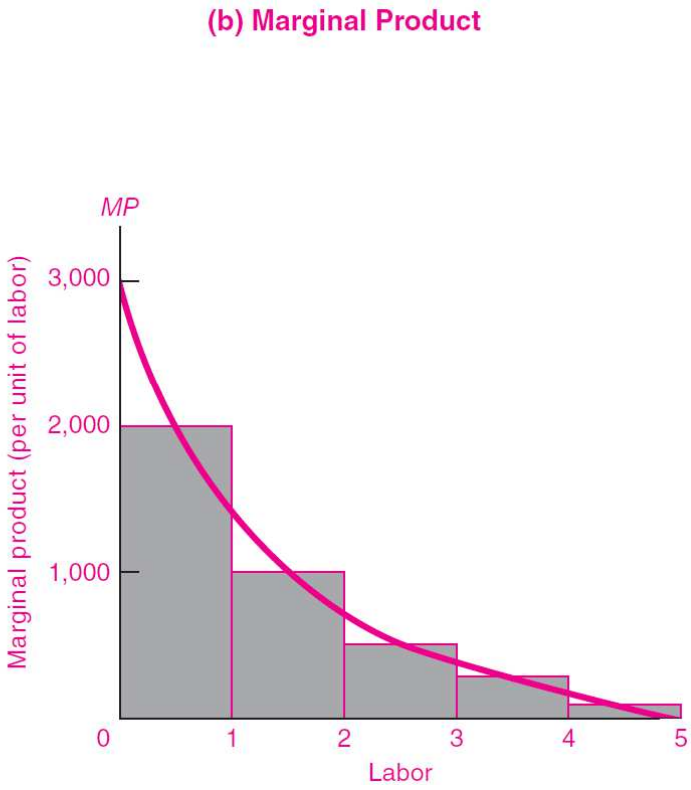
- The production function shows the relationship between the maximum output (output) and production inputs. In it, production inputs are an independent variable and output is a dependent one.
- Production function Q = f (L, C, L)
- where Q = quantity of output , L quantity of labor , C = quantity of capital and L= quantity of land i.e. natural resources .

- Starting with a firm's production function, we can calculate three important production concepts:
- Total product (TP = total product): the total amount of output produced expressed in physical units (numbers of sneakers, computers, bushels of wheat etc)
- Average product (AP = average product): ratio of total product divided by quantity of input (TP/Q)
- Marginal product (MP = marginal product): **marginal product** of an input is the extra output produced by 1 additional unit of that input while other inputs are held constant (ΔTP/ΔQ)

Total, marginal and average product

(1) Units of labor input	(2) Total product	(3) Marginal product	(4) Average product
0	0		
		2,000	
1	2,000		2,000
		1,000	
2	3,000		1,500
		500	
3	3,500		1,167
		300	
4	3,800		950
		100	
5	3,900		780





definitions

Total product - total quantity produced (eg number of sneakers, number of cars, etc.)

- The total product curve shows how total product responds as the amount of labor applied is increased. The total product starts at zero for zero labor and then increases as additional units of labor are applied, reaching a maximum of 3900 units when 5 units of labor are used.
- Marginal product - an additional product produced by one additional unit of labor (while other inputs, ie machinery and land are fixed). The marginal product of labor starts at 2000 for the first unit of labor and then falls to only 100 units for the fifth unit.
- Average product - on average how many workers are needed to produce a certain amount of product. Calculated as total output divided by total units of input. (i.e. table shows the average product of labor as 2000 units per worker with one worker, 1500 units per worker with two workers, and so forth).

Short run and long run

- In addition to inputs (labor, capital, and land), production takes time.
- Short run - a period in which companies can adjust production by changing variables such as labor and materials (you can hire additional workers and buy raw materials) but cannot change fixed factors (eg capital - build a new hall or rent an office floor)
- Long run - a period that is sufficient for all factors, including capital, to adjust

The law of diminishing returns

- Basic law in economics
- Under the **law of diminishing returns,** a firm will get less and less extra output when it adds additional units of an input while holding other inputs fixed.

- It is valid for the short run in which we believe that we can increase production only by adding additional units of work (in the short term we cannot build a new production plant or buy new production machines so quickly)
- The marginal product of each unit of input declines as that input increases — each additional worker contributes less and less to production

Returns to scale

- What would happen to production if land, labor, and capital increased in the same proportions?
- In this case, we are interested in the so-called returns to scale
- Constant returns to scale - change of all inputs leads to proportional change of production (eg If you double labor, land or capital, you will double production - hairdressing); long-run average total cost does not vary with the level of output
- Increasing returns to scale (economies of scale) - an increase in all inputs by 10% leads to an increase in production of more than 10% - e.g. Introduction of conveyor belt in car production and specialization of work; long-run average total cost falls as the quantity of output increases
- Decreasing returns to scale (diseconomies of scale) - an increase in input leads to a smaller increase in production - e.g. Production of monoculture in agriculture - if you increase the number of tractors, pesticides and insecticides and workers, the country will give less; long-run average total cost rises as the quantity of output increases

What might cause economies or diseconomies of scale?

- Economies of scale often arise because higher production levels allow *specialization* among workers, which permits each worker to become better at a specific task. For instance, if Ford hires a large number of workers and produces a large number of cars, it can reduce costs using modern assembly-line production.
- Diseconomies of scale can arise because of *coordination problems* that are inherent in any large organization. The more cars Ford produces, the more stretched the management team becomes, and the less effective the managers become at keeping costs down.

An example of economies of scale

- Apple is more efficient in the production of mobile phones than we would be if we did it in a garage, for example
- Why?

- Cheaper labor (products in China)
- Better negotiating terms (with suppliers, banks and investors)
- Better equipment
- Specialized workforce (marketing, administration, production)

Example of diseconomies of scale

IBM 'To Cut 111,000 Jobs' In Biggest-Ever Round Of Corporate Layoffs

Matthew Broersma, January 26, 2015, 11:25 am

- Relationships between people can get worse in large companies (problem of poor management)
- Communication between departments becomes more difficult the bigger the company (more hierarchical levels)
- Coordination - It is becoming increasingly difficult to coordinate the large number of tasks that need to be done
- Control - the geographical expansion of companies reduces control

Definitions of costs - see Conrad's coffe bar example

- Total cost (TC) consists of total fixed and total variable cost

TC = TFC + TVC

- Fixed cost (TFC) - Conrad's total cost can be divided into two types. Some costs, called **fixed costs**, do not vary with the quantity of output produced. They are incurred even if the firm produces nothing at all. Conrad's fixed costs include any rent he pays because this cost is the same regardless of how much coffee he produces. Similarly, if Conrad needs to hire a full-time bookkeeper to pay bills, regardless of the quantity of coffee produced, the bookkeeper's salary is a fixed cost.
- Variable cost (TVC) - change as the firm alters the quantity of output produced. Conrad's variable costs include the cost of coffee beans, milk, sugar, and paper cups: The more cups of coffee Conrad makes, the more of these items he needs to buy. Similarly, if Conrad has to hire more workers to make more cups of coffee, the salaries of these workers are variable costs.
- Note: There is also a mixed cost (for example, a telephone bill - the fixed part is a subscription, variable is what you spend outside the agreed subscription –e.g. roaming costs etc.)

Average cost - definition

- Total cost divided by the quantity of output is called **average total cost**.
- Because total cost is the sum of fixed and variable costs, average total cost can be expressed as the sum of average fixed cost and average variable cost.
- **Average fixed cost** is the fixed cost divided by the quantity of output, and **average variable cost** is the variable cost divided by the quantity of output.
- Average costs are important for calculating the unit cost of a product and / or service, price calculation, profitability of a product or group of products, production plant ...

Average cost

- **Average total cost**

–ATC = average total cost

- They are also called unit costs

–Total cost divided by the level of production of the enterprise (TC / Q)

- **Average fixed cost**

–AFC = average fixed cost

–Fixed cost divided by the company's production level (TFC / Q)

–As the fixed cost is constant, the average fixed cost decreases with increasing level of production – spreading the overhead

- **Average variable cost**

–AVC = average variable cost

–Variable cost divided by the level of production of the company (TVC / Q)

Marginal cost

- MC = marginal cost
- the increase in total cost that arises from an extra unit of production
- MC= Δ TC / Δ Q
- It provides information on how much it will cost a company to increase the level of production for one extra unit of production

What is the effective amount of production?

(1) Output (cups of coffee per hour)	(2) Total Cost	(3) Fixed Cost	(4) Variable Cost	(5) Average Fixed Cost	(6) Average Variable Cost	(7) Average Total Cost	(8) Marginal Cost
0	$3.00	$3.00	$0.00	—	—	—	
							$0.30
1	3.30	3.00	0.30	$3.00	$0.30	$3.30	
							0.50
2	3.80	3.00	0.80	1.50	0.40	1.90	
							0.70
3	4.50	3.00	1.50	1.00	0.50	1.50	
							0.90
4	5.40	3.00	2.40	0.75	0.60	1.35	
							1.10
5	6.50	3.00	3.50	0.60	0.70	1.30	
							1.30
6	7.80	3.00	4.80	0.50	0.80	1.30	
							1.50
7	9.30	3.00	6.30	0.43	0.90	1.33	
							1.70
8	11.00	3.00	8.00	0.38	1.00	1.38	
							1.90
9	12.90	3.00	9.90	0.33	1.10	1.43	
							2.10
10	15.00	3.00	12.00	0.30	1.20	1.50	

- Marginal cost increases with the quantity of product produced (decreasing marginal product)
- As production grows - the marginal product of the extra worker is large and the marginal cost of an extra cup of coffee is small
- This is up to the level of 5 or 6 cups of coffee - at that point the average total cost is the lowest ($ 1.3 per cup) and is equal to the marginal cost
- We say it is an efficient amount of production
- When the marginal cost is less than the average total cost = the average total cost decreases and vice versa

- We will produce a quantity that minimizes the average total cost - where the MC curve intersects the ATC curve (U-shaped)
- In our case the effective amount is 5 or 6 cups of coffee
- If more or less is produced, ATC rises above the $ 1.30 minimum

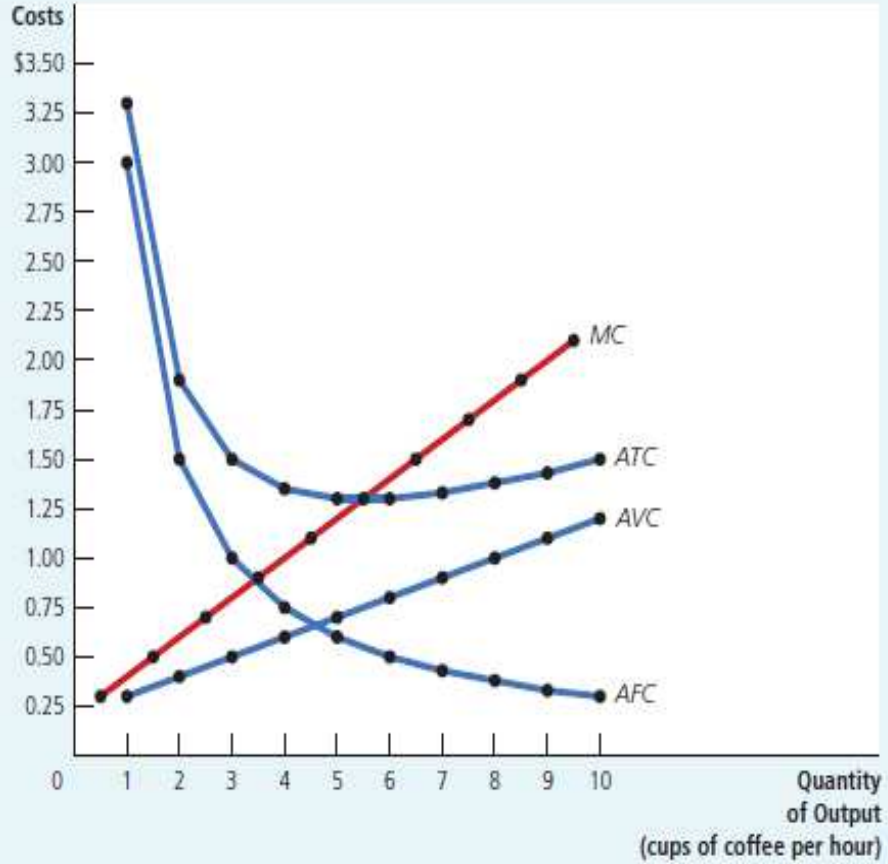
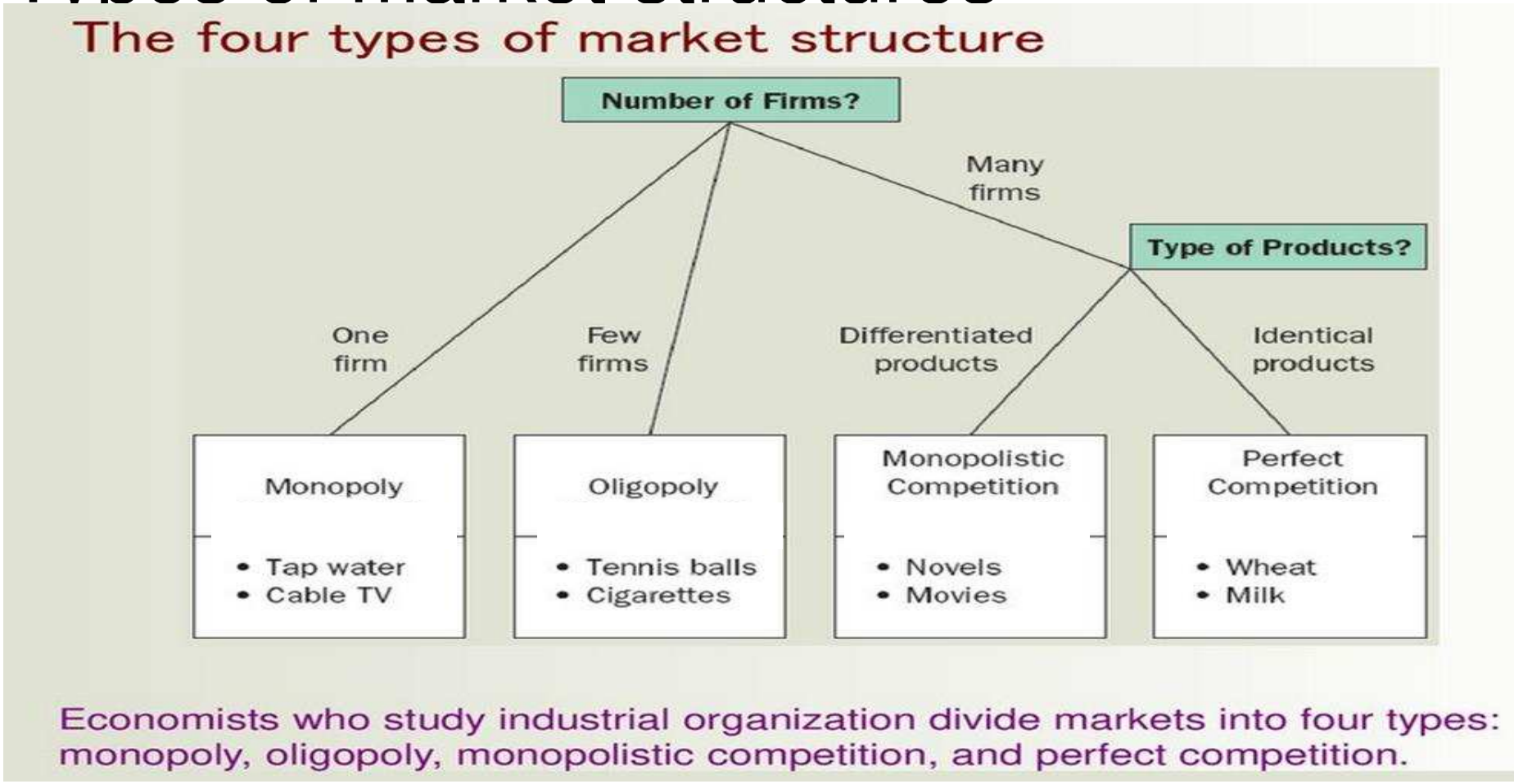


FIGURE 4

Conrad's Average-Cost and Marginal-Cost Curves

This figure shows the average total cost (*ATC*), average fixed cost (*AFC*), average variable cost (*AVC*), and marginal cost (*MC*) for Conrad's Coffee Shop. All of these curves are obtained by graphing the data in Table 2. These cost curves show three common features: (1) Marginal cost rises with the quantity of output. (2) The average-total-cost curve is U-shaped. (3) The marginal-cost curve crosses the average-total-cost curve at the minimum of average total cost.

Types of market structures



Perfect competition

- **A form of market structure in which there are a large number of producers, but also consumers**
- **The producers offer the same, homogeneous product**

- **Some characteristics of this market structure:**
- **A large number of sellers and buyers**
- **Complete freedom of entry or exit from the market**
- **Transparent market and fully informed customers**
- **Mobility of production factors**
- **Free, uncontrolled and undirected market**
- **Mutual knowledge of producers and consumers**
- **Existence of perfect substitutes**
- **Product: homogeneous (identical)**
- **Price: taken, regulated by the market**
- **Producers are price takers - they must accept the price set by the market**

The firm maximizes its profit when MR=MC

(1) Quantity (*Q*)	(2) Total Revenue (*TR*)	(3) Total Cost (*TC*)	(4) Profit (*TR* − *TC*)	(5) Marginal Revenue (*MR* = *ΔTR* / *ΔQ*)	(6) Marginal Cost (*MC* = *ΔTR* / *ΔQ*)	(7) Change in Profit (*MR* − *MC*)
0 gallons	$ 0	$ 3	−$3			
				$6	$2	$4
1	6	5	1			
				6	3	3
2	12	8	4			
				6	4	2
3	18	12	6			
				6	5	1
4	24	17	7			
				6	6	0
5	30	23	7			
				6	7	−1
6	36	30	6			
				6	8	−2
7	42	38	4			
				6	9	−3
8	48	47	1			

Key factors of imperfect competition – barriers to entry (difficulties for new competitors to enter into industry)

a) Legal and governmental restrictions – patents, tariffs, franchise monopolies (e.g. electricity) - the firm gets an exclusive right to provide a service, and in return the firm agrees to limit its prices and provide universal service in its region even when some customers might be unprofitable; government concessions - exclusive rights to e.g. exploit water – Jana)

b) Advertising and product differentiations– Advertising can create product awareness and loyalty to well-known brands. Pepsi and Coca-Cola spend hundreds of millions of dollars per year advertising their brands, which makes it very expensive for any potential rivals to enter the cola market. In many industries—such as breakfast cereals, automobiles, household appliances, and cigarettes— it is common for a small number of manufacturers to produce a vast array of different brands, models, and products – not profitable for new entries due to high costs of producing individual products

c) Economies of scale – due to lower costs of production for some producers they become more efficient in producing than many in the market

d) High entry costs– In some industries the price of entry simply may be very high (e.g. shipyard, aircraft industry,)

e) Pricing strategies– when entering the market big players can manipulate prices – predatory pricing - low prices imposed with the intention to eliminate competition

Definition of monopoly

- A firm is a **monopoly** if it is the sole seller of its product and if its product does not have any close substitutes.
- The fundamental cause of monopoly is *barriers to entry*.
- A monopoly remains the only seller in its market because other firms cannot enter the market and compete with it.
- Monopolist is price maker!

Why does monpoly occur?

- *Monopoly resources:* A key resource required for production is owned by a single firm.
- *Government regulation:* The government gives a single firm the exclusive right to produce some good or service.
- *The production process:* A single firm can produce output at a lower cost than can a larger number of firms. – Natural monopoly - a market in which the industry's output can be efficiently produced only by a single firm.

Key factor of imperfect competition – important for oligopolies!

- ***Strategic interaction*** **. When only a few firms operate in a market, they will soon recognize their interdependence.**
- **Strategic interaction , which is a genuinely new feature of oligopoly, occurs when each firm's business depends upon the behavior of its rivals.**
- **It occurs due to interdependence on the market**
- **E.g. telecommunication, Detroit – car industry.**

Oligopoly

- a market with only a few sellers, each offering a product that is similar (cars, household appliances) or identical (aluminium, steel) to the products offered by other sellers in the market.
- There are barriers to entry
- Oligopolist is a price maker
- Oligopolistic firms are interdependent in a way that competitive firms are not.
- Companies in general will compete with anything but prices – price wars

Types of oligopolies

- Cooperative
- Non-cooperative

Cooperative oligopolies

- Firms operate in a cooperative mode when they try to minimize competition.
- When firms in an oligopoly actively cooperate with each other, **they engage in collusion.** This term denotes a situation in which two or more firms jointly set their prices or outputs, divide the market among themselves, or make other business decisions jointly.
- The price agreed is higher than ATC – achieving supernomal profits
- Sometimes called secret oligopolies, although they not need to be

Types of cooperative oligopolies

- Cartel
- A gentleman’s agreement
- Price leadership model

Types of cooperative oligopolies

- Cartel – an organization of independent firms, producing similar products, that work together to raise prices and restrict output.
- In most countries illegal type of cooperation
- Exception: OPEC (Organization of petroleum exporting countries).
- Cooperate on the basis of formally signed written agreement.
- What is specified is prices and quotas of production per country

Types of cooperative oligopolies – cont'd

- Gentleman's agreement – oral agreement while playing golf, on banquets, via phone etc.
- Price leadership model– dominant company will initiate the price change and the rest will follow. Every increase in price is done with the explicit knowledge of directors of company.

Non-cooperative oligopoly

- Firms act non-cooperatively when they act on their own without any explicit or implicit agreements with other firms
- Prices are stabile in a longer run – due to competition based on non-price basis (marketing, additional services)
- Avoidance of price war

Monopolistic competition

- a market structure in which there are many firms selling products that are similar but not identical.
- In a monopolistically competitive market, each firm has a monopoly over the product it makes, but many other firms make similar products that compete for the same customers.

Monopolistic competition describes a market with the following attributes:

- *Many sellers:* There are many firms competing for the same group of customers.
- *Product differentiation:* Each firm produces a product that is at least slightly different from those of other firms. They compete through design, added services (e.g. home delivery), location, marketing etc.
- *Free entry and exit:* Firms can enter or exit the market without restriction.