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TEXTBOOK
for the same course for full-time students of economic specialties

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The basic economic categories and concepts are outlined in the textbook, trends of economic processes, principles of consumer and producer behavior as well. The textbook gives the understanding of macroeconomic approach.

The textbook can be recommended for students of economic specialties.

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Content

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INTRODUCTION

Studying the economic theory is intended to explain the basic economic categories and concepts, trends of economic processes. Economics describes principles of consumer and producer behavior. It gives the understanding of macroeconomic approach, lays the foundation for understanding of the international economy. Economics theory includes studying of different disciplines: economics, microeconomics, macroeconomics and international economy. Economic theory serves as a methodological basis for the general and specific economic sciences.

Economics helps to understand the world. There are many questions about the economy. Why do some countries have high rates of inflation while others have stable prices? Why are jobs easy to find in some years and hard to find in others?

The purpose of studying the economics is to create the economic way of thinking, to form the foundation of economic knowledge based on studying the main achievements of economic thoughts.

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SECTION 1. BASIC PRINCIPLES OF ECONOMICS

TOPIC 1. INTRODUCTION TO ECONOMIC THEORY

1.1. Define the economics.
1.2. Needs and wants.
1.3. Resources and factors of production.
1.4. The problem of choice in economy. Production possibilities curve.

Keywords: economic theory, wants, needs, the law of exaltation of needs, non-economic goods, economic goods, resources, factors of production, problem of choice, production possibility curve, opportunity cost.

1.1. Define the economics

The word economy comes from the Greek word “oikonomos”, which means “one who manages a household”.

To define the economics we have to understand the following things.

The resources are limited. But people’s wants are unlimited. So, we can say that Economics is the study of how society manages its scarce resources to satisfy unlimited wants.

The scarce resources cause people to make choices. So, we can say that economics is the study of choice. We must make choices as individuals, we must make choices as a society.

An economy is just a group of people dealing with one. That is why an economy reflects the behavior of the individuals who make up the economy.

Finally we can give the following definition to an economy. Economics is a social science that examines how people choose among the alternatives available to them. It is social because it involves people and their behavior. It is a science because it uses, as much as possible, a scientific approach in its investigation of choices.

The field of economics is typically divided into two broad subfields: microeconomics and macroeconomics.

Microeconomics is the study of how households and firms make decisions and how they interact in specific markets.

Macroeconomics is the branch of economics that focuses on the impact of choices on the total, or aggregate, level of economic activity.

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There are two types of economic statements: positive and normative. Positive statements are descriptive. They make a claim about how the world is. Normative statements are prescriptive. They make a claim about how the world ought to be.

1.2. Needs and wants

Needs are the basic human requirements such as for air, food, water, clothing, and shelter. Needs become wants when they are directed to specific objects that might satisfy the need. For example, in Belarus consumer needs food but wants a potato. A person in Afghanistan needs food but wants rice, lamb, and carrots. So we can say that wants are shaped by society a person lives in.

There are economic and non-economic wants. Economic wants are defined as desires that can be satisfied by consuming goods and services. Because resources are limited, people cannot have all the goods and services they want. As a result, they must choose some things and give up others. Non-economic wants – those wants that can be satisfied in the natural way (in bathing, sun tanning).

We can also distinguish three groups of needs – material, spiritual and social.

Material needs – in food, water, and clothing.

Spiritual needs are associated with the development of a person as a person and are satisfied with getting an education, joining in art, reading books, owning information.

Social needs are realized through the participation of people in different social activities: in parties, trade unions, public foundations, charitable organizations.

American sociologist Abraham Maslow (1908–1970), has ranked all needs in ascending order from the "lowest" material up to higher spiritual:

- physiological needs (in food, drink, etc.);
- security needs (protection from pain, anger, fear, etc.);
- social needs (family, friends, religious, etc.);
- in social status (in recognition, approval);
- in self-expression of the personality (in the realization of abilities).

Until the needs of the lower order are satisfied, higher-order needs do not arise.

The needs are dynamic: they change under the influence of different factors.

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Continuous change of needs in quantitative and qualitative terms is characterized as the law of the exaltation of needs.

To satisfy our needs we need to consume and produce goods. There are economic and non-economic goods.

Economic goods:

1) can be marketed;

2) have a benefit (utility) to society;

3) have a degree of scarcity and therefore an opportunity cost.

With economic goods where there is some scarcity and value, people will be willing to pay for them. Non-economic or free goods do not have any price and are unlimited in supply.

1.3. Resources and factors of production

To produce goods we need resources. Resources that have been already involved in production process are called the factors of production. The factors of production are land, labor, capital, and entrepreneurship. They can be used in various combinations.

Land refers to all the natural resources. These resources are gifts that are given by nature. Some common examples of natural resources are water, oil, copper, natural gas, coal, and forests. These resources can be renewable, such as forests, or nonrenewable such as oil or natural gas. The income earned from land or other such natural resources is called rent.

Labor, as a factor of production, involves any human input. Labor can be physical or mental. The income earned by labor resources is called wages. It is the largest source of income for most people.

Capital refers to manufactured resources such as factories and machines. Real capital is distinguished from financial capital, which is funds available to acquire real capital. The income earned by owners of capital resources is called interest.

An entrepreneur is someone who takes on risk and brings the other three factors of production together. The payment an entrepreneur receives is called profit as a reward for the risk they take.

Resources are limited.

1.4. The problem of choice in economy. Production possibilities curve

The production possibilities curve shows the capabilities of a country. An economy's factors of production are limited that is why we cannot produce an unlimited quantity of goods and services.

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A production possibilities curve is a graphical representation of the different combinations of two goods that an economy can produce when all resources are fully and efficiently employed (fig. 1.1).

In drawing the production possibilities curve, we shall assume that:

1) the economy can produce only two goods (in our example economy produces consumer goods and capital goods);

2) the quantities of factors of production are fixed;

3) the level of technologies is unchanged.

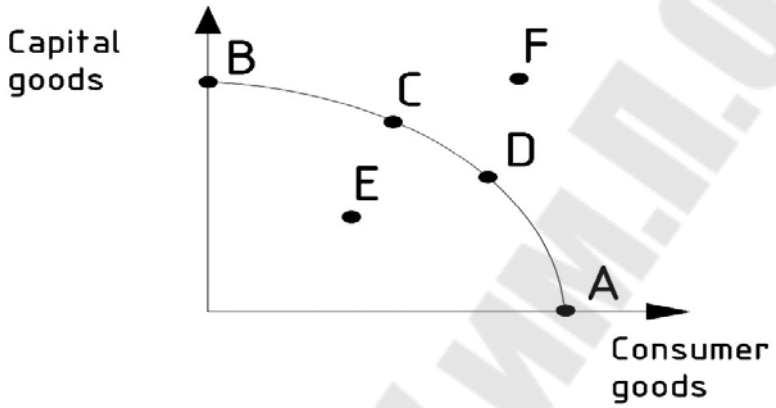

Figure 1.1 – The production possibilities curve

A shows just the production of consumer goods; B shows only production of capital goods. But these situations are not real because there is no country which produces only capital goods or consumer goods.

C and D lay on Production possibility curve and show efficient output combinations.

E shows inefficient utilization of resources. In this point the output is less than what it can be. The combinations of output lying inside PPC happen when there are unemployed resources or when resources are used inefficiently. An economy can increase the total output by moving towards the PPC. A country would require an increase in factor resources, an increase in the productivity or an improvement in technology to reach this combination.

F lies beyond PPC and shows an unattainable production with current resources. Trade between countries allows nations to consume beyond their own PPF.

For example we have an economy that produces two types of goods: cotton and wheat. At point A the economy produces 300 tonnes of cotton and 200 tonnes of wheat. The government has decided to produce 400 tonnes of cotton. Since we have assumed that the economy has a fixed quan-

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tity of available resources, the increased use of resources for cotton necessarily reduces the number of resources available for the production of wheat. The decision to devote more resources to cotton and less to wheat represents the problem of choice. Reallocating scarce resources from one product to another involves opportunity costs. Opportunity costs is measured in terms of an output of one good we sacrifice to produce an additional unit of other good.

The law of increasing opportunity cost tells us that, as the economy moves along the production possibilities curve in the direction of more of one good, its opportunity cost will increase (fig. 1.2).

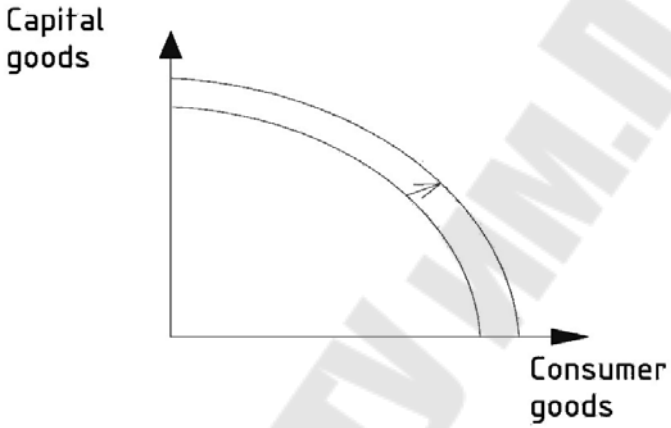

Figure 1.2 – The production possibilities curve and economic growth

An increase in the physical quantity or in the quality of factors of production available to an economy or a technological gain will allow the economy to produce more goods and services. It will shift the economy's production possibilities curve outward. The process through which an economy achieves an outward shift in its production possibilities curve is called economic growth.

TOPIC 2. ECONOMIC SYSTEMS

2.1. The fundamental questions in economy.
2.2. Types of economic systems.
2.3. The market capitalism and its principles.

Keywords: economic system, traditional economy, command economy, market economy, mixed economy, market capitalism, private property, profit motive, market forces.

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2.1. The fundamental questions in economy

Economics is the science of making choice under conditions of scarcity. Any society must make choices about three important problems.

What to produce and in what quantities? Does the economy use its resources to build more hospitals, roads, schools or luxury hotels?

How shall goods be produced? What is the best use of our scarce resources? For example, should we use copper or plastic to make pipes? Should the power plant be built close to the ocean or inland? There are millions of decisions that need to be made to figure out how to produce goods and services.

For whom shall the goods be produced? Who will get expensive hospital treatment – and who not? Should there be a minimum wage?

2.2. Types of economic systems

The above three questions are common to all economies, but every economic system makes its own choice. The nature of a particular choice in a society depends on its specific economic system.

An economic system is a way of answering the basic questions in economy. An economic system is a network of organizations used by a society to resolve the basic problem of what, how much, how and for whom to produce.

There are countless economies across the world. All of them are unique in their own way, but they still share a significant number of characteristics. Thus we can find out four types of economic systems: traditional economy, command economy, market economy and mixed economy.

1. Traditional economy. This economy is based on customs and traditions. It produces exactly to its consumption requirements. There is not much of sales as there is only little surplus is produced. The same product will be produced by every generation. The production techniques are traditional. The economy works through bartering.

2. Command economy. In a planned or command economy all resources are owned by the government. The state allocates resources, and sets production targets and growth rates according to its own view of people's wants. Much importance is given to social welfare, and equal opportunities are given to all.

3. Market economy. In market economies markets allocate resources through the price mechanism. An increase in demand raises price and encourages businesses to use more resources into the production of that good or service. The quantity of products consumed by people depends on their

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income and income itself depends on the market value of an individual's work. There is a limited role of the government in a free market economy.

4. Mixed economy. This economic system is a cross between a market economy and command economy. In the most common types of mixed economies, the market is more or less free of government ownership except for a few key areas like transportation or such industries as defense and railroad. However, the government is also usually involved in the regulation of private businesses.

2.3. The market capitalism and its principles

The salient features of capitalism are:

1. Right to private property: individuals have the right to buy and own property. There is no limit. They also have rights to use their property in any way they like.

2. Profit-motive behavior: profit is the only motive for the functioning of capitalism. Production decisions involving high risks are taken by individual only to earn profits. Hence, profit-motive is the basic force that drives the capitalist economy.

3. Freedom of choice: the question 'what to produce?' will be determined by the producers. They have the freedom to decide. The factors of production can also be employed anywhere freely. And consumers have the freedom to buy anything they want.

4. Market forces: market forces such as demand, supply and price are the signals to direct the system. Most of the economic activities are based on price mechanism. Production, consumption and distribution questions are expected to be solved by market forces.

5. Minimal role of government: as most of the basic economic problems are expected to be solved by market forces, the government has minimal role in the economy. Its role will be limited by some important functions, such as regulation of market, national defense, foreign policy, etc.

TOPIC 3. THE MARKET CONCEPT

3.1. Market and its functions.

3.2. Competition: definition and types. Perfect and imperfect competition.

Keywords: market, competition, perfect competition, monopoly, monopolistic competition, oligopoly.

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3.1. Market and its functions

A market is a group of buyers and sellers of a particular good or service. The buyers as a group determine the demand for the product, and the sellers as a group determine the supply of the product.

Main operating conditions of the market are:

1) existence of private property;

2) competition;

3) freeprices.

The market performs a number of functions:

1. Regulation. A market determines the quantity and range of produced goods and services, attracted resources. It helps to answer the main questions: what to produce? for whom to produce? how to produce?

2. Stimulating. A market stimulates producers to use modern technologies, to produce new goods and services with the lowest in order to get maximum profit.

3. Information. The market provides the buyers and sellers with information about the quality and quantity of goods and services that is necessary.

4. Intermediate function. The market helps sellers and buyers to find each other.

5. Pricing. The prices are set as a result of the interaction of supply and demand

6. Sanitizing function. Competition clears the market from economically unstable production, from goods and services of a bad quality. Markets help to survive the stronger market participants.

3.2. Competition. Perfect and imperfect competition

One of the fundamental features of the market is a competition.

Market must have the following characteristics to be perfectly competitive:

1) the goods offered for sale are all exactly the same;

2) the buyers and sellers are so numerous that no single buyer or seller has any influence over the market price. Because buyers and sellers in perfectly competitive markets must accept the price the market determines, they are called price takers;

3) there is no entry barriers. Every buyer or seller, who wants can buy or sell the goods;

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4) full information is presented both to buyers and sellers in a perfectly competitive market.

There some advantages and disadvantages of perfectly competitive market: Advantages are:

1) competition is an important moving force of economic system;

2) competition stimulates the decrease of production costs, the increase of labor productivity;

3) it makes producers improve the quality of goods, and customer care.

Negative characteristics:

1) it leads to the appearance of monopolies;

2) it leads to the crisis of re-production;

3) the use of unfair methods of competition by large-scale companies leads to the destruction of small and middle-sized enterprises.

If the conditions of the perfect market are not met, then there is an imperfect competition market. It includes 3 market submodels: monopoly, oligopoly and monopolistic competition.

A pure monopoly is when only one buyer or seller dominates in some branch. The defining moment at this is not a size of the enterprise, but its share of production and sales in the market. Being the only seller, monopoly suggests a unique production which doesn't have any substitute. Monopoly is protected from by high entrance barriers in the branch. Monopoly sets the prices.

When small number of sellers occupy a major position in some branch, and the entrance to the branch of new producers is limited by high barriers such market structure is called oligopoly. The main feature of oligopoly is that every enterprise-producer should take into account not only the interests of consumers but also the interests of other firms-producers in the market. This is the so-called leadership in price determining, i.e. a secret agreement on prices. Oligopoly pricing is often done according to the principle of "expenditures plus", when some definite per cent is added to average expenditures when defining the price.

In the market of monopolistic competition a great number of producers are engaged in production and distribution of goods. Every enterprise is relatively small in share of production and sales. An important characteristic of monopolistic competition is product differentiation both real and false one, that is done by means of advertising, the use of trademarks etc. As the production of every enterprise is unique in the eyes of consumers, such market tends to acquire the traits of monopoly.

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SECTION 2. BASIC PRINCIPLES OF MICROECONOMICS

TOPIC 4. MARKET FORCES OF SUPPLY AND DEMAND

Keywords: demand, supply, the law of demand, the law of supply, equilibrium, equilibrium price, equilibrium quantity, excess demand, excess supply, price floor, price ceiling.

4.1. Demand and its factors. The law of demand

The demand is the amount of the good that buyers are willing and able to buy at a particular price during a particular period.

The main characteristic that determines the quantity people are willing and able to buy is the price of the good or service itself.

The law of demand states that there is a negative relationship between the price (P) and quantity demanded (Q) of a commodity over a period of time. Other things equal, when the price of a good rises, the quantity demanded of the good falls, and when the price falls, the quantity demanded rises. Hence the demand function can be written as:

$$Qd = f(P). \quad (4.1)$$

The law of demand can be presented with a demand curve, which is a graphical representation of a demand. A demand curve shows the relationship between the price and quantity demanded of a good or service during a particular period, all other things unchanged (fig. 4.1).

There are some non-price factors which influence the demand.

Income. If the demand for a good falls when income falls, the good is called a normal good. Not all goods are normal goods. If the demand for a good rises when income falls, the good is called an inferior good.

Prices of related goods. When a fall in the price of one good reduces the demand for another good, the two goods are called substitutes. Substitutes are pairs of goods that are used instead of each other. When a fall in the price of one good raises the demand for another good, the two goods are called complements. Complements are pairs of goods that are used together.

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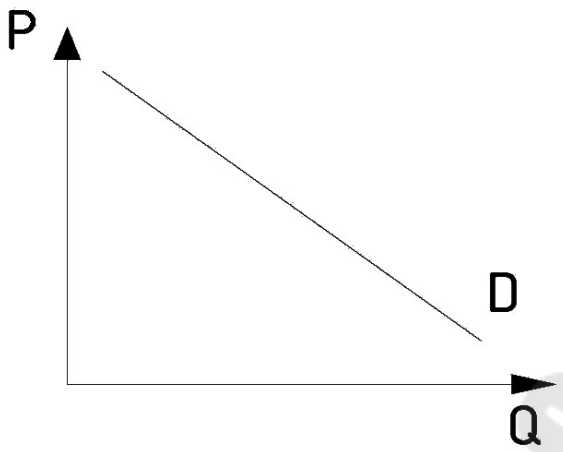

Figure 4.1 – The demand curve

Tastes. The most obvious determinant of demand is tastes. Economists examine what happens when tastes change.

Expectations about future income or future prices. Expectations about the future may affect demand for a good or service today. If a person expects to earn a higher income next month, person may choose to save less now and spend more of current income. If a person expects the price of a good to fall tomorrow, he may be less willing to buy a good at today's price.

Number of buyers. In addition to the preceding factors, which influence the behavior of individual buyers, market demand depends on the number of these buyers.

All these factors shift the demand curve: to the left when the demand decreases and to the right when it increases (fig. 4.2).

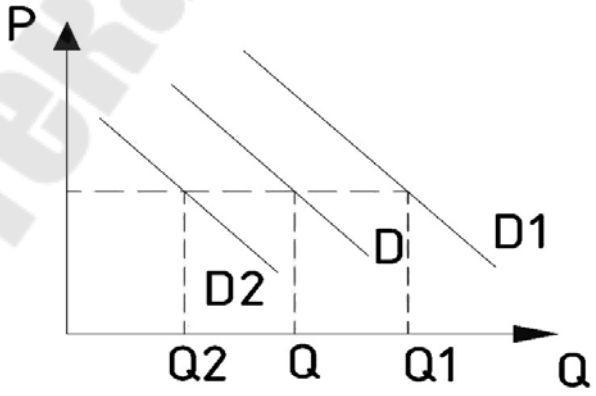

Figure 4.2 – Shifts in demand curve

The market demand is the sum of the individual demands at each price.

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4.2. Supply and its factors. The law of supply

The supply is the amount of goods and services that sellers are willing and able to sell at a particular price during a particular period.

The main characteristic that determines the supply is the price of the good or service itself.

The relationship between price and quantity supplied is called the law of supply: Other things 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. Hence the supply function can be written as:

$$Qs = f(P). \quad (4.2)$$

The curve relating price and quantity supplied is called the supply curve (fig. 4.3).

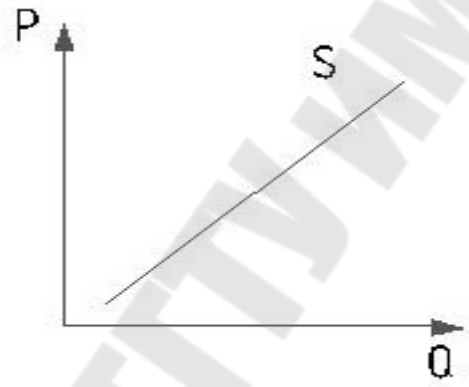

Figure 4.3 – The supply curve

There are non-price factors that can shift the supply curve (fig. 4.4). Here are some of the most important.

Input prices. When the price of one or more of these inputs rises, producing of good is less profitable, and firms supply less of goods. Thus, the supply of a good is negatively related to the price of the inputs which are used to make the good.

Technology. The technology is another determinant of supply. The invention of the mechanized machine, for example, reduced the amount of labor necessary to make a good. By reducing firms' costs, the advance in technology raised the supply of good.

Expectations. The amount of goods a firm supplies today may depend on its expectations about the future.

Number of sellers. Market supply depends on the number of these sellers.

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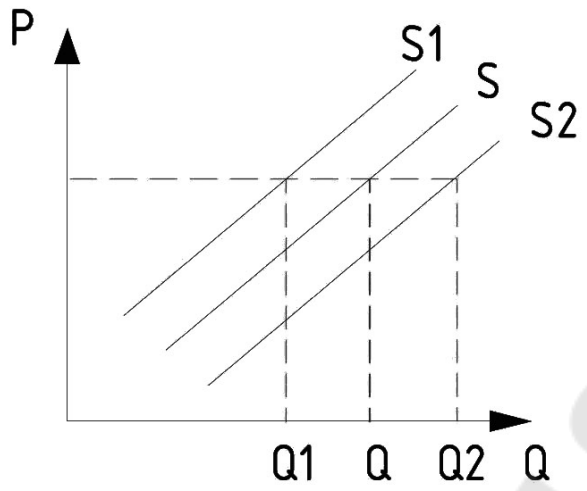

Figure 4.4 – Shifts in supply curve

If the supply rises the curve shifts toward the right, and if the supply decreases the curve shifts to the left.

There are individual and market supply. Individual supply is a supply of one seller. Market supply is the sum of the supplies of all sellers in the market.

4.3. Equilibrium

Market equilibrium as a situation in which demand and supply are in balance – at the equilibrium price, the quantity of the good that buyers are willing and able to buy equals the quantity that sellers are willing and able to sell.

$$Qd = Qs. \tag{4.3}$$

The graphical presentation of equilibrium is (fig. 4.5).

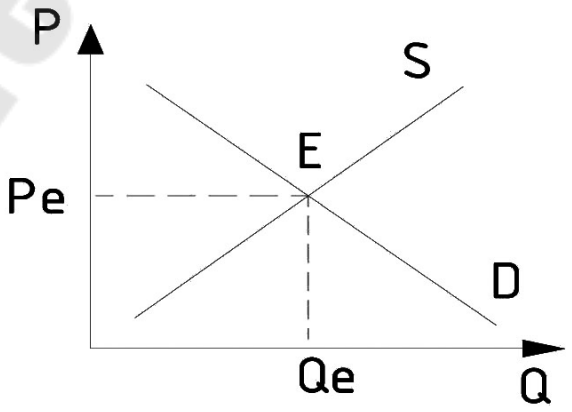

Figure 4.5 – Equilibrium

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The actions of buyers and sellers naturally move markets toward the equilibrium point. To see why, consider what happens when the market price is not equal to the equilibrium price.

Suppose first that the market price is above the equilibrium price. The price P1 is higher than price Pe. According to the law of supply this price is good for sellers, they will sell more goods (Qs). But this price is too high for some buyers, the quantity demanded will be Qd (fig. 4.6).

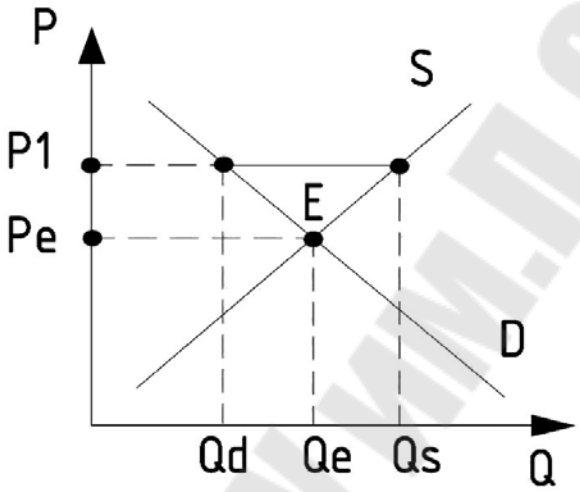

Figure 4.6 – Excess supply

We see that Qs > Qd. Hence there is a surplus, which equals Qs – Qd. A surplus is sometimes called a situation of excess supply. When there is a surplus in the market, sellers would like to sell, but they cannot. They begin to cut their prices. Falling prices increase the quantity of demand and decrease the quantity of supply. Prices continue to fall until the market reaches the equilibrium.

Suppose now that the market price is below the equilibrium price.

The price P2 is lower than price Pe (fig. 4.7). According to the law of demand this price is good for buyers; they are able to buy more goods (Qd). But this price is too low for some sellers; the quantity supplied will decrease to Qs.

We see that Qd > Qs. This situation is called a shortage of the good. A shortage is sometimes called a situation of excess demand. With too many buyers chasing too few goods, sellers can raise their prices without losing sales. These price increases cause the decrease of quantity demanded and the rise of quantity supplied. So, these changes represent movements along the supply and demand curves, and they move the market toward the equilibrium.

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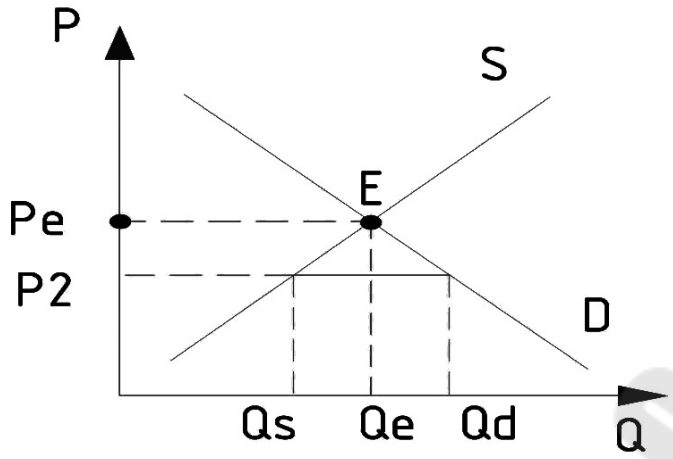

Figure 4.7 – Excess demand

Thus, regardless of whether the price starts off too high or too low, the activities of the many buyers and sellers automatically push the market price toward the equilibrium price. Once the market reaches its equilibrium, all buyers and sellers are satisfied. How quickly equilibrium is reached varies from market to market depending on how quickly prices adjust. In most free markets, surpluses and shortages are only temporary because prices eventually move toward their equilibrium levels.

4.4. Market intervention

Market intervention often comes as either a price floor or a price ceiling.

Price floor. A price floor sets a minimum price for which the good may be sold. Price floors are designed to benefit the producers providing them a price greater than the original market equilibrium. To be effective, a price floor need to be above the market equilibrium. At a price above the market equilibrium the quantity supplied will exceed the quantity demanded resulting in a surplus in the market (fig. 4.8).

The government imposed price floors for certain agricultural commodities, such as wheat and corn. At a price floor, greater than the market equilibrium price, producers increase the quantity supplied of the good. Consumers now face a higher price and reduce the quantity demanded. The result of the price floor is a surplus in the market.

To maintain the price floor, governments are often forced to purchase the excess product, which adds additional costs to the consumers who are also taxpayers. Thus the consumers suffer from both higher prices but also higher taxes to dispose of the product.

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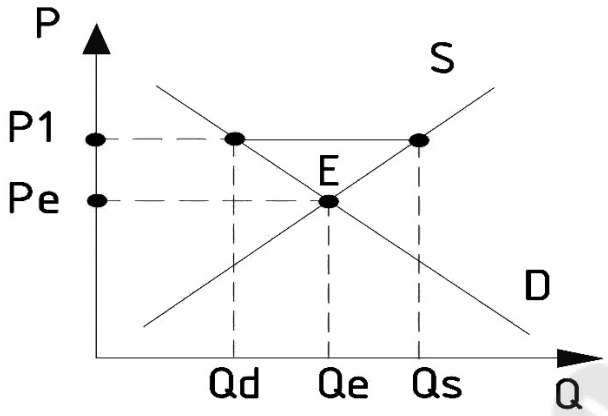

Figure 4.8 – Price floor

Price ceilings. Price ceilings are intended to benefit the consumer and set a maximum price for which the product may be sold. To be effective, the ceiling price must be below the market equilibrium. This price is good for buyers but less attractive to sellers. Quantity demanded is bigger than quantity supplied. There is a shortage.

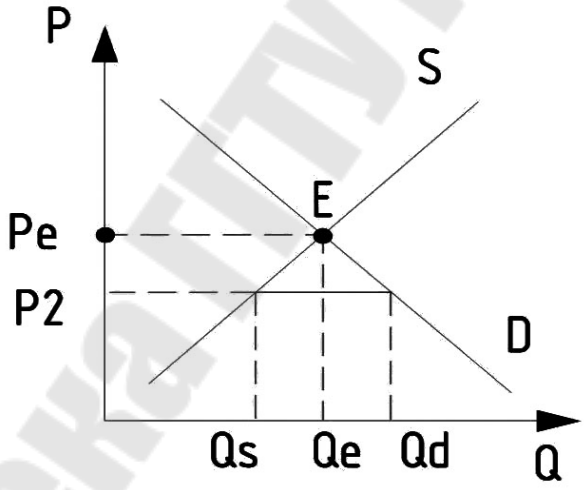

Figure 4.9 – Price ceiling

As a result of this type of market intervention illegal markets appear, suppliers allocate too few resources to the product and market does not achieve efficiency.

Taxes and subsidies are other types of market interventions.

A subsidy is an amount of money given directly to firms by the government to encourage production and consumption.

A unit subsidy is a specific sum per unit produced which is given to the producer.

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Per unit subsidy will increase the supply and will shift the supply curve vertically downwards by the amount of the subsidy. In this case the new supply curve will be parallel to the original (fig. 4.10).

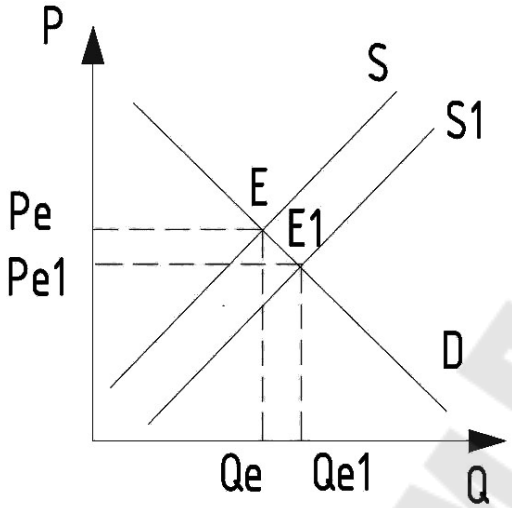

Figure 4.10 – Subsidy

There is a new point of equilibrium E1 with new equilibrium quantity and new equilibrium price. Equilibrium price falls (from Pe to Pe1) and equilibrium quantity increases (from Qe to Qe1). At new equilibrium point the buyer can buy more for fewer prices. And seller can sell more for bigger price (Pe1 + subsidy).

The tax is non-price factor. It decreases the supply. The supply curve shifts upwards. The vertical distance between the original and new supply curve is the amount of the tax (fig. 4.11).

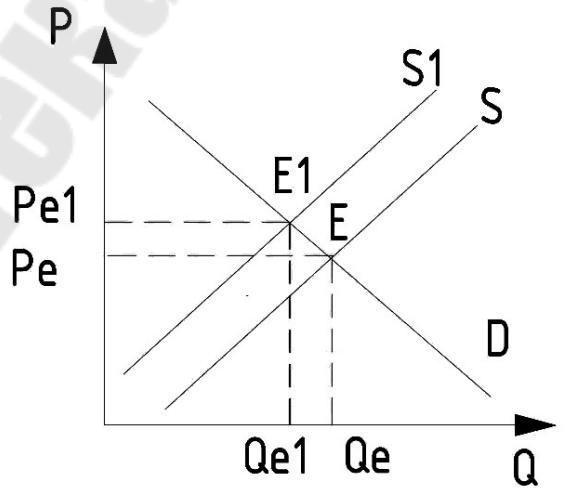

Figure 4.11 – Taxation

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Due to the tax, the market has a new equilibrium point E1. The new equilibrium price (Pe1) is higher and the equilibrium quantity (Qe1) is lower.

TOPIC 5. ELASTICITY

Keywords: elasticity, price elasticity of demand, income elasticity of demand, cross-elasticity of demand, elasticity of supply.

5.1. Elasticity of Demand

The law of demand states that a fall in the price of a good raises the quantity demanded. The concept of elasticity of demand measures the rate of change in demand.

There are three types of elasticity of demand:

– price elasticity of demand;

– income elasticity of demand;

– cross-elasticity of demand.

5.1.1. Price elasticity of demand

The price elasticity of demand measures how much the quantity demanded responds to a change in price.

$$E_d^p = \frac{\text{percentage change in quantity demanded}}{\text{percantage change in price}}. \qquad (5.1)$$

Demand for a good is said to be elastic if the quantity demanded responds substantially to changes in the price.

Demand is said to be inelastic if the quantity demanded responds only slightly to changes in the price.

Because the quantity demanded of a good is negatively related to its price, the percentage change in quantity will always have the opposite sign as the percentage change in price. That is why we use the absolute value.

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$$E_d^p = \frac{\Delta Q}{\Delta P} \frac{P_1 + P_2}{Q_1 + Q_2}. \quad (5.2)$$

If $|E_d^p| > 1$, the demand for a good is said to be elastic.

If $|E_d^p| < 1$, the demand for a good is said to be inelastic.

There are different determinants of the price elasticity of demand.

Availability of Close Substitutes. Goods with close substitutes tend to have more elastic demand because it is easier for consumers to switch from one good to another.

Necessities and Luxuries. Necessities have inelastic demand, and luxuries have elastic demands.

Time Horizon. Goods tend to have more elastic demand over longer time horizons.

The Price Elasticity of Demand and Total Revenue.

Total revenue is the amount received by sellers of the good.

$$TR = P \cdot Q. \quad (5.3)$$

If demand is inelastic, then an increase in the price causes an increase in total revenue. An increase in price raises total revenue because the fall in quantity is proportionately smaller than the rise in price.

If demand is elastic, then an increase in the price causes a decrease in total revenue. An increase in price reduces total revenue because the fall in quantity is proportionately greater than the rise in price. Because demand is elastic, the reduction in the quantity demanded is so great that it offsets the increase in the price.

The examples in this figure illustrate some general rules:

• When demand is inelastic, price and total revenue move in the same direction.

• When demand is elastic, price and total revenue move in opposite directions.

• If demand is unit elastic, total revenue remains constant when the price changes.

5.1.2. The Income Elasticity of Demand

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 change in income:

$$E_d^I = \frac{\text{percentage change in quantity demanded}}{\text{percantage change in income}}. \quad (5.4)$$

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Most goods are normal goods. For these goods higher income raises the quantity demanded. Because quantity demanded and income move in the same direction, normal goods have positive income elasticity.

A few goods are inferior goods. Higher income lowers the quantity demanded. Because quantity demanded and income move in opposite directions, inferior goods have negative income elasticity.

Among normal goods, income elasticity varies in size. Necessities, such as food and clothing, tend to have small income elasticity because consumers choose to buy some of these goods even when their incomes are low. Luxuries tend to have large income elasticity because consumers feel that they can do without these goods.

5.1.3. Cross-elasticity of demand

The cross-price elasticity of demand 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:

$$E_d^{xy} = \frac{\text{percentage change in quantity demanded of good 1}}{\text{percantage change in price of good 2}}. \qquad (5.5)$$

Whether the cross-price elasticity is a positive or negative number depends on whether the two goods are substitutes or complements. Substitutes are goods that are used in place of one another. An increase in price of one good induces people to consume another good instead. Because the price of one and the quantity demanded of another move in the same direction, the cross-price elasticity is positive. Complements are goods that are typically used together. In this case, the cross-price elasticity is negative, indicating that an increase in the price of one good reduces the quantity demanded of another.

5.2. Elasticity of supply

The law of supply states that higher prices raise the quantity supplied. The price elasticity of supply measures how much the quantity supplied responds to changes in the price. The price elasticity of supply as the percentage change in the quantity supplied divided by the percentage change in the price. That is,

$$E_d^s = \frac{\text{percentage change in quantity supplied}}{\text{percantage change in price}}. \qquad (5.6)$$

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Supply of a good is said to be elastic if the quantity supplied responds substantially to changes in the price. Supply is said to be inelastic if the quantity supplied responds only slightly to changes in the price.

The price elasticity of supply depends on the flexibility of sellers to change the amount of the good they produce. For example, beachfront land has an inelastic supply because it is almost impossible to produce more of it. By contrast, manufactured goods, such as books, cars, and televisions, have elastic supplies because firms that produce them can run their factories longer in response to a higher price.

In most markets, a key determinant of the price elasticity of supply is the time period being considered. Supply is usually more elastic in the long run than in the short run. Over short periods of time, firms cannot easily change the size of their factories to make more or less of a good. Thus, in the short run, the quantity supplied is not very responsive to the price. By contrast, over longer periods, firms can build new factories or close old ones. In addition, new firms can enter a market, and old firms can shut down. Thus, in the long run, the quantity supplied can respond substantially to price changes.

TOPIC 6. THE THEORY OF CONSUMER'S BEHAVIOR

6.1. The main categories: total and marginal utility. Cardinal theory.

6.2. Ordinal theory: indifference curve and budget line. Consumer equilibrium.

Keywords: utility, total utility, marginal utility, the law of diminishing marginal utility, the rule of maximization of utility, indifference curve, budget line, the equilibrium of consumer.

The theories of consumer's behavior try to explain how the consumer should use his budget to maximize the utility he or she gains during consumption.

There are two theories, that try two explain the consumer behavior: cardinal and ordinal.

6.1. The main categories: total and marginal utility. Cardinal theory

People buy goods and service because they provide them with satisfaction – people feel better off because they have purchased them. Economists call this satisfaction utility. The utility is not a characteristic of par-

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ticular goods, but rather consumer's reactions to those goods. The utility of a good exists not in the good itself, but in the preferences of the individual consuming the good.

Total utility is the number of units of utility that a consumer gains from consuming all goods, services, or activities during a particular time period. The higher a consumer's total utility, the greater that consumer's level of satisfaction.

Marginal utility is the amount by which total utility rises with consumption of an additional unit of a good, service, or activity, all other things unchanged. Marginal utility declines as people consume more of goods or services. The marginal utility of an item can change. For example, during a drought water provides a high positive marginal utility, and with more rain the marginal utility declines. At some point, there is too much rain, it turns from being a good utility to a bad one and the marginal utility of more rain, when it is already flooding, is negative.

The law of diminishing marginal utility states that as more of the good is consumed, the additional satisfaction from another unit will eventually decline.

Marginal and total utility are interrelated. When the marginal utility is positive – total utility increases. Total utility has its maximum when marginal utility equals to zero. Total utility begin to decrease, when marginal utility is negative.

The law of diminishing marginal utility explains the law of demand. The value (price) of a good is determined by marginal utility. This means that, when a consumer is satisfied with the good, an additional unit of this good brings him less utility. To make him buy this additional unit a buyer should decrease the price.

The choice of consumer – is a choice that brings maximum utility in conditions of restricted budget. Everything has a price and consumers only have so much money to spend. Consequently consumers try to spend the limited money they have on what will give them the greatest amount of satisfaction. The decision rule for utility maximization is to purchase those items that give the greatest marginal utility per dollar and are affordable or within the budget.

The rule of maximization of utility:

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = ... = \frac{MU_n}{P_n}. \qquad (6.1)$$

The concept of utility is an elusive one. Utility is a psychological phenomenon. It cannot be measured. That is why this theory is criticized.

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6.2. Ordinal theory: indifference curve and budget line. Consumer equilibrium

Ordinal theory is based on a statement that utility cannot be measured. It can only be ranked or ordered. The consumer can rank his preference very easily and say which good is better.

An indifference curve shows different combinations of two commodities, which give the consumer an equal satisfaction.

Assumptions of indifference curve analysis:

• The consumer is rational. He prefers more goods to less goods.

• He purchases two goods, X and Y only.

• The price that a consumer pays for a commodity indicates the level of utility derived by him.

• His income remains constant.

• His tastes, preference, habits remain unchanged.

An indifference schedule is a statement of various combinations of two commodities that will equally be accepted by the consumer. The various combinations give the same satisfaction to the consumer. A person is indifferent between various combinations.

The indifference schedule can be represented in the graph with one commodity on the X-axis and another commodity in the Y-axis. The various combinations of the two commodities form a curve called indifference curve (fig. 6.1).

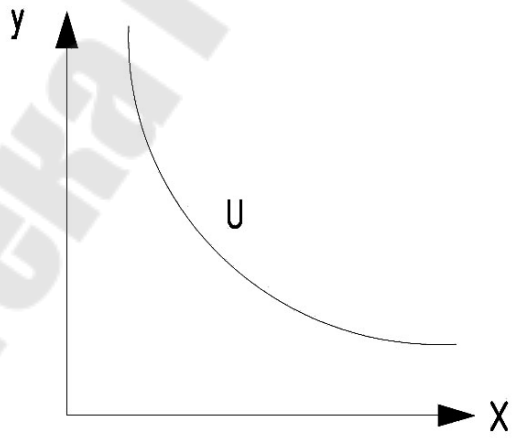

Figure 6.1 – Indifference curve

All the points on this curve give equal level of satisfaction to the consumer. Any point below and to the left of the indifference curve would produce a lower level of utility. Any point above and to the right of the indifference curve would produce a higher level of utility.

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Properties of an indifference curve:

1. Indifference curves slope downwards to the right.
2. Indifference curves are convex to the origin.
3. No two indifference curves can ever cut each other.

Marginal rate of substitution is the maximum amount of one good a consumer is willing to give up to obtain an additional unit of another:

$$MRS = -\frac{MU_x}{MU_y}. \qquad (6.2)$$

The marginal rate of substitution is the slope of the curve and measures the rate at which the consumer would be willing to give up one good for the other while maintaining the same level of utility.

Indifference map is a group of indifference curves for two commodities showing different levels of satisfaction (fig. 6.2). A higher indifference curve represents higher level of satisfaction and a lower indifference curve represents lower level of satisfaction. Being rational, the consumer will always choose a higher indifference curve to get maximum satisfaction, other things being equal.

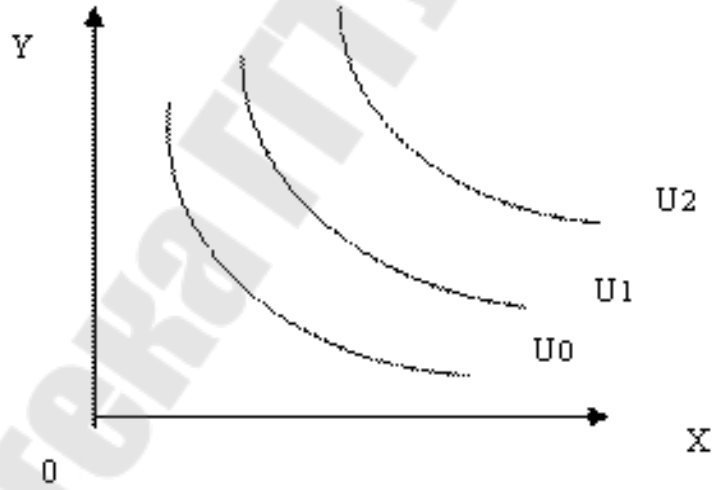

Figure 6.2 – Indifference map

A consumer's choice is limited by the budget available to him. Total spendings for goods and services may not exceed budget. Algebraically, we can write the budget constraint for two goods X and Y as:

$$I = P_x Q_x + P_y Q_y, \qquad (6.3)$$

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where P_x and P_y are the prices of goods X and Y and Q_x and Q_y are the quantities of goods X and Y. The total income available to spend on the two goods is I, the consumer's budget (income).

For a consumer who buys only two goods, the budget constraint can be shown with a budget line. A budget line shows graphically the combinations of two goods a consumer can buy with a given budget (fig. 6.3).

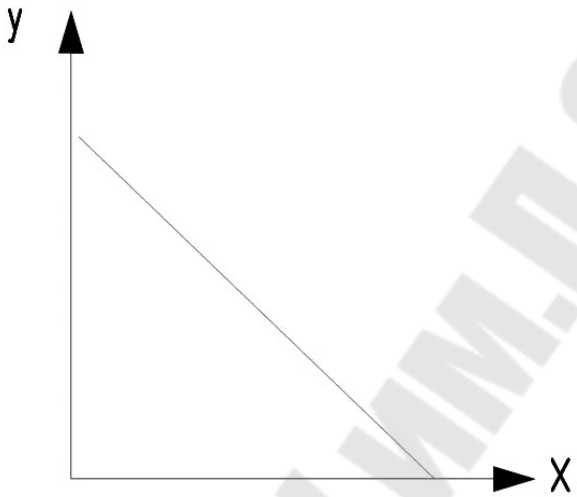

Figure 6.3 – Budget line

The budget line shows that the consumer cannot choose any combination beyond this line because his income does not permit him. And a combination below this line will not bring him the maximum satisfaction.

The slope of budget line represents the ratio of prices of the two goods – P_x/P_y.

The consumer gets the **maximum possible** satisfaction from his given income at point of tangency between the budget line and an indifference curve. It is the affordable combination that maximizes consumer's utility. Any other possible combination of the two goods will either bring less satisfaction or will be unobtainable at present prices, with the given amount of income of the consumer. At equilibrium point, the indifference curve and the budget line have the same slope (fig. 6.4). Hence, the formula of equilibrium is:

$$\frac{MU_x}{MU_y} = \frac{P_x}{P_y}. \qquad (6.4)$$

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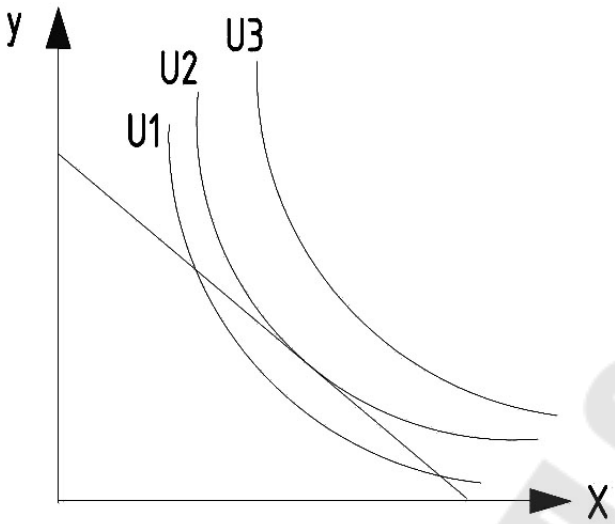

Figure 6.4 – Consumer's equilibrium

The fundamental condition of equilibrium is that the marginal rate of substitution of commodity X for commodity Y should be equal to the ratio of prices between the two goods. Therefore, the condition for equilibrium is:

$$MRS_{xy} = \frac{P_x}{P_y}. \qquad (6.5)$$

TOPIC 7. THE THEORY OF PRODUCTION

7.1. Function of production. Total product, marginal product and average product.

7.2. Isoquant, isocost line. Producer's equilibrium.

7.3. Short run and long run cost.

Keywords: production, utility, production function, total product, marginal product, average product, isoquant, isocost line, marginal rate of technical substitution, producer's equilibrium, total cost, marginal cost, fixed cost, variable cost, economic cost, accounting cost, normal profit.

7.1. Function of production. Total product, marginal product and average product

Production is the creation of those goods and services which have exchange value. It means the creation of utilities. Utility of a commodity may increase due to several reasons.

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Form Utility. If the physical form of a commodity is changed, its utility may increase.

Place Utility. If a commodity is transported from one place to another, its utility may increase.

Time Utility. If the commodity is stored for future usage, its utility may increase.

Possession Utility. Commodities in the transaction process change from one person to another person. Commodities in the hands of producers have some utility and by the time they reach consumers through the traders their utility is increased.

Production function reflects the relationship between inputs and outputs. Inputs refer to the factors which are used in production (land, labor, capital and enterprise). Output refers to the quantity of goods and services produced. Given technical conditions, the production function shows how a certain amount of inputs will result in the production of a certain amount of output of a commodity. The production function is given as

$$Q = f(x1, x2, x3 \ldots xn), \tag{7.1}$$

Q is the quantity produced during a given period of time; x1, x2, x3…xn are the quantities of different factors used in production.

The production function explains how the output can be maximized using given inputs.

To understand the different stages of the production functions, it is essential to understand the relationship between:

1. Marginal product and Total product.
2. Marginal product and Average product.

Total product is the output that is produced by all of the employed factors of production.

Marginal product is the additional output that is generated by an additional unit of factor of production:

$$MP = \frac{\Delta TP}{\Delta R}. \tag{7.2}$$

Average product is output that is produced by one unit of factors of production:

$$AP = \frac{TP}{R}. \tag{7.3}$$

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There is some relationship between marginal product and total product. When marginal product is positive, the total product increases. When marginal product is zero, the total product reaches the maximum and remains constant. When marginal product is negative, the total product decreases. As long as the marginal product of a factor is greater than the average product, the average product will rise. The marginal product will always intersect the average product at the maximum of average product.

The law of diminishing marginal returnsstates that as some amounts of the variable input are added to a fixed amount of other resources in the production process the marginal contribution of the additional variable resource will decline.

7.2. Isoquant, isocost line. Producer's equilibrium

An isoquant curve represents different combinations of two factors of production that provide the same level of output.

The isoquant helps to understand how different combinations of two or more factors are used to produce a given level of output. Each of the points isoquant shows a capital-labor combination that can produce the same output. Therefore the curve is known as an equal product curve or an isoquant curve (fig. 7.1).

Characteristics of an isoquant:

1. The isoquant is downward sloping from left to right i.e. it is negatively sloped.

2. An isoquant is convex to the origin because of the diminishing marginal rate of technical substitution.

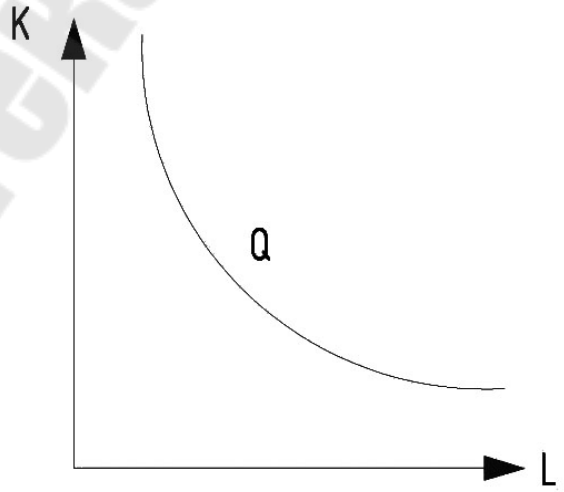

Figure 7.1 – Isoquant

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Marginal rate of technical substitution of factor L (labor) may be defined as the amount of factor K (capital) which can be replaced by one unit of factor L, the level of output remaining unchanged.

$$\text{MRTS} = \frac{\Delta K}{\Delta L}. \qquad (7.4)$$

Thus the marginal rate of technical substitution is always declining. Hence the isoquant is always convex to the origin.

The slope of the isoquant represents marginal rate of technical substitution.

A set of isoquants which represents different levels of output is called "isoquant map". Higher the isoquant, higher will be the level of output produced.

The isocost line plays an important role in determining the combination of factors that the firm will choose for production (fig. 7.2).

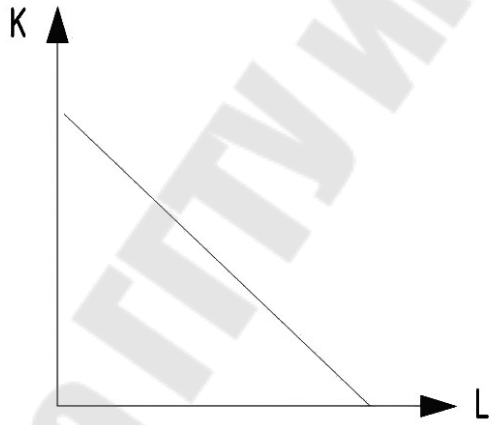

Figure 7.2 – Isocost line

An isocost line is defined as locus of points representing various combinations of two factors, which the firm can buy with a given outlay. Higher isocostlines represent higher total costs and lower isocost lines represent lower outlays.

The isocost line depends on two things:

1) prices of the factors of production;

2) total outlay, which a firm has to make on the factors of production. Given these two, the isocost line can be drawn.

The slope of the isocost line is equal to the ratio of the prices of two factors. Thus the slope of the isocost line is given as

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$$\text{Slope of isocost line} = \frac{\text{price of factor L}}{\text{price of factor K}}. \qquad (7.5)$$

A rational producer always tries to achieve largest volume of output from a given factor-expenditure outlay on factors so that these factors are combined in an optimal or most efficient way. The producer maximizes his profits and produces a given level of output with least combination of factors. This level of cost combination of factors will be optimum for him.

The producer will choose that level of output, where a given isocost line intersects the highest possible isoquant. This point will be the point of producer's equilibrium. At equilibrium point, the slopes of the isoquant and the isocost line are equal. Thus at the equilibrium point the marginal rate of technical substitution is equal to the price ratio of factors (fig. 7.3).

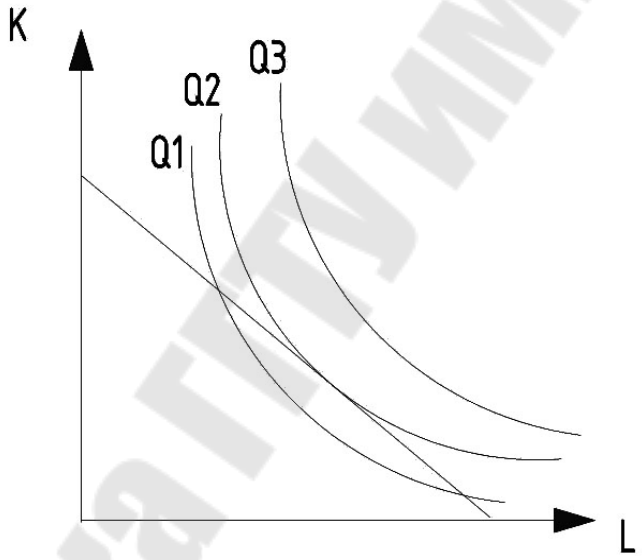

Figure 7.3 – Producers' equilibrium

Hence, the condition for is:

$$MRTS_{xy} = \frac{P_x}{P_y}. \qquad (7.6)$$

7.3. Short run and long run cost

Accounting costs or explicit costs are the payments made by the entrepreneur to the suppliers of various factors. The accounting costs are those costs, which are directly paid out or accounted for by the producer. The economic cost are the explicit cost and the implicit cost. The money

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rewards for the own services of the entrepreneur and the factors owned by himself and employed in production are known as implicit costs. Thus:

$$\text{Accounting costs} = \text{Explicit costs}, \tag{7.7}$$

$$\text{Economic cost} = \text{Explicit cost} + \text{Implicit cost} + \text{Normal profit}. \tag{7.8}$$

A normal profit is the minimum return to maintain a resource in its current use.

The goal of a firm is to maximize profit. Profit is a firm's total revenue minus its total cost:

$$\text{Profit} = \text{Total Revenue} - \text{Total Cost}. \tag{7.9}$$

Economic profit also subtract the implicit costs. By including implicit costs, we can determine if the resources are earning at least what could be earned if employed in the next best option.

$$\text{Accounting profit} = \text{TR} - \text{Explicit costs}, \tag{7.10}$$

$$\text{Economic profit} = \text{Total Revenue} - \text{Economic Costs}. \tag{7.11}$$

Economic profit is usually less then accounting profit. Economic profit helps to understand how correct the firm has chosen the field of activity. And the accounting profit shows how successful the firm is.

In the short run, at least one of the inputs or resources is fixed.

Fixed costs (FC) are those that do not change as the level of output changes. They are incurred even if the firm produces nothing at all (rent payments, insurance payments, interest on loans). Fixed costs can be quite large. Variable costs (VC) are those costs that change as output changes.

Total costs (TC) is the sum of total fixed costs and total variable costs:

$$\text{TC} = \text{FC} + \text{VC}. \tag{7.12}$$

Average total cost is a total cost divided by the quantity of output:

$$\text{ATC} = \frac{\text{TC}}{\text{Q}}. \tag{7.13}$$

It answers the question: How much does it cost to make the typical unit of a good?

Average total cost can be expressed as the sum of average fixed cost and average variable cost:

$$\text{ATC} = \text{AFC} + \text{AVC}. \tag{7.14}$$

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Average fixed cost is the fixed cost divided by the quantity of output:

$$AFC = \frac{FC}{Q}. \quad (7.15)$$

Average variable cost is the variable cost divided by the quantity of output:

$$AVC = \frac{VC}{Q}. \quad (7.16)$$

Average total cost tells us the cost of the typical unit.

Marginal cost is the amount that total cost rises, when the firm increases production by 1 unit:

$$MC = \frac{\Delta TC}{\Delta Q}. \quad (7.17)$$

MC give the answer on the following question: How much does it cost to increase production by 1 unit?

In the long-run all factors are variable. Therefore the firm can change the size of the plant (capital equipment, machinery etc.) to meet the changes in demand. The long-run cost of production is the least possible cost of production of any given level of output, when all inputs become variable, including the size of the plant.

SECTION 3. BASIC PRINCIPLES OF MACROECONOMICS

TOPIC 8. A NATION'S INCOME AND ITS MEASUREMENTS

8.1. The economies income and expenditure.
8.2. Defining GDP.
8.3. The measurements of GDP.
8.4. Real and nominal GDP.
8.5. Other measures of income.

Keywords: income, expenditures, gross domestic product, real GDP, nominal GDP, GDP deflator, gross national product, net national product, national income, personal income.

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8.1. The economies income and expenditure

To understand whether the economy is doing well or poorly, it is necessary to look at the total income that everyone in the economy is earning. That is the task of gross domestic product **(GDP)**.

GDP measures two things at once:

1) total income of everyone in the economy;

2) total expenditure on the economy's output of goods and services.

GDP can measure both total income and total expenditure because these two things are really the same. ***For an economy as a whole, income must be equal to expenditure*.** An economy's income is the same as its expenditure because every transaction has two parties: a buyer and a seller. Thus, for the economy as a whole, expenditure and income are always the same.

8.2. Defining GDP

Gross domestic product (GDP) is the market value of all final goods and services produced within a country in a given period of time.

GDP adds together many different kinds of products into a single measure of the value of economic activity. To do this, it uses market prices. Because market prices measure the amount people are willing to pay for different goods, they reflect the value of those goods.

GDP is comprehensive. It includes all items produced in the economy and sold legally in markets. However, there are some products, that are not included in GDP, because measuring them is so difficult:

1) most items produced and sold illicitly, such as illegal drugs;

2) most items that are produced and consumed at home and, therefore, never enter the marketplace.

GDP includes only the value of final goods. This is done because the value of intermediate goods is already included in the prices of the final goods.

GDP includes both goods and services.

GDP includes goods and services currently produced. It does not include transactions involving items produced in the past (used goods).

GDP measures the value of production within the geographic borders of a country. Items are included in a nation's GDP if they are produced domestically, regardless of the nationality of the producer.

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GDP measures the value of production that takes place within a specific interval of time. Usually, that interval is a year or a quarter (three months).

As we have seen, GDP measures both the economy's total income and the economy's total expenditure on goods and services.

8.3. The measurements of GDP

GDP (Y) is divided into four components: consumption (C), investment (I), government purchases (G), and net exports (NX):

$$Y = C + I + G + NX. \quad (8.1)$$

Consumption is spending by households on goods and services.

Investment is the purchase of goods that will be used in the future to produce more goods and services.

Government purchases include spending on goods and services by local, state, and federal governments. It includes the salaries of government workers as well as expenditures on public works. Transfer payments are not made in exchange for a currently produced good or service. Transfer payments alter household income, but they do not reflect the economy's production. Transfer payments are not counted as part of government purchases.

Net exports equal the foreign purchases of domestically produced goods (exports) minus the domestic purchases of foreign goods (imports).

8.4. Real and nominal GDP

If total spending rises from one year to the next, one of two things must be true:

1) the economy is producing a larger output of goods and services;

2) goods and services are being sold at higher prices.

To measure of the total quantity of goods and services the economy is producing that is not affected by changes in the prices of those goods and services economists use a real GDP.

The production of goods and services valued at current prices is called nominal GDP. Real GDP is the production of goods and services valued at constant base-year prices. Because real GDP is not affected by changes in prices, changes in real GDP reflect only changes in the amounts being produced.

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The GDP deflator is calculated as follows:

$$\text{GDP deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \cdot 100. \qquad (8.2)$$

The GDP deflator measures the current level of prices relative to the level of prices in the base year. The GDP deflator reflects what's happening to prices, not quantities.

The GDP deflator is one measure that economists use to monitor the average level of prices in the economy and thus the rate of inflation. Using the GDP deflator, the inflation rate between two consecutive years is computed as follows:

$$\text{Inflation rate in year 2} =$$

$$= \frac{\text{GDP deflator in year 2} - \text{GDP deflator in year 1}}{\text{GDP deflator in year 1}} \cdot 100. \qquad (8.3)$$

8.5. The other measures of income

1. Gross national product (GNP) is the total income earned by a nation's permanent residents (called nationals). It differs from GDP by including income that our citizens earn abroad and excluding income that foreigners earn here.

2. Net national product (NNP) is the total income of a nation's residents (GNP) minus losses from depreciation. Depreciation is the wear and tear on the economy's stock of equipment and structures.

3. National income is the total income earned by a nation's residents in the production of goods and services. It is almost identical to net national product. These two measures differ because of the statistical discrepancy that arises from problems in data collection.

4. Personal income is the income that households and noncorporate businesses receive. Unlike national income, it excludes retained earnings, which is income that corporations have earned but have not paid out to their owners. It also subtracts indirect business taxes (such as sales taxes), corporate income taxes, and contributions for social insurance (mostly Social Security taxes). In addition, personal income includes the interest income that households receive from their holdings of government debt and the income that households receive from government transfer programs, such as welfare and Social Security.

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Although the various measures of income differ in detail, they almost always tell the same story about economic conditions. When GDP is growing rapidly, these other measures of income are usually growing rapidly. And when GDP is falling, these other measures are usually falling as well. For monitoring fluctuations in the overall economy, it does not matter much which measure of income we use.

TOPIC 9. FINANCE AND FINANCIAL SYSTEM

9.1. Public finance and its principles.
9.2. The government budget.
9.3. Taxation system and taxes.

Keywords: financial system, budget, balanced budget, unbalanced budget, taxes, Laffer curve.

9.1. Public finance and its principles

Public finance is the study of the income and expenditures of a governmental entity. It deals with the finances of the government.

Public finance is a specific financial relationships and functions running between public administration bodies and institutions (the state) as one party and in mutual interaction with other entities of the economic system as the other party (households and companies).

The three parts of public finance are:

1) public expenditures;
2) public revenues;
3) public debt.

Public expenditure refers to the expenses incurred by the government for its own maintenance and also for the preservation and welfare of the society and economy as a whole. It refers to the expenses of the public authorities, for protecting the citizens and for promoting their economic and social welfare.

Public revenue includes all income and receipts, regardless of source and nature, which the government obtains during any given period of time. This would include loans received by the entity, and all taxes, fees, fines, penalties, gifts, donations, etc. The main source of public revenue is taxation.

Public debt refers to any and all notes, bonds, or loans acquired by the governmental entity.

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9.2. The government budget

The main financial document of the country is budget. Budget is an essential and important element of planning and development. Government budget indicates the probable income and expenditure of the government, the financial policies, taxation measures, investment opportunities etc.

A budget is a balanced estimate of expenditures and revenues for a given period of time. Budget includes two parts: government expenditures and government revenues.

Government expenditures include all spending by government. Government revenues include all funds received by government agencies. The main component of government revenues is taxes. It also includes receipts from fees, fines, and other sources.

Government expenditures and purchases are not equal because much government spending is not for the purchase of goods and services. Government purchases happen when a government agency purchases or produces a good or a service. The primary source of the difference is transfer payments, payments made by government agencies to individuals in the form of grants. Transfer payments represent government expenditures but not government purchases. Governments engage in transfer payments in order to redistribute income from one group to another.

There are two types of budget: balanced and unbalanced. Balanced budget is when government revenues are equal to government expenditures. Unbalanced budget is when revenue exceeds expenditure or expenditure exceeds revenue over a period of time.

If revenue exceeds expenditure – the budget is called to be surplus. If expenditure exceeds revenue – the budget is called to be deficit.

Classical economists advocated balanced budget. But it is not always helpful in achieving and sustaining economic growth. Modern economists argue that an unbalanced budget is very useful for achieving and maintaining economic stability. The government can use its spending and tax policies to influence the level of economic activity and the price level – fiscal policy.

9.3. Taxation system and taxes

The primary source of government revenue is taxes.

A tax is a compulsory charge or payment levied by the government on an individual or corporation.

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The canons of taxation:

a) canon of equity;

b) canon of certainty;

c) canon of convenience;

d) canon of economy.

Canon of equity. This principle is also called the 'ability to pay' principle of taxation. It means that taxes should be imposed according to the capacity of the tax payer. Poor should be taxed less and rich should be taxed more. This canon involves the principle of justice. All persons contribute according to their ability.

Canon of certainty. Every tax payer should know the amount of tax to be paid, when to be paid, and where to be paid.

Canon of convenience. Tax payment should be convenient.

Canon of efficiency. This principle signifies that the cost of collecting the taxes should be kept at the minimum possible level. The tax laws and procedures should be made simple. The relationship between taxes and income may take one of three forms: taxes can be regressive, proportional, or progressive.

Canon of economy. This principle suggests that the cost of collecting tax should be the minimum so that a major part of collections may bring to the Government treasury. If the administration expenses in the collection of taxes consume a major portion of tax revenue collected; it cannot be said to be a good tax system.

There are different types of taxes.

A regressive tax takes a higher percentage of income as income falls.

A proportional tax takes a fixed percentage of income. Total taxes rise as income rises, but taxes are equal to the same percentage no matter what the level of income.

A progressive tax is one that takes a higher percentage of income as income rises.

There are direct and indirect taxes. Direct taxes are collected from the public directly. That it is to say, these taxes are imposed on and collected from the same person. One cannot evade paying the tax if it is imposed on him.

Indirect taxes, though imposed on a person, is partly or wholly paid by another.

Determining the optimal tax rate. The Laffer Curve.

The Laffer Curve shows the relationship between tax revenue collected by the government and tax rates paid by citizens. The tax rates depicted on a Laffer Curve range from 0% to 100% (fig. 9.1).

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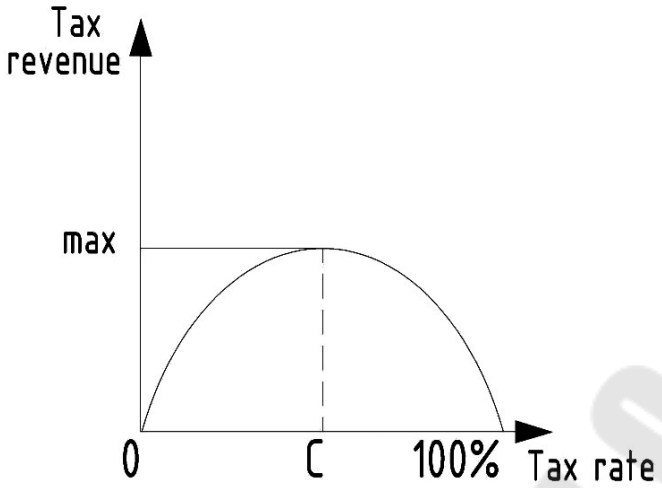

Figure 9.1 – The Laffer Curve

The shape of the curve implies that as tax rates rise, tax revenues will also increase. However, these increased tax revenues will only increase till a peak, and after which, the tax revenues begin to decline. This means that after a point it is counter-intuitive to keep increasing tax rates.

At 0%, the government collects 0 tax revenue.

Then the tax revenue increases till the point C.

After point C, the tax revenue falls even with an increase in tax rates. The decrease in tax revenue arises because higher tax rates create disincentives for people to work harder and to invest.

At a 100% tax rate, people will have no incentive to work at all.

Economists do not agree on where point C lies. Many politicians use the concept behind the Laffer Curve to justify tax cuts. The idea is that these tax cuts would actually increase tax revenue because the tax rates lie beyond the point C in the diagram below.

Topic 10. Macroeconomic instability

10.1. Economic cycle.
10.2. Unemployment and its consequences.
10.3. Inflation and its consequences.

Keywords: economic cycle, boom, recession, depression, recovery, unemployment, unemployment rate, frictional unemployment, structural unemployment, cyclical unemployment, Okun low, inflation.

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10.1. Economic cycle

All countries experience regular ups and downs in the growth of output, jobs, income and spending. A cycle is when GDP growth fluctuates around the trend. An economic cycle includes 4 stages: boom, recession, depression, recovery (fig. 10.1).

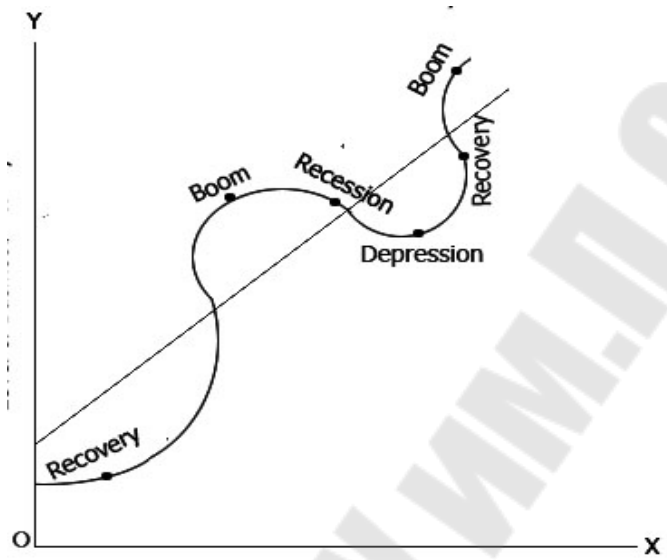

Figure 10.1 – Economic cycle

A boom occurs when real national output is rising at a rate faster than the trend rate of growth.

Some of the characteristics of a boom include:

– a fast growth of consumption helped by rising of real incomes, strong confidence and a surge in house prices and share prices;

– apick up in demand for capital goods as businesses invest in extra capacity to meet strong demand and to make higher profits;

– more jobs created and falling unemployment and higher real wages;

– high demand for imports;

– government tax revenues will be rising as people earn and spend more and companies are making larger profits – this gives the government money to increase spending in areas such as education, the environment, health and transport;

– an increase in inflationary pressures if the economy overheats.

A recession is a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and retail sales.

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There are many symptoms of a recession:

– a fall in purchases of components and raw materials (i.e. intermediate products);

– rising unemployment and fewer job vacancies available for people looking for work;

– a rise in the number of business failures and businesses announcing lower profits and investment;

– a decline in consumer and business confidence;

– a contraction in consumer spending & a rise in the percentage of income saved;

– a drop in the value of exports and imports of goods and services;

– large price discounts offered by businesses in a bid to sell their excess stocks;

– government tax revenues are falling and welfare benefit spending is rising;

– the budget (fiscal) deficit is rising quickly.

A depression is a prolonged and deep recession leading to a significant fall in output and average living standards.

A depression is where real GDP falls by more than 10% from the peak of the cycle to the trough.

Recovery

This occurs when real GDP picks up from the minimum reached at the low point of the recession.

10.2. Unemployment and its consequences

Each adult may be puted into one of three categories: employed, unemployed, not in labor forces.

Employed. This category includes those who worked as paid employees, worked in their own business, or worked as unpaid workers in a family member's business. Both full-time and part-time workers are counted. This category also includes those who were not working but who had jobs from which they were temporarily absent because of, for example, vacation, illness, or bad weather.

Unemployed. This category includes those who were not employed, were available for work, and had tried to find employment during the previous four weeks. It also includes those waiting to be recalled to a job from which they had been laid off.

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Not in the labor force. This category includes those who fit neither of the first two categories, such as a full-time student, homemaker, or retiree.

$$\text{Labor force} = \text{Number of employed} + \text{Number of unemployed}, \quad (10.1)$$

$$\text{Unemployment rate} = \frac{\text{Number of unemployed}}{\text{Labor force}} \cdot 100. \quad (10.2)$$

The economy always has some unemployment and that the amount changes from year to year. The normal rate of unemployment around which the unemployment rate fluctuates is called the natural rate of unemployment, and the deviation of unemployment from its natural rate is called cyclical unemployment.

The natural rate of unemployment includes two types of unemployment: frictional unemployment and structural unemployment. Frictional unemployment takes time for workers to search for the jobs that are best suited for them. Structural unemployment, this kind of unemployment results when wages are, for some reason, set above the level that brings supply and demand into equilibrium. The cyclical unemployment appears during the recession.

There are individual, social and economic consequences of unemployment.

Individual consequences. Unemployment is bad for health. A Pennsylvania study found that unemployed workers died more than a year earlier than average.

The longer the unemployment goes on, the more severe the health consequences, with increased depression and other health issues worsening over time. In addition to the obvious loss of income, unemployed workers were found to have lost friends and self-respect.

Also, the longer the unemployment goes on it becomes more difficult for the worker to find employment again – both because employers are wary of the long-time unemployed and also because over time, unemployed workers lose job skills.

Social consequences of unemployment. One consequence of unemployment frequently commented upon is an increase in crime.

Effects of unemployment on the economy. When unemployment increases, both state and federal governments pay increased unemployment benefits. Increased benefits require the government either to borrow money to pay these benefits, and by doing so, also deferring the costs into

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the future or reducing spending in other areas. This is a compensatory strategy, but it can make a bad economic situation worse.

Also unemployment reduces the GDP production. Economist Arthur Okun, concluded that even a 1-percent increase in unemployment reduced the GDP by 2–2,5 percent.

10.3. Inflation and its consequences

Inflation is a state in which the value of money is falling. During a period of inflation, the price level will rise. It is also described as a situation where too much money chases too few goods resulting in an abnormal increase of price level.

There can be inflation even without a rise in the price level. This situation is called repressed inflation. Usually this happens during a war period. On account of many controls and rationing that exist during wartime, prices will be kept under check. But prices will go up. So the real test of inflation is neither an increase in the amount of money nor a rise in prices, but the appearance of abnormal profits. Whenever businessmen and producers make huge profits, it is a sign of inflation.

Demand-pull Inflation take a place when too much money chasing too few goods. This refers to the situation where general price level rises because the demand for goods and services exceeds the supply available at the existing prices.

Cost – push inflation is induced by rising costs, including wages, so that rising wages and other costs push up prices. We can also speak of wage inflation or price inflation when we mean increase in wages or prices.

Creeping inflation is not more than 10% per year. This rate of inflation does not harm the economy.

Galloping inflation is more than 10% per year leads to serious violations of the monetary system in the country.

Hyper-inflation. In this situation, prices rise to a very great extent at high speed and high prices have to be paid even for cheap things. And money becomes quite worthless and new currency has to be introduced.

Inflation leads to inflation. During a period of inflation, prices will be high. Since prices are high, workers will demand high wages. High wages result in high. High costs in turn lead to high prices. Thus it forms a vicious circle. This is the inflationary spiral.

Deflation as a state in which the value of money is rising and prices are falling. Both inflation and deflation refer to the movement of prices.

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Deflation is the opposite to inflation. Generally inflation is a period characterized by rising activity and employment. But during deflation, there will be bad trade and unemployment. During deflation, since prices fall faster than costs, there will be heavy losses for producers and businessmen. There will not be profits in any branch of economic activity. So there will be a fall in investment. This results in unemployment. Both inflation and deflation are bad for economy.

Effects of changes in prices.

Effects on production. If prices are rising, it will stimulate production. During a period of rising prices (inflation), there will be abnormal profits. This increases production. Producers and businessmen gain during inflation. Producers gain by inflation because during that period prices rise faster than costs. So they make huge profits.

Fixed income groups. People in fixed income groups are hit hard in times of inflation. The incomes of wage earners and salaried people such as teachers, clerks and judges do not increase as fast as prices. Retired people getting pension are also affected during inflation.

Investors. People who have invested their money in government securities will get only fixed income. So their position is like those in the fixed income group. But those who have shares in companies will make profits during a period of rising prices and lose during a period of falling prices.

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