ECONOMICS

MASTER ADMISSION - 2020

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MICROECONOMICS

1. CAPITAL – DERIVED PRODUCTION FACTOR

1.1. Capital structure – a production factor

The capital – a production factor *is defined as the totality of accumulated economic goods, heterogeneous and reproducible, used in the production, distribution and selling of new goods and services.*

The following *means of production* are included in the capital: buildings used for economic activities, semi-machines, tools, aggregates, installations, raw materials, fuels, semi-finished goods etc., which, combined with other productin factors, lead to the production of final goods.

The capital – a production factor is also known as *real capital (technical, productive),* which, in relation to the primary production factors (labour and nature) represent the ***derived factor,*** because it is a result of previous economic processes ; it consists of those goods which are produced through labour, are accumulated and become input for further economic activities. The elements that form the real (productive) capital are also named : capital goods, intermediary goods, production goods, physical assets or investments goods.

Considering that the procurement of the elements of capital requires money (financial resources), we may see this production factor as saved and invested labour. Also, we may consider as natural that the money is assimilated to the capital, as as it is destined to investment into production goods. In this case, the money resources represent nothing else but the initial form of existence for the real capital.

Under the current technical and scientific circumstances, the capital goods have a technical and heterogeneous structure. Within this context, a special interest is presented by *the way in which various components of the real capital participate in the production, how they are consumed and replaced.* According to this criterion, the real capital is divided into *fixed capital* and *working capital.*

> ➢ ***The fixed capital*** *represents that part of the real capital, which participates in many production cycles, maintaining its initial material form, loses value (is consumed) gradually and is replaced after many years of use.*

From a material (corporal) point of view, it consists of the following *fixed assets :* machinery, techical installations, industrial tools, aggregates, technology lines, measuring and adjusting mechanisms, means of transport, various constructions, special buildings etc. From a financial and acoounting point of view, lands also belong to the fixed capital, but in terms of political economy, they belong to the natural production factor.

The defining feature of the fixed capital is that it is subjected to the **amortisation** process, due to its depreciation in time and the necessity to ensure funds for replacing overused fixed assets.

> ➢ ***The working capital*** *is that part of the real capital which transforms and is consumed entirely during a single production cycle and which needs to be replaced every new cycle.*

It consists of the following elements or *working assets:* stocks of raw materials and materials, fuels, energy, industrial water, semi-finished goods, unfinished productions, etc. All these elements are likely to be used in many alternative ways, depending on their closeness to the stage of natural raw materials.

The working capital is subjected to a continuous **rotation** process, which transforms it from money into production goods, and from that stage into goods for sale. The money resurces resulted after selling goods are (partially) redistributed in order to procure new working assets and the capital circuit is started again.

The real capital has an essential role in any economic activity, forming the sole of sustainable development of all economic branches, an essential component of the wealth of a nation in its entirety. Together with the other production factors, the capital[1] contributes to the increase and diversification of production, the improvement of the quality of products and optimization of the use of labour force. The volume, structure and quality of the real capital determine the level of economic development of a company, of the economic branch to which it belongs and, eventually, of the national economy.

1.2. Fixed capital formation and depreciation

The rapid and continuous technical progress in the production of goods and services produces significant, quantitative and structural changes to the production capital, its effects being analised based on the following processes : the gross fixed capital formation (gross investment); the fixed capital depreciation (wear and tear); fixed capital renewal, etc.

The real capital formation (productive) is carried out through *capital investments,* namely money spendings for creating new fixed capitals, renewing and modernising the existent ones, as well as increasing the stocks of production materials.

The capital investments take the shape of gross capital investments and net capital investments. ***The gross investments*** stand for the gross formation of capital and consist of net investments to which the amortisation is added, as an expression

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[1] From the point of view of the financial and accounting analysis of a company's ballance-sheet assets, the two major components of the real capital (fixed and working) include other elements in their structure as well, which are non-corporal (participation securities, credit securities, patents, licenses, cash balances, etc.). Considering the concept of capital – production factor, which is specific to the study of political economy, as a fundamental science, we refer only to what was stated above, a more specialized approach on the matter being applied by other economic subjects.

of the consumption of the fixed capital. **The net investments** are the net investment of the capital and consist of allocated money resources for increasing the volume of fixed capital and stock of materials.

The sources of capital investments are: *the amortisation fund ; funds from the net income ; the residual value of fixed assets ; external sources (the increase of the social capital, the mortgage bond, the bank credit, budget allocations).*

It is worth mentioning that the fixed assets (similarly to the wroking assets) are subjected to a rotation process, but this process cosists of the fact that the fixed assets take part in many production cycles over more years, while they transfer a part of their value to the newly created goods and undertake wear and tear. At the end of the amortisation period the capital cycle is ended and another one begins, generating a specific rotation.

The wear and tear of the fixed capital is a natural and inevitable process, which consists of the depreciation of technical, economic and functional characteristics of the capital elements, under the influence of certain factors. In correlation with the action of these factors, the wear and tear of the fixed capital may fall into two categories: physical wear and tear and moral wear and tear.

The physical wear and tear of the fixed capital consists of the deterioration of technico-functional elements and the gradual decrease of its capacity to function due to overuse in the production process or due to the destructive influence of natural agents (factors).

Moral wear and tear of the fiexed capital is the depreciation process that affects its functional and economic characteristics, due to the scientific, technical and technological progress. The moral wear and tear may consist of two forms: *type I* (when new fixed capital goods appear, with the same productivity but for a lower price due to the increased labour productivity); *type II* (when new capital goods appear for similar prices but with better characteristics).

Under the current conditions of technological progress, the moral wear and tear takes place alongside the physical one and may determine the removal of the good from use before the end of its normal functioning period (before full physical wear and tear). The non-amortised part of these elements of fixed capital which are replaced before term (from the physical point of view) are considered economic losses. To avoid these losses, determined by the superior dynamics of the moral wear and tear as compared to the physical one, an intensive use and the accelerated amortisation of the fixed capital is recommended.

Although an objective phenomenon, the wear and tear (both physical and moral) may be prevented or tackled through a series of ways*: rational and effective use of the fiexed capital ; periodical maintenance and revisions; regular and capital repairs; modernization operations etc.

The necessity to recover the values of the fixed capital, repeatedly transmitted, through the wear and tear process, to the newly created goods, represents the economic foundation of amortization. Thus, during functioning period, in many production cycles, the purchase price or the money equivalent of

the value of fixed capital is gradually transferred to the new products, including the production cost and is recovered through the selling cost of the production. In this way, the money resources are replenished especially for replacing the out-of-use fixed capital.

Therefore, *the money equivalent of that part of the fixed capital which corresponds to its wear and tear (physical and moral) which is transmitted to the new products and is recovered in the selling price, is called **amortization.*** The sums of money which are amortized form the *amortization fund,* meant for replacing fully overused fixed assets but also for procurement of new fixed assets (net investments).

It must be noted that the amortization does not apply for the whole period of usage of the fixed asset, but as it is obtained (annually) for ongoing investments. If the economic agent has not included any investment in the current year, the amortization may be used for financing current activities of purchase of financial assets portfolios, with a view to generating financial income.

Furthermore, a characteristic of the amortization is that it holds a ***double character,*** a contradictory one, due to the fact that it is both a significant element of the cost and a financing resource for investments, two states that contradict each other. Thus, as an element of cost, the interest of the economic agent require the reduction of amortization, but when it is viewed as financing resource, the economic agent is interestd in increasing its level. These are the aspects to be considered when the amortization policies are elaborated.

The amortizatin of fixed capital elements (fixed assets) is realized through ***three specific methods***: *proportional amortization (liniar), accelerated amortization (regressive) and progressive amortization,* each of them being applied depending on current regulations.

- ***The proportional system (liniar)*** of amortization involves the establishment of an equal annual amortization for the whole period of usage of the fixed asset, due to the fact that both the value to amortize and the amortization level remain constant.

▪ *Normal periods of function* (Dn), which are rendered in years, are established through legislation for each category of fixed assets and are compulsory for all economic agents who use the same type of fixed asset.

▪ *The amortization norm (An)* may be defined as the size of amortization rendered in percentage from the income value of fixed assets in use.

▪ *The amortization value,* in the liniar system, represents the income value of the fixed asset (purchase price of provide to which are added the transportaion costs, assembly and installation costs ; the production costs for fixed assets that were built in the company).

Thus, based on previous remarks, the following relations may be determined: $A = \dfrac{Vi}{Dn}$ or: $A = Vi \times An,$ therefore: $An = \dfrac{A}{Vi} \times 100,$ from which: $An =$

$\dfrac{1}{Dn} \times 100$, in which: An – amortization norm; A – annual amortization; Vi – income value (amortization value); Dn – normal functioning period.

Therefore, for determining the total amortization, the amortization norm is applied annually to the amortization value and to the income value, until the sum of annual amortizations is equal to the income value or until the net accounting value reaches zero.

The proportional system (liniar) of amortization has several advantages as it uses a relatively simple calculation of amortization and ensures a certain correspondence to the productino costs, due to its annual influence with the same sum. Although, the system has the disadvantage of recording some losses provoked by the moral wear and tear, when the functioning period is not well designed.

- ***The accelerated system (regressive)*** of amortization means the determination of an annual amortization which decreases during the functioning period of the fixed asset. This implies the recovery of the income value of the fixed asset in larger ammount in the first part of usage. This system is also called regressive or degressive because the ensuring of the annual decreasing amortization is carried out based on the decrease in value of the depreciated fixed asset, while the amortization norm remains constant.

The amortization value, in the case of the accelerated system (regressive), is the *accounting net value* (part of the income value of the fixed asset which is still un-amortized at a certain moment), which decreases as the cumulated value of amortizatio increases and to whith the established norm of amortization is applied, similarly to the liniar system.

Thus, the annual amortization is determined in accordance with the following formula: $A = Vcn \times An$, where: Vcn – accounting net value (when the Vcn service is started and is the same as Vi)

The accelerated system applies on a larger scale to the majority of countries with a developed market economy, which offers advantages in what regards the risks of moral wear and tear to which fixed assets are subjected.

- ***The progressive system*** of amortization cosists of establishing increasing annual amortizations, within the period of usage of the fixed asset. The amortization is established by applying, every year to the constant amortized value and the income value of the fixed asset, an increasing norm, established differently to the liniar system.

Even though the progressive amortization system has a logical argumentation (in the sense that the amortization increases permanently while the fixed assets gets overused), it is rarely used in practice, because, from an economic point of view, leads to an uneven distribution of expenses for the exploitation of the fixed asset. Thus, by the end of the usage period, when the maintenance and repairing costs are high the amortization increases. However, this amortization system has the advantage of obtaining lower costs in the first part of its functioning period, with positive implications on the increase of profit in the first years of activity.

1.3. Circuit and rotation of working capital

The formation, usage, transformation (consumption) and renewal of the working capital create a continuous monetary flow, named circuit and rotation of capital.

The capital circuit is the singular passing of the capital through *three functional forms* (monetary, productive, merchandise) or *three stages* (supply, production, selling).

⇨ ***The first stage*** of the capital circuit is the *supply,* which aims at transforming the money capital of the company (Cb) into productive capital (Cp), by purchasing intermediary capital goods which are necessary to production. At the same time, the company functions as a buyer on the labour market, attracting labour force. The relation of this stage is: Cb→Cp.

⇨ ***The second stage*** consists of the *production itself,* in which the usage and transformation of the productive capital (Cp), by combining with the other production factors, in merchandise goods, meant to be sold on the market (Cp→M).

⇨ ***The third stage*** consists of *the outlet* (selling) of merchandise, in which the transformation of merchandise capitl turns into money capital (Cb'), the form from which it initially started, but amplified (M→Cb'), this being the objective condition of capital self-recovery.

The quantitative surplus of money (b = Cb' - Cb) is the ***gross added value*** of the company, namely the value of the gross production, from which, if the expenses for labour force (S), amortization (A) and indirect taxes are deducted, results the entrepreneur's the ***net profit*** (Pb). This is reflected in the following relations:

$$Cb' > Cb \ ; \ \ Cb' = Cb + A + S + Pb$$

The three stages of the circuit form a whole unit, are mutually conditioned and determine the duration of a circuit, which has to be as short as possible. The unity and interdependency of the three stages of the circuit capital are determined by the necessity of recovering production costs and obtaining profit, which are economic premises that are impossible to achieve without the successive transformation of the money capital into productive capital, of the productive capital into merchandise and finally into money capital, augmented in comparison with the initial amount.

The capital rotation is the circuit of the capital considered not as an isolated and singular act but as a repeated one. The continuous character of the consumption cannot be analized in isolation, only as movement through a circuit, but as a permanent and successive passing through more circuits (cycles).

In what regards the capital rotation, the efficiency of its usage is dependent on acceleration of the ***rotation speed,*** which is the increase in the number of circuits carried out in a certain period of time (trimester or year). The time (in days)

necessary for finishing a full circuit is the ***rotation duration*** of the capital, which has to be as low as possible.

The more accelerated the rotatino speed is, the larger volume of activity can be obtained in a given period, which means that with the same sum of working assets more economic processes can be carried out (circuits), as well as a larger volume of production.

The efficiency of the use of working capital may be measured with the help of two indicators: ***rotation speed factor (Kv)*** and ***rotation duration in days (Dz),*** where:

$$Kv = \frac{Ca}{Cc}, \quad \text{and} \quad Dz = \frac{T}{Kv} \quad, \text{in which:}$$

Ca - turnover (sales volume), Cc – used working capital, T – number of days for which the calculation applies (trimester or year).

The rotation speed factor (Kv) gives the number of circuits that need to be carried out or were carried out by a volume of working assets, in order to obtain a certain volume of production or a turnover in a given period of time. The larger the number of carried out circuits, the larger the volume of working assets of expected turnout, with beneficial effects on the decrease of exploitation expenses and improvement of financial blocks.

Among the important ***factors*** which may impact the rotation speed of the working capital there are: the technical level of production equipment; the productin technologies; the optimal combination of production factors; the rhythmicity of supply; the capacity and speed of transportation means; the relationship between produced goods and human needs; the quality and price of produced goods, etc.

2. USE AND CONSUMPTION OF PRODUCTION FACTORS

2.1. Productivity and its forms

In a productive activity, **the efficiency of using the production factors** may be rendered by one of the following **indicators:**

1. through the indicator named ***productivity (efficiency) of production factors*** used, which reflects the value of the production in a unit of factors, based on the following ratio:

$$W(Rf) = \frac{Q}{CF}$$

where: Q – production value (in physical or value units); CF – the consumption of factors (physical or value related).

Through this calculation variant, the increase of efficiency implies the *maximization* of this ratio and is possible when the demand is on the rise or

when the market has a higher potential so that the company may supplement the supply.

2. through **the efficiency (profitability) indicator,** which refers to the capacity of a company to obtain profit and is given by *the profit rate (efficiency),* calculated in different ways, depending on the interests of the economic analysis:

$$R_{pr/C} = \frac{P}{C} \times 100 \; ; \; R_{pr/CA} = \frac{P}{CA} \times 100 \; ; \; R_{pr/Cp} = \frac{P}{Cp} \times 100 \; ;$$

where: $R_{pr/C}$ – efficiency rate of advanced capitals; $R_{pr/CA}$ – efficiency rate of income; $R_{pr/Cp}$ – consumed capitals efficiency; P_r – profit level (gross or net); C – used capital (fixed and working), CA - turnover; C_p – total cost of production (fixed and variable costs).

3. through the **specific consumption of production factors,** which represents the efforts (consumption of factors) distributed to a production unit or income.

$$C_{sf} = \frac{CF}{Q}$$

where: Q – production value (in physical or value units); CF – consumption of factors (physical or vaue related).

In this case, the increae of economic efficiency implies the *minimization* of the ratin and is possible when the demand for the specific product does not increae or when the supply of factors is limited.

The productivity is a measurement of efficiency used in a productino process or, in other words, *the efficiency with which the production factors are used in a productive activity.* The productivity establishes a quantitative connection between the production obtained in a period of time and the production factors used for the same period.

In a general understanding of the economic theory, considering the correlating measures, the productivity of productino factors has two **fundemental forms**, namely: *partial productivity* and *global productivity*.

► **The partial productivity (W_{Fi})** represents the efficiency of a productino factor (F_i) considered as the origin of production and its modification, while the others remain constant. Depending on the factor, partial productivity is rendered by the following classical forms: *labour productivity ($W_L = Q/L$); land productivity ($W_P = Q/P$); capital productivity ($W_K = Q/K$).*

The productivity of the production factor is its own quality, resulted from its level of technical state, of contributing to the creation of mass of goods and services under the conditions of maintaining a constant level of perfection for the other production factors.

► *The global productivity (W_G)* is the aggregated efficiency of all production factors involved in obtaining a useful effect. This form of productivity is difficult to evaluate because the methods of adding up all used production factors (heterogeneous sizes) are not scientifically determined. From a mathematical and economic point of view, it reflects the relation between the total production and the total volume of used factors (in value): $W_G = Q/(L+K+P)$

Both the partial productivity and the global one may be determined, in their turn, as *average productivity* and *marginal productivity*.

➢ *The average productivity (W_m)* is the measurable ratio between the total volume of production (ΣQ) and, either the total volume of a certain factor (ΣF_i), or the total volume of factors involved in an economic activity (L,K,P). Hence, the indicator can be presented in two ways, in partial and global expression:

$$W_m = \frac{\Sigma Q}{\Sigma Fi}$$

$$W_m = \frac{\Sigma Q}{\Sigma L + \Sigma K + \Sigma P}$$

➢ *The marginal productivity (W_{mg})* is the supplement, the production increase (ΔQ), obtained with a supplementary unit from a certain factor (ΔF_i), the with the other remaining constant. If we consider an infinitesimal variation (close to 0) of the factor "i", we can calculate the partial differential of the production function in relation to the factor in question. Moreover, we can calculate the production gain generated by the last units used from each factor if we refer to the global size. The relations are as follows:

$$W_{mg} = \frac{\Delta Q}{\Delta Fi} \quad \text{or} \quad W_{mg} = \frac{\partial Q}{\partial Fi}$$

$$W_{mg} = \frac{\Delta Q}{\Delta L + \Delta K + \Delta P}$$

In fact, the determination of the productivity level of involved factors can be carried out using the *classic method* and *the productino functions method.*

Through **the classic method,** productivity is determined by relating the production indicators (Q) to the production factors (L, K, P), resulting the following **productivity indicators:** *labour productivity* (social, average, marginal); *capital productivity* (average and marginal); *land productivity* (average and marginal).

Labour is the most important factor of any economic and social activity, and its fruitfulness is one of the essential forms of economic efficiency.

♦ *Labour productivity (W_L) is defined, therefore, as the efficiency with which a certain amount of labour is spent.* Depending on the character of the labour, its productivity may be: productivity of *social labour*, productivity of *individual work (average)* and productivity of *marginal work.*

◊ *The productivity of social work (W_{VN})* expresses the efficiency of spending work in the process of producing goods and services at the level of national economy, or, the efficiency with which work is used under average

conditions of technological endowment, production organization, qualification and intensity.

It is determined as a relation between the macroeconomic indicators (national income - NI, gross domestic product - GDP, gross national product - GNP etc.) and the working or active populatino (L), using the relations:

$$W = \frac{NI}{L} \; ; \; W = \frac{GDP}{L} \; ; \; W = \frac{GNP}{L}$$

It is not determined, therefore, as an average of individual productivities, by calculating the added gross value (net) at the level of national economy and not the gross national production.

◊ *The average labour productivity (W_{Lm})* refers to the efficiency with which the human factor is used at the level of each economic agent, depending on the specific conditions of technological endowment, organization, labour qualification and intensity. It reflects the efficacy with which a certain quantity of labour is spent. The increase of individual labour productivity forms the base of increasing social labour productivity.

This is measured by relating the total volume of production (ΣQ) to the quantity of labour (ΣL), as follows:

$$W_{Lm} = \frac{\Sigma Q}{\Sigma L} \; , \text{ in which:}$$

W_{Lm} – labour productivity; Q – quantity of obtained goods and services; L – number of workers or number of work hours. The production (Q) is rendered either in physical units (pieces, kg, tone etc.) or in value units (Ron, Dollar, Euro etc.), while the labour expenditure (L) is rendered in the number of employees or allocated time units (hours, days, months, years, etc.).

◊ *The marginal work productivity (W_{Lmg})* gives the efficiency of the last labour unit involved in the economic activity and is determined as a relation between the absolute variation of production (ΔQ) and the absolute variation of the quantity of labour (ΔL), as follows:

$$W_{Lmg} = \frac{\Delta Q}{\Delta L}$$

Conversely, it represents the supplementary production (ΔQ) which may be obtained under the conditions of using one additional unit of from the labour factor (ΔL).

The capital productivity (W_{K}) highlights the link between the capital and outputs and reflects the yield with which productive technical capital is used. It is expressed, as in the case of the work factor, by the *average* productivity and *marginal* productivity indicators.

◊ *The average capital productivity (W_{Km})* is calculated as the ratio between the results obtained over a period of time (ΣQ) and the technical capital used (ΣK). The relationship between the capital factor and the outputs can also be interpreted

in the form of the *average capital coefficient* (K_m), which expresses the capital required for obtaining a production unit. We have the following two relationships:

$$W_{Km} = \frac{\Sigma Q}{\Sigma K} \; ; \; K_m = \frac{\Sigma K}{\Sigma Q}$$

◊ *The marginal capital productivity* (W_{Kmg}) expresses the efficiency of the last unit of the technical capital attracted and used in the economic activity and it is determined as the ratio between the absolute variation of production (ΔQ) and the absolute variation of the technical capital used (ΔK). Similarly to the relationship above, *the marginal capital coefficient* (K_{mg}) is a ratio between the supplementary capital used (ΔK) and the afferent production increase (ΔQ), so:

$$W_{Kmg} = \frac{\Delta Q}{\Delta K} \; ; \; K_{mg} = \frac{\Delta K}{\Delta Q}$$

♦ **Land (nature) productivity** (W_p) expresses the efficiency of the natural factor of production used in economic activity (arable land, forest, pastures, orchards, etc.).

◊ *Average productivity of the land* (W_{Pm}) is calculated as the ratio between the obtained useful effect (ΣQ) and the area of land used (ΣP) for obtaining the useful effect (for agricultural production) according to the relationship:

$$W_{Pm} = \frac{\Sigma Q}{\Sigma P}$$

◊ *The marginal productivity of the land* (W_{Pmg}) expresses the yield of the last unit of land (m^2, ha) attracted to the economic activity and is determined as the ratio between the absolute variation in production (ΔQ), expressed physically or in value, and the absolute variation of the area (ΔP), according to the relationship:

$$W_{Pmg} = \frac{\Delta Q}{\Delta P}$$

Determining the factor productivity by the classical method, it is argued that a production created by the combined input of all factors of production is, in turn, related to each production factor as if it were its result, which obviously does not correspond to reality. At the same time, contradictory developments in the productivity of some factors are possible in case of their substitution. For example, by partially replacing work with production equipment at a higher technical level, the following situation may arise: work productivity increases, but fixed capital productivity (expressed by price) decreases, which requires further analysis for the substitution decision of the factors.

To overcome these disadvantages (limits), one of the calculation methods used existing in the modern economics is that of **production functions**.

The production functions represent the functionally expressed link between the output of a production activity (Q) and the factors that determine it (wage, labour, technical capital, etc.). The general form of the production function with "n" variables is

$$Q = f(x_1, x_2, x_3, ... x_n),$$

where $x_1, x_2, x_3, ... x_n$ are the variable production factors. The production function shows all the possible combinations of factors and the product obtained.

In this case, it is estimated that the best link between the outputs and the production factors, in the conditions of partial substitutability between factors, is *the Coob-Douglas type function*, formulated by the economists C.W. Coob and P.H. Douglas, which presents itself as a relation of the type $Q = f(K, L)$. According to this, production depends on the size of the capital and the amount of labour used:

$$Q = A \times K^\alpha \times L^\beta ,$$

in which, Q – the calculated output expressed in value; K - the technical capital used; L – the labour used in terms of number of employees; A – the proportionality coefficient between labour and capital; α – the elasticity of production versus capital; β – the coefficient of elasticity of production relative to labour. So: A, α, β are positive parameters that influence factors in their specific way.

Based on the Cobb-Douglas production function, the following indicators can be calculated with relevance in the microeconomic analysis:

1. Average productivity (average yield – R):

$$R_L = \frac{Q}{L} = \frac{A \times K^\alpha \times L^\beta}{L} = A \times K^\alpha \times L^{\beta-1}$$

$$R_K = \frac{Q}{K} = \frac{A \times K^\alpha \times L^\beta}{K} = A \times K^{\alpha-1} \times L^\beta$$

2. Marginal productivity (marginal or differencial yield - R_D):

$$R_{DL} = \frac{\partial Q}{\partial L} = \beta A \times K^\alpha \times L^{\beta-1} = \beta R_L$$

$$R_{DK} = \frac{\partial Q}{\partial K} = \alpha A \times K^{\alpha-1} \times L^\beta = \alpha R_K$$

2.2. Concept and types of production costs

According to a broad definition[2] of economic literature, **the cost of production** *is the monetary (value) expression of consumption of inputs, to obtain a good or service, or in other words, it represents the total consumption expenditure of inputs, in view of production and sale of economic goods.*

The value expression of all these costs allows us to measure and compare the consumption of all the inputs used, regardless of their nature. Also, *the costs of*

[2] Niţă Dobrotă, *Political Economy*, Economică Publishing House, Bucharest, 1997.

the inputs used must be reflected in the sale price of the goods and services so that they can be recovered and thus the economic activity continued.

The inclusion of these costs in the sale price of the economic asset is made through the cost of production and it is in fact the "effort" value that the firm makes to produce and bring to market a certain good or service.

In modern microeconomics theory there are *two concepts (ways)* of assessing production costs at the level of an economic agent, namely: ***accounting concept and economic conception***.

According to the **accounting** concept, the total cost of production is equivalent to the notion of *accounting cost* (*explicit cost*). Indeed, when assessing the total cost of production, account is taken of the total costs that the entrepreneur (firm) carries out with the acquisition of the factors required to carry out the business as well as those related to the tax obligations. They make up the explicit cost over a certain period of time and are highlighted through specific, standardized documents (invoices, receipts). In particular, this type of cost includes the following *categories of expenses*: salary and other personnel costs; expenses on raw materials, materials, energy; expenses with amortisments; expenses for the payment of telephone services, rent; heating expenses; interest charges; expenditure on taxes and other contributions, etc.

The difference between the total revenue (turnover) and the total explicit cost (accounting) total is the company's gross profit (Pc).

$$Pc = VT - CT = VT - Cexpl$$

From this, if the income tax is deducted, calculated according to the regulated tax procedures, results the *net accounting profit*, which remains at the disposal of the firm.

According to the **economic** concept, the cost of production is more comprehensive, including in its structure both the explicit costs and the costs called *implicit* or "non-imputable" to the production.

In general, explicit costs refer to those costs incurred by third parties, largely corresponding to the payment of factors purchased externally. But firms can also use their own factors, which they do not buy from other economic agents because they own them. The production costs that would be incurred if the company's own resources were purchased on a costly basis are *implicit costs*.

The implicit costs therefore reflect the consumption of the factors that the firm owns, such as: land, buildings, equity, the work of organizing and managing the business, etc.

In this case, the cost of production (economic) is higher than the accounting cost, including in its structure and what constitutes the *normal profit*, as a reward for the consumption of production factors of the owner – entrepreneur, not recorded in the accounting cost.

The implicit cost thus means *the opportunity cost of the production factors* owned by the entrepreneur (firm), that is, the sum of all the revenues that could be

obtained by him from the factors owned, in the best use, which he gave up. As such, this revenue must be in the so-called *normal profit*, equivalent to the notion of *implicit cost*.

The implicit cost is only relevant for determining *the economic profit* as the difference between the total revenue received and the total cost of production (the sum of the explicit cost and implicit cost). In this case, the economic profit (Pe) appears to us as part of the accounting profit (Pc), the rest being the normal profit (Pn), as follows:

$$Pe = VT - CT = VT - (Cexpl + Cimpl)$$
$$Pc = Pn + Pe$$

The cost typology (structure) highlights their role and economic significance, from different angles of economic analysis and behavior of economic agents.

The most general **cost typology** expresses their classification by three groups of *criteria*:

I. Following the relationship between the evolution of the different expenses and the change in production, the cost of production is divided into the following:
   a) ***fixed costs*** (CF) category which includes those production costs that, in the short run, do not depend on the volume of production, remaining relatively constant, regardless of production change, such as fixed capital depreciation, rent, general lighting and heating units, interest rates, salaries of administrative staff, etc.
   If Q = 0, CF > 0.
   b) ***variable costs*** (CV) category, which includes those production costs that, in the short run, evolve in the same way as production change, such as: raw material and material expenses, fuels, energy for production, salaries of productive staff, etc.
   If Q = 0, CV = 0.
   c) ***total costs*** (CT) category which includes the sum of the fixed and variable costs, i.e.: $CT = CF + CV$.

II. According to the way of reporting the production costs (total, fixed or variable) to the obtained output, the following ***average (unit) costs*** are obtained:
   a) ***the average fixed cost*** (CMF) is the fixed cost per unit of product or service and is calculated by reporting the total fixed costs to the output obtained (Q), i.e.:

$$CMF = \frac{\Sigma CF}{\Sigma Q}$$

   b) ***the average variable cost*** (CMV) is calculated by reporting the total variable costs to the output obtained and expresses the variable cost per production unit as follows:

$$CMV = \frac{\Sigma CV}{\Sigma Q}$$

c) **the total average cost** (CMT) is determined as the ratio between the total cost of production and the volume of production or the sum of the average cost and the variable average cost as follows:

$$CMT = \frac{\Sigma CT}{\Sigma Q} \quad \text{sau}$$

$$CMT = CMF + CMV$$

III. The interdependence between the increase in production and the increase in the total cost of production is reflected by the **marginal cost** (Cmg). This is defined as the total expenditure increase (ΔCT), driven by the increase by one unit of the production volume (ΔQ), and if we take into account infinitely small production increase the marginal cost appears as a derivative of the total function cost:

$$C_{mg} = \frac{\Delta CT}{\Delta Q} \quad \text{sau} \quad C_{mg} = \frac{\partial CT}{\partial Q}$$

The determination of marginal cost plays a decisive role in determining the optimal variants of future production, so that the increase in production is achieved with as reduced effort as possible. In this sense, the marginal cost size may be higher, equal or lower than the average cost (unit). The marginal cost is of particular importance in making decisions about increasing the production of goods. Following the increase in profits, economic agents will be stimulated to carry out additional production only if the marginal cost is lower than the average cost (unit), as follows: Cmg <CM.

3. DEMAND AND SUPPLY

3.1. Demand elasticity and its terms

The variation of market demand in relation to the change in one of the factors (price, income) is expressed by its **elasticity**. This shows the degree, the fraction or the percentage of the change in demand depending on the evolution of one or other of the factors mentioned. The most important factor influencing demand is the price.

The elasticity of demand in relation to the price *expresses the change in demand for a product depending on the change in its price, as the other factors of influence remain constant.* It is calculated using *the price-based **elasticity coefficient** (E_{cpx}) as the ratio between the relative change in the requested quantity*

(dependent variable) and the relative change in price of this product (independent variable) as follows:

$$E_{cpx} = (-) \frac{\Delta C / C_0}{\Delta P / P_0} \quad \text{sau} \quad E_{cpx} = (-) \frac{\% \Delta C}{\% \Delta P},$$

where: E_{cpx} – the elasticity of demand coefficient according to the price of the product "x"; C_0 – total initial demand for that product; ΔC – the change in total demand for that product under the influence of the price ($C_1 - C_0$); P_0 – the initial price of the product; ΔP – the change of the price of that product ($P_1 - P_0$); $\% \Delta C$ – percentage change in total demand; $\% \Delta P$ – the percentage change in the unit price of that product.

In other words, the coefficient of the elasticity of demand in relation to the price may also be defined as the ratio between the percentage change in the quantity requested and the percentage variation in price.

The elasticity or sensitivity of product demand to price variations is very different. When the coefficient of elasticity of an asset is high, it means that the asset has an "elastic" demand, i.e. the volume of demand is very sensitive to the price change. When the coefficient of elasticity is low, we say that demand is "inelastic" and the quantity required is very little sensitive to price variation.

The demand equation is given by the relation $C = a - p \times X$, where "a" represents the independent variable, "p" the price of goods and services and and "X" quantity required by price.

Depending on the size of the coefficient of price elasticity of demand, the demand for different goods may take the following ***forms:***

1) ***elastic demand***, when $E_{cpx} > 1$, i.e. the demand varies in opposite direction to the price, but more intense, in a larger proportion. In other words, with a price change with a certain percentage, the demand also changes, but with a higher percentage.

2) ***inelastic demand***, when $E_{cpx} < 1$, i.e. the demand reacts to the price change, but to a lesser extent, namely to a change with a certain percentage of the price, the demand changes in a contrary way with a smaller percentage.

3) ***unitary elasticity demand*** when $E_{cpx} = 1$, which means that the percentage change in the quantity requested is equal to the percentage change in the price, ie a price increase (decrease) of a product is accompanied by a decrease (increase) of the demand for that product in the same proportion.

4) ***perfectly elastic demand***, when $/E_{cpx}/ \rightarrow \infty$, which assumes that the poor price variation of a product (the price remains relatively constant) is combined with a continuous increase in demand for that product, thus tending to infinity (infinite elastic demand).

5) ***perfectly inelastic demand*** when $/E_{cpx}/ \rightarrow 0$, i.e. when the demanded quantity of a product or service is relatively constant (demand variation is almost null), and the price change in any sense has no decisive influence on the demand for that product (rigid demand).

The last two forms of elasticity have more theoretical value than practical.

Given that price factor is the most important element in determining demand, it is interesting to know what are the ***circumstances (conditions)*** that can influence its elasticity according to the price. Of the most important, we mention:

a. *the degree of substitutability of goods*; the more a good has a more diverse range of substitutes, so it is more substitutable, the more elastic is the demand for the price and vice versa, the unsubstitutable or hardly substitutable goods have an inelastic demand; therefore, the coefficient of elasticity of demand is in a positive relationship with the degree of substitutability of the goods.

b. *the degree of consumption need*; as a rule, luxury goods or those that are consumed periodically (winter sports, trips, etc.) have an elastic demand in relation to the price, and essential goods, vital, of strict necessity (food, fuel, clothing, medicines) which are currently consumed generally have an inelastic demand;

c. *the share of the revenue spent on a particular good in the buyer's total budget*; as a rule, goods with a significant share of the family budget (eg. car, furniture) have an elastic demand, and those with a low share in total household spending have an inelastic demand (eg. stamps, telegrams, newspapers, etc.);

d. *the time elapsed since the price change*; in general, the longer the period of time, the more elastic the demand for goods whose prices have changed, as buyers have the time to adapt to price changes, and other replacement goods may appear on the market; on the contrary, for a short period of time, the demand is inelastic, as consumers have not yet decided regarding the change in the consumption programme. For example, if the price of a good doubles, the demand for the good in the short term will be reduced, say, by 80%, i.e. $E_{cp} = 0.8$ (inelastic demand), and in the long run will be reduced by a much higher percentage, e.g., 120%, i.e. $E_{cp} = 1.2$ (elastic demand).

Knowing the circumstances that determine the elasticity of demand is very important for estimating the total income earned by the producer or seller (Vt = Price × Quantity). Moreover, the estimation of the elasticity coefficient helps us know if a price increase leads to a decrease or increase of the revenues. Such a problem is essential for many fields of business, and firms in these fields need to know to what extent it is appropriate to raise prices if price reductions are needed and how they affect the demand for a particular product.

Thus, depending on the level of the elasticity coefficient, one can estimate the evolution of total revenue in case of a price change, as follows:

- if the demand is *elastic*, lowering the price will lead to an increase in total income, due to a higher proportion of the requested quantity;

- if the demand is *inelastic*, lowering the price will result in a reduction in the total revenue due to the increase in demand in a lower percentage than the decrease in the price;
- if the demand has *unitary elasticity*, the price drop will not influence the size of the total revenue, as demand growth will be proportional to the price decrease.

3.2. The elasticity of supply and terms

*The sensitivity or variation in the supply of a merchandise under the influence of one of the determining factors is expressed by the **supply elasticity**, and its size is given by the size of the elasticity coefficient, which shows the degree or the percentage measure in which the supply changes under the influence of a certain factor (price, cost).* As with demand, the most important factor of influence is the price.

♦ **The elasticity of the supply related to the price** *is weighted by the price elasticity of supply coefficient, which is calculated as a ratio between the relative change in the supplied quantities and the relative change in the sales*, price as follows:

$$E_{opx} = \frac{\Delta O / O_0}{\Delta P / P_0} \quad \text{or} \quad E_{opx} = \frac{\% \Delta O}{\% \Delta P} \quad ,$$

where: Eopx – the price elasticity of supply coefficient, for the merchandise "x"; O_0 – initial volumen of the supply; P_0 - the initial unit price of the merchandise "x"; %ΔP – percentage change in price; %ΔO – percentage change in supply.

The supply equation is given by the relation: $O = a + p \times X$, where "a" represents the independent variable, "p" the price of goods and services and "X" the quantity required by price.

As with the demand, depending on the level of the elasticity coefficient, the supply for a certain commodity can take the following **forms**:

1) **elastic supply**, when $E_{opx} > 1$ i.e. a certain percentage change in the unit price, corresponds to a higher percentage change in supply, or when the growth rate of supply exceeds the rate of price increase, both of which are moderate increases.

2) **inelastic supply** when $E_{opx} < 1$, i.e. the percentage change of the supply is lower than the percentage of the change in the price, or, if the price increases in a given proportion, the supply increases, but at lower rates than the price level.

3) **unitary elasticity supply**, when $E_{opx} = 1$, respectively when the quantity offered varies directly in proportion to the price evolution, i.e. a percentage change in the price determines approximately the same percentage change of the supply in the same sense.

4) ***perfectly elastic supply*** when $/E_{opx}/ \to \infty$, is an extreme case, a theoretical concept that does not exist in reality and which presupposes that at a given price or a very small change in price, the supply will increase to infinity.

5) ***perfectly inelastic supply***, when, $/E_{opx}/ \to 0$ is another extreme case, according to which any price change in any sense and with any percentage, the supply does not change, remaining constant.

The ability of the supply to vary under the influence of the price depends on several circumstances, which are related to the specific conditions of each entrepreneur, the market strategy promoted by the firms, the marketing techniques used, the field of activity and the general conjuncture of the economy. Beyond such situations, specific to each branch and stages of the evolution of the economy, there are also some ***common circumstances*** that influence the elasticity of the supply in terms of price, such as:

a. the possibilities of stocking the goods; if a certain good can be stored and kept for a certain period of time, the supply elasticity according to the price of that good increases and vice versa, when the storage possibilities are reduced, the supply elasticity decreases; there is a positive relationship between the possibilities of stocking the goods and the price elasticity of the supply;

b. the period of time from the price change; if the period is very short, the supply is usually inelastic; if the period is short, the price elasticity of the supply may be unitary and in the long run it becomes elastic. Such a situation is explained by the sources of supply creation and evolution. Thus, in the very short term, the supply changes only on the basis of storage, depositing, and these are inevitably very limited. In the longer term, however, the supply is price-elastic, because the entrepreneurial production and investment programs have been adapted to price changes (they expand when prices rise or restrict when prices fall). In the long run, new entrepreneurs enter the branch (when the price increases) and others reprofilate (when the price decreases), as well as changing the manufacturing processes with a longer cycle, especially in some branches of industry, construction and agriculture.

4. COMPETITION AND PRICE

4.1. Role of competition and price functions

Competition *is a process of competition, an open confrontation of bidders, in which each seeks to attract consumer customers, to stimulate sales, keep products on the market, through more convenient prices, better quality of goods, by advertisments, advertising, etc.*

Competition determines the overall economic behaviour of entrepreneurs (firms), financial policy, investment policy, staff policy. In the process of competition, rivalry, opposition, the ratio of forces between economic agents appear on the consumer goods and services market, as well as the factories' production market. In this context, the competitive ones are advantaged and they win, and the inefficient ones register losses, reaching, in extreme cases, insolvency or bankruptcy.

The **role** of competition is a ***fundamental*** one for the economic market mechanism and, in general, for the economic and social development of a country: This is highlighted by the following aspects:

1. encourages and stimulates creativity, innovation, leading to the introduction of technical and technological progress in the production processes, aa well as the improvement of management and marketing methods and techniques – essential requirements for succeeding in business;

2. contributes to a better satisfaction of the interests of members of a community, because it offers buyers the possibility of choosing goods to maximize their needs, unlike, for example, the monopoly situation in which consumers are at the disposal of a single producer;

3. constitutes an important factor in reducing inflationary trends, because under the pressure of competition, entrepreneurs have to reduce costs, promoting technical and technological progress, which allows them to maintain or even reduce prices to gain new market segments;

4. it directs economic activity by distributing economic resources in the way of producing what is necessary and with maximum efficiency; this process is carried out under the action of the general law of demand and supply, through price mechanism, competition being highlighted as an important *regulator of the market.*

Summarizing from the multitude of ***pricing*** concepts, we can say that it *expresses the amount of money that the buyer pays in exchange for an economic good, being the monetary expression of the exchange value the vendor receives for a unit of the traded good. It is therefore the measure of the value of the merchandised good.*

Also, in the economic market mechanism, we consider that the sale price of each good or service results from a *compromise between two contradictory risks*: on the one hand, the risk that the producer (the seller) will lose its consuming customers if the price increases too much, and on the other hand, the risk of compromising its profit if the price falls below certain limits.

Ultimately, the price is determined by both *the consumption of production factors* and the *marginal utility and rarity of the good*. Viewed through the consumption of factors, the price expresses *the interests of the producer* and, in terms of utility and rarity, it expresses *the interests and objectives of the buyer*. The relationship between the two categories of interests determines the market between

demand and supply on the market, which in turn generates the level and the evolution of the price.

The price has important *economic functions*, which highlight the fact that it is an economic barometer of great importance for the understanding of the state of the economy at a certain point. This marks its fundamental role in the functioning of the complex and dynamic market mechanism.

1) The market information function consists in the fact that prices send information to economic agents about mutations that occur both in production conditions and consumer behavior. By mirroring the complex market situation, the price serves to guide the decisions of producers and buyers in choosing the options that are most economically advantageous.

2) The function of rewarding the factors of production used shows that, through the price, all expenses incurred with the production of economic goods (material expenses, amortisations, labor costs, rents granted) are recovered and, in addition, the profit necessary for the continuation and development of the activity, is obtained. At the same time, the measurement of the expenses and the obtained results, in monetary expression, makes the price become an important tool for analyzing and substantiating the decisions of the economic agents.

3) The revenue redistribution function occurs when, through price changes, sometimes administered revenues are redistributed between economic agents or between different social categories. Thus, a relative decrease in the prices of products of certain economic agents in a certain branch or sector leads to a decrease in their incomes, which is equivalent to an increase in the actual income of other agents (firms or individuals) who are in the position of buyers (consumers) of those goods (services). The phenomenon is called "price scissors."

4) The function of assessing the purchasing power of the coin consists in the fact that, if prices rise and nominal incomes are constant, then the purchasing power of the currency decreases (meaning that real incomes have fallen) and if prices are relatively constant and nominal incomes are rising, the purchasing power of the currency increases accordingly (real revenue has increased).

4.2. Influence Factors and Price Classification

The functions and price typology, reflecting their particular role in the market economy mechanism, must be seen in their interaction and in close correlation with demand, supply and competition, with which they act to regulate production and exchange.

The level and dynamics of prices are generally influenced by the following **factors**, with direct or indirect action on them:

> *a) the cost of production*, which is the most important component of the price structure, so that its level must be at least equal to the level of the cost of production, including normal profit;

b) *the economic profit*, which may range from zero, in the case of perfect competition, to the maximum given by the monopoly or monopson situation;

c) *the ratio between supply and demand* for the good or service in question, which, in the face of any form of competition, is a strong price action factor as a result of conflicts of economic interests between demand and supply carriers;

d) *the dynamics of the economic value of the goods and of the value of the money* (their purchasing power). The value of money is inversely proportional to price, with the same amount of money being obtained by a smaller quantity of goods, in the event of price increases (decrease in the value of money) and vice versa, in case of lower prices. Under the current conditions, inflation, exerting its influence on the purchasing power of money, imparts a growth trend to prices;

e) *the state intervention in the economy*, which may lead to the fixing of a certain (maximum) mandatory level of prices for different goods and services for social purposes;

f) *the evolution of world prices* is impacted on the evolution of domestic prices, especially due to the export-import activities carried out by the national economic agents.

In economic theory, prices are subject to a ***criterial classification***, which is presented in the following way:

- ***by object***, prices are divided into three main categories, as follows: a) *prices of material goods* (commodity prices); b) *prices of non-material goods* (services) called tariffs; c) *prices of the factors of production*, which are as follows: labor price - *the salary*; the price of land use - *the rent*; the cost of capital use - *the interest*; of the entrepreneur's activity - *the profit*.

- ***by the scope of action***, there are: a) *domestic prices*, exercised on the domestic market, having an impact on domestic affairs and which are denominated in national currency; b) *foreign prices*, used in international affairs (exports, imports), having an impact on the world market and which are expressed in freely convertible foreign currencies and of large international circulation (dollar, euro, etc.).

- **by the formation mode**, we find: a) *free prices*, formed on the market through the free play of supply and demand, such prices having a more theoretical existence, being specific to the market with perfect competition; in the real economy, such prices tend to be on stock markets (of commodities, values and currencies); b) *administered prices*, fixed by the state for extra-economic reasons (social protection, protection of the environment, protection of the consumption of certain resources, etc.) or by major monopolistic or oligopolistic firms; c) *mixed prices*, that is, those prices that can actually be met in real economies and which result from the intersection of market forces (with elements of "the invisible hand")

with interventionist or dirigist mechanisms stemming from legislative regulations and monopolistic or monopsonic decisions of different economic agents.

5. FUNDAMENTAL INCOME

5.1. SALARY

The notion of **salary** is a market-specific category, being considered as *an income for the labor factor*, due to the direct participation, together with the production-capital factor, in the economic activity.

The salary does not express the income of all labor - production factor, but only of *the wage labor*, that of a special labor that delimits it from the total labor - production factor. From a macroeconomic point of view, the salary is the income of the employed worker as a reward for the contribution to the creation of the national income as a result of the hire and use of the labor force by those with the other productive, classical and neoclassical factors (capital, land, entrepreneurial abilities).

The salary, along with the profit, is the most common form of basic income, its level conditioning on the standard of living of a society. It represents on average almost 50% of the GDP of the EU countries. The salary appears as *a price of hiring labor force*, from free legal and economic people, respectively as the price of services provided by the work done by them.

Also, the salary should not be identified neither with labor income nor personal income.

• *Income from work* is a more comprehensive category, as it includes, besides the salary, other specific income, such as: farmers' incomes, individual entrepreneurs, freelancers, etc.

• *Personal income*, at national level, includes the current income for all persons from all sources, namely: salaries received from the employer; other income from work; income from rents and leases; dividend income; interest income; budget revenues (pensions, unemployment benefits, scholarships, allowances).

In economic theory and practice the following two main types of salary concept are used: *nominal salary* and *real salary*.

1. The nominal salary (Ns) consists of the actual amount of money that is due to the employee for the work done. The nominal salary is the one negotiated and recorded in the documents (employment contracts) between the employer and the employee. The nominal salary can be represented, either in the form of *gross* nominal salary or in the form of *net* nominal salary.

Gross nominal salary is reflected in the amount of money that an employee should receive if the statutory payment obligations of the employee are disregarded to the public authority.

The net nominal salary is the amount of money actually earned by the worker, after the gross wages are deducted from the statutory payment obligations (social deductions, taxes).

2. The real salary (Rs) is defined by the amount of goods and services that an employee can obtain in exchange for the nominal salary in a given period at a given price level. It expresses the purchasing power of employees, being directly proportional to the size of the nominal wage and inversely proportional to the dynamics of prices.

It is determined by the ratio between the nominal salary level (Ns) and the consumer price level expressed as price index (Pi):

$$Rs = \frac{Ns}{Pi}$$

Objectively, salary setting is made between two limits:

1) the minimum limit, which from the employee's point of view must be at least the cost of labor (the decent living cost); it is imposed by the legislator by granting the minimum wage on the economy;

2) the maximum limit, which, from the employer's point of view, must be established according to the evolution of average labor productivity, on the whole company, or, as the case may be, by the marginal productivity of labor (which is additionally incurred by employing a extra worker).

5.2. PROFIT

As a form of income, **profit** *is the amount of money in absolute terms, representing a surplus over the expenses incurred by an economic agent over a certain period of time.*

From an economic point of view, economic and social rationality is determined by the size and dynamics of profit, maximizing it as the criterion of the efficiency and profitability of an economic agent.

In specialized literature, the economic profit category is presented as *"the gain, the cash advantage of an action, operation, or exercise of an activity, and is determined as the difference between what is received and what is paid in economic activity, or as a difference between the sale price and the cost of the product, the service, derived from that activity."*[3]

Profit is a variable measure in time and space, and its magnitude and dynamics can be analyzed as *absolute* (as a mass, volume), and *relative* (as a rate) terms.

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[3] *The complete market economy dictionary*, Informaţia Business Books Publishing House, Bucharest, 1994, pg. 273.

The profit mass (P) is the monetary expression of the positive difference between the total income (TI) obtained from the entire economic activity of the firm and the total cost (TC) of this activity:

$$P = TI - TC$$

The profit rate (p') expresses the profitability of a firm (economic agent), that is, its potential to generate profit, the way the factors of production have been capitalized over a period of time for a product, product groups, enterprise or economic branch. The profit rate (gross or net) can be calculated by reporting the profit (gross or net) of either the revenue received (turnover) or the capital used (K) or the total cost of production (Cp). The calculation relationships are as follows:

$$p' = \frac{P}{CA} \times 100; \quad p' = \frac{P}{K} \times 100; \quad p' = \frac{P}{Cp} \times 100$$

The profit rate depends decisively on the convergent action of **three groups of factors**, such as:

a) Factors that are mainly related to production, such as: the quantity and quality of the goods and services created; the structure of production by assortment; the level of labor productivity; the degree of technology; managerial system, etc.

b) Price and cost factors: A high sale price may lead, under certain elasticity of demand, to an increase in the profits; a reduction in the average cost may also lead to an absolute increase in profit, subject to the same selling price being maintained;

c) *Factors related to the speed of rotation of the capital*, so that the time required to finish a complete movement of the (circulating) capital must be as short as possible. The longer the supply, the production, the storage and the disposal are, the higher the number of rotations during one year, which means that in an equally advanced capital, the companies that in a period of time accomplish with a higher rotation speed, get a higher profit.

Regardless of its form, profit performs important functions for economic agents, population and society in general, as follows:

a. *the business motivation function*; Profit stimulates their economic initiative, triggering companies to accept risk, contributing to stimulating the production of goods;

b. *the development function*; this reveals that profit is the basis for growth in production, business development, the emergence of new businesses, etc.; it is the main source of accumulations on which investment is constituted, the main source of economic growth;

c. *the control function* over the business activity; the level and dynamics of profit constitute a true barometer of the quality of the business activity; the higher the profit and the longer it takes to obtain it, the more the qualities and the ability of the economic agent - entrepreneur - among businessmen are verified in practice;

d. *the social function* of the profit is a very important one, because the public resources necessary for the financing of the social-cultural actions of general character are created on this basis.

MACROECONOMY

6. MACROECONOMIC RESULTS

6.1. Macroeconomic Performance Indicators

The results of the economic activity of a national economy as a whole, over a determined period, usually one year, are reflected by ***synthetic indicators of results (macroeconomic).***

Depending on the purpose, they can be valued at *market prices* (buyer prices) or at *production factors prices* (producer prices). Synthetic indicators of macroeconomic outcomes are usually determined at market prices.[4]

For macroeconomic calculations and the determination of performance indicators in the National Accounts System, the boundaries between the concepts of final consumption and intermediate consumption are essential.

▸ ***Final consumption*** is the total of expenses that allow the direct meeting of human, individual and collective needs. These are costs that do not directly contribute to increased production. The final consumption (final output) is determined as the difference between the value of all goods and services from domestic production and imports, on the one hand, and the value of goods entering into intermediate consumption, investment and export, on the other. Final consumption is divided into two categories: *private consumption* and *public consumption*.

- *Private consumption* includes expenditure on all material goods and services purchased by the population (households), including those from indigenous production, to meet individual needs (consumer goods, sustainable goods, agri-food goods, various services).

- *Public consumption* expresses the expenses of the state administration institutions (central and local), occasioned by the purchase of economic goods, for the provision of public services. Public consumption (state) includes those

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[4] *Production factors prices*, compared to *market prices*, do not include net indirect taxes (indirect taxes - operating subsidies).

expenditures by public institutions for the acquisition of goods in the areas of social, cultural, administrative, economic, public order, national defense, etc.

⯈ *Intermediate consumption* (intermediate production) is the value of economic goods from previous production processes and is used and consumed in other production processes for the purpose of creating final goods and services. This consumption includes intermediate goods expenses such as parts and components, subassemblies, fuels, semi-finished goods and complementary goods in general.

The indicators of the macroeconomic results calculated in the National Accounts System are the following:

1. Gross Global Product (GGP);
2. Gross Domestic Product (GDP);
3. Net Domestic Product (NDP);
4. Gross National Product (GNP);
5. Net National Product (NNP);

⇨ *The Gross Global Product (GGP)* reflects the total value of goods and services, both marginal and non-marginal, obtained over a period of time, usually one year, within national economy subsystems. This indicator includes repeated records, which is why it has little use. However, GGP responds to real requirements of macroeconomic knowledge on the correlations that are formed between different branches, sub-branches and activities. GGP is calculated as the gross output (GO) of goods and services in all sectors, i.e. by summing the final consumption and the intermediate consumption:

$$GGP = \Sigma\, GPi = Cf + Ci$$

⇨ *Gross Domestic Product (GDP)* reflects, in value terms, the production of goods and services obtained by all economic agents (domestic and foreign) destined for final consumption. This indicator expresses the magnitude of the gross added value of the goods and services produced inside the country and reached the final stage of the economic circuit. GDP is determined either by summing up the gross added value of all goods generated by domestic economic agents (aggregated at sector level) over a specified period (one year) or by subtracting from the gross global output of intermediate consumption as follows:

$$GDP = \Sigma\, GAVi\,;\ \ GDP = PGB - Ci\,,$$

where "i" represents the sectors of economy, and Ci - intermediate consumption.

⇨ *The Net Domestic Product (NDP)* summarizes the sum of the net added value of the material goods and the final services produced by all economic agents

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(domestic and foreign) acting within a period of time (typically one year). It is also calculated by subtracting from the gross domestic product the consumption of fixed capital, i.e. the amortization (A):

$$NDP = \Sigma NAVi \; ; \; NDP = GDP - A$$

⇨ **Gross National Product (GNP)** is the gross added value of all material goods and final services from national economic activities, both domestically and externally, over a period of time (one year). GNP is determined by subtracting from GDP the gross added value achieved on the national territory by foreign economic agents (GVA_F), to which the gross added value of the national economic agents on the territory of other states is added (GVA_{NF}), as follows:

$$GNP = GDP - GAV_F + (GAV_{NF}) \; or$$
$$GNP = GDP + B_{GAV}$$

This indicator may therefore be higher or lower than GDP, depending on the balance, positive or negative, of gross added value (B_{Gav}):

$$B_{GAV} = GAV_{NF} - GAV_F$$

⇨ **The Net National Product (NNP)** is the monetary expression of the net added value obtained by the national economic agents, both within and outside the country, and is determined by deducting from the GNP the depreciation of fixed capital (A) as follows:

$$NNP = GNP - A$$

The net national product (NNP) may also be calculated by adding to the NDP, the positive or negative balance (B_{NAV}) between the NAV obtained by the national economic agents abroad and the NAV obtained by the foreign economic agents in the country ($NNP = NDP + B_{NAV}$). If NNP is valued at factor prices, then it reflects national income.

Macroeconomic indicators are generally used to determine economic dynamics. Economic growth is evidenced by the rise in macroeconomic indicators. As these indicators are expressed in terms of monetary value and their growth may be due both to the rise in prices from one period to the next (inflation) and to the increase in the physical volume of economic activity, the macroeconomic indicators are expressed in constant (or comparable) prices, bearing the name of real indicators (real GDP, real GNP, etc.). If they are expressed in the current prices of the year, they are called nominal or monetary indicators.

The ratio of nominal GDP to actual GDP is called the GDP deflator (D) and expresses the average price index for the whole economy over the analyzed period as follows:

$$D = \frac{GDP}{GDPr} \ , \ \text{and} \ GDPr = \frac{GDPn}{D}$$

After calculating the real GDP, the dynamics (evolution) of that indicator can be determined by calculating the *Gross Domestic Product Index*:

$$I_{GDP} = \frac{GD\,Pr_1}{GD\,Pr_0} \times 100$$

The product of economic activity may be potential or current. The potential product refers to the maximum size of the product that can be achieved in a period of full employment. The current product may be higher or lower than the potential product, relative to the average labor productivity level, the population activity rate, and other contextual conditions. The difference between the potential GNP and the current GNP is called the GNP gap and is of great importance in the macroeconomic balance studies.

6.2. The Aggregate Demand and Supply

Macroeconomics is concerned with the determinants of the total output and growth rate, the inflation and the unemployment rates. In a modern, open-market economy, the behavior of economic agents ultimately results in the aggregate demand (global, total) and the aggregate supply.

➢ **The aggregate demand (global)** is the set of solvency requirements of goods and services produced in an economy over a period of time and at a general average of their prices.
The structure of aggregate demand includes the following elements:

a) expenses for the purchase of goods and services performed by the population (households);
b) income allocated and spent by enterprises (firms) for gross investments (gross capital formation);
c) government purchases of consumer goods/services and investment goods, on account of budget revenues;
d) the expenses of foreign economic agents (in foreign currency) to import from a certain country, i.e. to pay the exports of that country.

The aggregate demand is influenced by *the general price level*, which is a weighted average of the prices of all goods and services produced in an economy.

▪ If the general price level increases (considering the other factors do not change), the purchasing power of money is decreasing, so that it will be possible to buy a smaller quantity of goods and services with a given nominal income, meaning there will be a reduction of aggregate demand.

▪ Also, the rise in overall price levels in an economy will lead to an increase in goods and services produced internally compared to foreign ones. As a result, domestic consumers will tend to buy fewer domestic economic goods, which are relatively more expensive than foreign ones, with effects on increasing imports and declining exports of such goods.

▪ The increase in the general price level also affects the volume of investments, because if we assume that the investments are made from loans, the increase in this level will also lead to an increase in the average interest rate, thus increasing the credit, with effects on the discouragement of investments for capital goods.

▪ At the same time, the increase in the general price level will also result in the reduction of government spending on the purchase of consumer goods and investment goods.

In conclusion, a widespread increase in prices in the economy will result in a contraction of aggregate demand (global) by reducing all its components. Conversely, lower general price levels will generate an expansion of aggregate demand.

Considering, however, that the general price level remains relatively constant for a certain period of time, the aggregate demand varies with the action of some factors called the aggregate demand conditions, such as:

a)   *the expectations of consumers and investors* about the evolution of the economic situation as a whole. *Optimistic* expectations will cause the population to buy a larger quantity of goods, especially for long-term use, and entrepreneurs will increase their investments, as they increase the certainty of their efficiency, which will mean an increase in aggregate demand. Pessimistic expectations will lead to increased uncertainties for final users, which will be reflected in a reduction in aggregate demand, i.e. consumption and capital expenditures.

b)   *the type of governmental policies* which, if focused on the increase of expenses for investments, tax reduction or increase of money supply, result in the increase of aggregate demand, while the stimulation of the increase of interest rate or taxation result in the reduction of the aggregate demand.

c) *the general state of the world economy* which, if in a period of economic boom, will determine the increase in imports, i.e. the increase of exports from the national economy, increasing the aggregate demand, while if in a period of crisis, the foreign business partners will import less, i.e. the

exports from the national economy will be reduced, thus decreasing the aggregate demand.

> **The aggregate supply (global)** is the sum of goods and services offered on the national market by all indigenous and foreign economic agents. In other words, the aggregate supply consists of the total internal production of goods to which the foreign supply is added (imports).

The most important influencing factor for the aggregate supply is ***the general level of prices***, which, as we know, is directy proportional to its size. This fact is valid if the level of prices refers to the merchandise goods that form the aggregate supply, without any connection with their costs.

However, the overall price level change is reflected in the aggregate supply, and the ***cost of the purchased production factors***. Thus, an increase in these costs (factor prices) can lead to a reduction in supply, whereas their decrease would lead to an increase of the aggregate supply.

While the overall price level remains relatively constant, the aggregate supply may be influenced by other factors called supply ***conditions***, such as:

a) *the productivity of the factors of production* which, if increased, will lead to a reduction of the average cost, the increase of the production volume, and, thus, of the aggregate supply. A fall in the productivity will lead to an increase in the average cost and a reduction in the output per-unit of the consumed factor, i.e. a decrease in the aggregate supply.

b) *the volume of the production factors* used may lead to an increase of the aggregate supply, if their supply increases, or, it may cause the decrease of the aggregate supply, if their supply on the market diminishes.

7. MONETARY MARKET

7.1. Concept and structure of the money market

The monetary market *is defined as a short-, medium- and long-term capital market where the demand and the supply of funds meet, from economic agents (public and private law) and financial-banking institutions.* It is a specific market that *compensates for the cash deficit (liquidity) surplus*, which exists in the entire economic circuit, and *regulates the amount of money in the economy under a specific price and interest rate.*

The monetary market encompases all the relationships, institutions and instruments, via which cash availability is transferred to the areas in need of such resources. *It represents the capital market at different times, where the demand for loans meets the available financial funds supply. Here, the main actors are the banking institutions, whose role is to* ***financially intermediate*** *between fund providers and fund applicants.*

The functioning of the monetary market depends on the organization and the functioning of ***the banking system*** as a whole, the relationships and money operations that take place between its components, where the main role is played by the Central Bank (the National Bank).

An outline of the monetary market ***structre*** would lead to a better understanding of this concept, in terms of the various relationships that arise within this market and its participants.

In most developed market economies, the monetary market is made up of two segments: *the debt securities market* and *the interbank market*. Each of these segments may be a monetary market hypostasis, which is in fact a credit market on different terms.

We note that, in the broad sense, the monetary market also includes the (classic) *credit instruments market*, which reflects the entire loan relationship network between commercial banking institutions and economic agents (private and/or public).

♦ ***The debt securities market*** is the monetary market segment that facilitates operations with both *short-term debt securities* (bills of exchange, promissory notes, deposit certificates, etc.) and *medium to long-term debt securities* (securities state bonds, treasury certificates, eurobonds, etc.). The latter category falls into *open-market* operations as the central monetary policy instrument of the Central Bank.

Debt securities are solemn documents of standardized forms and content, as an obligation on a natural or legal person (debtor) to pay a fixed amount of money together with interest to a particular beneficiary. Securities are transferable on the monetary market (and negotiable on the capital market), i.e. they can be sold/purchased before maturity. They are also known as *financial-monetary assets*.

Sale of securities to a credit institution (commercial bank), before the maturity date and receipt of the amount on these securities, diminished via the interest (discount fee) to the bank, represents *the securities settlement operation*. Thus, pre-term liquid funds are provided for the firms involved in economic transactions. Upon maturity, the bank receives the amount on the document from the debtor.

Also, the commercial bank may in turn redeem those securities with the central bank, prior to maturity, an operation called *re-settlement*. Similarly, the central bank takes over these securities by charging a certain interest, which at present is the *monetary policy interest rate* (referred to in the past as indicator interest rate, resale fee or official discount rate) and which is lower than the discount rate (the interest of commercial banks). Via this operation commercial banks are provided a refinancing.

The main **categories of monetary market operations** (open-market operations) available to the Central Bank are:

- ▪ *"Repo-type" transactions* - liquidity injection transactions where the central bank buys securities (eligible assets) from from banking

institutions with their commitment to redeem those assets at a later date and at a price set on the date of transaction;

- *"Reverse repo-type" transactions* - liquidity-absorbing transactions where the central bank sells securities (eligible assets) to banking institutions, committing to redeem those assets at a later date and at a price set at the date of the transaction;
- *Deposit attraction* - predetermined maturity transactions, designed to absorb liquidity, where the central bank attracts deposits from banking institutions;
- *Issuance of deposit certificates* - transactions for liquidity absorption, in which the central bank sells to certified bank banking institutions deposit certificates..

♦ **The interbank market** is a specific market segment of the market that facilitates the daily basis relationships between inter-banking institutions with regard to the liquidation of balances from mutual money operations.

Banks lend or repay their previously contracted loans. At the same time, banks make payments on behalf of their clients, depositories, to some other banks, and are receiving cash from the same or other banks. Thus, via each operation carried out, a bank becomes creditor or debtor to another bank.

At the end of a working day, each bank has, in relation to the other banks, a series of positions and debtor amounts, as well as and a number of positions and crediting amounts, being the beneficiary of a creditor balance or the holder of a debtor balance. The interconnection of operations between banks causes the emergence of mutual obligations among these institutions, hence a bank becomes, in relation to the other banks, either debtor or creditor.

Over the years, the practice of daily settlement of reciprocal obligations between banks has been established in a framework organized under the coordination of the issuing bank.

The negotiation of the necessary funds to settle the mutual obligations is the subject of interbank monetary market transactions. Two categories of participants play daily on this market, i.e. the currency bidders and the currency requesters, who perform interbank or intra-bank settlement operations when they occur between units of the same banking company (branches, subsidiaries, agencies).

- The *currency bidders* are holding banks of the the cash accounts at the issuing bank, who have credit balances. Since the deposits from the issuing bank are not interest-bearing, their holders (the banks) are highly interested in capitalizing on these availabilities by granting negotiated loans on the interbank market.
- The *currency applicants* are those banks that, while remaining debtor in their relationships with other banks, are looking for hedging funds by contracting very short-term loans.

The Central Bank acts as a regulator of the operations carried out on the money market. The Central Bank regularly intervenes through open-market operations that help meet liquidity demands when the market, globally considered, appears to be a central currency demander. The Central Bank also plays the role of the creditor, being a currency bidder for debtor banks via credit facilities, resale and/or lombard operations.

The content and the specificity of the interbank monetary market are highlighted by several *specific features*: • the participants in this market are only banking institutions; • the transactions regard the banks monetary denominations in central currency; • negotiation operations are usually carried out on a daily basis; • the interbank credit terms may be very short (a few days) and medium (several months, up to one year); • the loans granted are personal loans, from bank to bank, based on maximum mutual trust and low risk; • the interest rate is established daily through the current game of currency demand and supply.

7.2. Currency demand and supply

The formation and movement of the money supply are closely related to the *currency demand and supply* as components of the monetary market content.

➢ **the currency demand** is the amount of money that all categories of natural and legal persons require within a given period of time, motivated by its utility, given by the functions it performs in an economy.

Given that the structure of the money supply is represented by several categories of monetary assets, grouped according to their liquidity, we can consider that *currency demand is synonymous with "the preference for liquidity"*.

The currency demands depends primarily on *the volume of transactions for the purchase of goods and the payment of services, as well as on the currency rate rotation speed.* Hence, we need to consider the demand in a directly proportional ratio to the volume of exchanges (expressed in terms of prices) and in a inversely proportional ratio to the currency's rotation speed, estblished by the relationship:

$$M = \frac{P \times T}{V},$$

where: M - the currency amount required for transactions; T - the physical volume of transactions; P - the average price of a transaction; V - the currency rotation speed (the average number of sale-purchase transactions and payments inter-mediated by a monetary unit over a given period).

According to this relationship, we find that in an economy, the currency amount demanded by the market depends on the price variation, the volume of transactions and the currency circulation rate. Thus: 1) the currency demand increases or decreases in proportion to the volume of transactions, if the price level and the circulation speed remain constant; 2) the currency demand increases, and, implicitly the currency supply increases, if the circulation speed decreases, and

decreases when the circulation speed increases; 3) the currency supply is in a directly proportional ratio to the general price level, while the other factors remain constant.

Also, the currency demand is influenced by *the behavior of the economic agents* (both natural and legal persons) against the currency, manifested by the *intensity of the inclination towards liquidity*. The propensity for liquidity occurs due to several reasons, such as: the current transactions reason; the prevention reason (curency demand for unforeseen needs); the speculation reason (speculative currency demand).

At the same time, the currency demand is influenced by *the interest rate*, i.e. the price of giving up the liquidity. If the interest rate drops below a certain limit (considered minimal), the demand for liquid money increases, as it becomes safer, if transformed into non-monetary components of capital. If the interest rates raises above a certain level, it reduces the liquidity preference, since the currency is used to create bank deposits or buy financial assets.

> ➢ ***The currency supply*** is the amount of money available in an economy, available to users (population and businesses) in cash and scriptural currency.

The currency supply can be highlighted both as a *flow* and as a *stock*. As a flow, over a certain period of time, it is equal to the product of the curreny mass (M) and the currency circulation rate (V). Taking into account the quantitative currency equation *(M × V = T × P))*, the cash flow is equal to the real flow (T×P) and the product of the quantity of goods obtained and marketed (T), in a given period of time and the average price of these goods (P).

Considered as a stock, the currency supply is in fact the currency mass, i.e. all monetary assets or money instruments existing in a particular economy at a given time, for the purchase of goods and services, the payment of debts, the creation of savings for investments and other placements.

The major components of the currency supply (cash and scriptural currency) are put into circulation via different mechanisms.

Cash, consisting of banknotes and coins is issued by a single bank, representing the nation's monetary authority, i.e. the central bank (*issuing*). This bank generates curreny in the form of cash through the following types of *operations*:
- the purchase of foreign currency (currencies) obtained by economic agents as a result of goods exports; in exchange for the purchased foreign currency, the central bank issues the currency and places it into circulation; the amount of currency in the economy may diminish when the central bank sells foreign currency to economic agents carrying out import operations;
- refinancing loans to commercial banks that need additional amounts to deal with higher payments than deposits made over the same period;

- the purchase of government securities (government bonds, treasury certificates) issued for the total or partial coverage of the budget deficit or balancing the budget execution.

The creation of *the scriptural currency* (account-based) is carried out by *commercial banks and credit institutions*, which, through the credits granted to non-bank economic agents, support the currency supply in an economy by means of the *credit multiplier* mechanism (the credits granted become new bank deposits, which in turn constitute a source for new loans, and so on).

Accordingly, the curency supply means placing into circulation the monetary instruments. The scriptural currency supply is usually linked to the lending operation, hence a debt repaying in favor of a bank is equivalent to a reduction in currency supply, a supply drop.

8. CAPITAL MARKET

8.1. Securities - products of the capital market

Securities *are trading books (value-based) denominated in certain documents, of a negotiable nature and attesting the existence of contractual relations between the issuers and their holders. Based on these relationships, they confer the holders certain property and monetary rights in relation to their issuers.*

The issuance and negotiation of these securities (stocks) takes place, on the one hand, by mobilizing and attracting money from various economic agents or the population to the economic activity of other economic agents (either in the form of subscription to the share capital or in the form lending resources), and, on the other hand, via the circulation of these values from one holder to another, close connected to the free play of supply and demand. This circulation of securities is done through stock-purchase transactions on the capital market. The purchase of these securities is equivalent to an investment and, like any type of investment, is subject to economic and financial risks.

The most representative types of securities circulating on the capital market are: *shares* and *bonds*. Accordig to these primary types of securities, we can distinguish between: *the stock market* and *the bond market*.

♦ *Shares* *are securities (value-based), tradable, issued by an economic agent (commercial company) for the establishment, increase or restructuring of the share capital.*

The shares attest to the share ownership of a company's capital that grants the holder the capacity of *associate* or *shareholder*, with the following rights: the right to participate by deliberative vote in the General Assembly of the Shareholders; the right to participate in dividing the company's net profit in the form of dividends; the right to a part of the company assets, according to the number of shares held, in case of liquidation.

In addition to those rights, shareholders are also *required* to contribute a

certain percentage of the company's losses, if neccessary (they are liable to the social liability within the limit of the capital contribution).

The circulation of shares is free, and may be sold, inherited or donated, at the will of their possessor.

Each share has a **nominal value** (initial, original), which is determined by the ratio of the share capital to the number of shares issued by the company, as follows:

$$V_n = \frac{CS}{N},$$

where: *CS* is the social capital and N is the number of shares.

Therefore, shares are equal and indivisible fractions of the social capital that have a certain nominal value.

When shares are issued in the primary capital market, they may have a different value from the nominal value, depending on the issuer's interests, called *issuing value* (issuing price). This is determined by adding the share premium *(Pe)* to the nominal value, as follows: *Ve = VN + Pe*. Selling the shares at the issuing price brings the issuer an additional capital contribution.

Entering the stock market - their secondary market - these shares will be quoted at a ***market value*** (exchange rate), different from the nominal one and determined daily by the ratio between the demand and the supply related to the respective securities.

Accordingly, the market value of a company, or its stock market capitalization, is given by the product of the number of shares and their exchange rate. Therefore, this market value (market capitalization) does not correspond to the value of the share capital and changes daily in relation to the stock quote.

Besides the three stock categories of shares - nominal value, issue value and stock exchange, we mention the frequently debated issue of *shares evaluation*, namely the estimation of their ***intrinsic value***, which is, in fact, a theoretical exchange rate in relation to which the current market exchange rate of the securities is established.

One way of estimating the intrinsic value is by determining the *accounting value,* applying the following formula:

$$V_C = \frac{A_n}{N},$$

where: A_n is the net asset of the company and N the shares number. The net asset is represented by the part of the company's assets, unaffected by the company's contracted debts, as follows: $A_n = Total\ Assets - Total\ debts$.

Under the circumstances, if V_C < C, where C is the exchange rate, the securities are considered to be *overvalued*, which may be a sales signal (a downward adjustment of the exchage rate may occur).

On the contrary, if V_C > C, it can be a buy signal, because the market does not yet reflect the reality of the value of the shares and it will - under its own laws -

return to a steady state where the exchange rate reflects the intrinsic value; that is, the securities are *undervalued* and they can still be bought.

The dividend *represents the share of the net profit of a joint stock company, which is distributed annually to the shareholders, according to the decisions of the General Assembly of Shareholders, who analyse the size of the profit achieved.*

Each shareholder will receive the dividends as a certain amount, according to the number of the shares held and the size of the profits registered by the company, the latter, in net amount, representing the source of the dividends.

The value of the dividend is determined by the nominal value of the share and the dividend rate, the latter being determined by the evolution of the profit (a small profit will result in a decrease in the dividend rate and vice versa):

$$D = V_n \times R_D ,$$

where: V_n - the nominal value of the share and R_D – the dividend rate.

Another way to determine the value of the dividend is by reporting the net profit obtained on the number of the shares issued:

$$D = \frac{P_n}{N} ,$$

where: P_n – the net profit distributed and N - the number of shares issued.

As far as the conferred rights are concerned, the shares are divided into *ordinary shares* and *preference shares*.

Ordinary shares are the most common and grant their holder the legal right to vote in the General Assembly of the Shareholders, which means participation in the management of the issuing company (the principle established in this case is: one share = a vote) and *the right to the dividend*, i.e. a part of the profits distributed to that company. As the existence and size of profits depend on the company's financial results, shares are also called *variable income securities*.

In addition to ordinary actions, firms may also issue *preference shares* that entitle to a fixed dividend that is paid before the dividend for common actions; however they do not grant the right to vote in the General Assembly.

♦ **Bonds** *are debt securities that attest to the existence of an account receivable by their holder (a natural or legal person) on the issuer (a legal enity governed by public or private law) for a certain period of time..*

They entitle the holder to collect interest and create an obligation for the issuer to repurchase them at the maturity date, with the investor thus recovering the advanced capital in the exchange for these securities. They are also called *fixed income securities*. In other words, they attest to the status of the debtor of the issuer and the creditor of the holder.

For the issuer, bonds are an instrument to mobilize the loan capital.

Bonds, as debt securities, are characterized by the following specific **technical features**:

➡ *The nominal value (Vn), which is determined by the ratio between the borrowed amount and the number of bonds issued, thus:*

$$Vn = \frac{I}{N} \ ,$$

where I - the amount of the contracted loan, and N - the number of bonds issued.

➡ *The issue value (Ve),* respectively the price at which the title is offered on the issue. For this purpose, an *ad pari (parity or 100%)* can be applied when the issue price corresponds to the nominal value *(Ve = Vn)*, or a *sub pari* issue, when a lower subscription price gives investors an advantage *(Ve < Vn)*. This advantage, which is a cost to the issuer, takes the form of the issue premium *(Pe),* which represents the positive difference between the nominal value and the issue value, namely:

$$Pe = Vn - Ve \ \text{sau} \ Ve = Vn - Pe \ .$$

➡ *Refund value (Vr)*, which is usually equal to nominal value, is therefore an return fee *ad pari (Vr = Vn)*. A *supra pari* repayment above the nominal value may also be applied, thus constituting a *reimbursement premium (Pr)* to the beneficial owner *(Vr > Vn)*, thereby:

$$Pr = Vr - Vn \ \text{sau} \ Vr = Vn + Pr \ .$$

➡ *The interest rate (Rd),* calculated on the basis of the interest coupon, which represents the profitability of the investment relative to the face value of the bond, and which is calculated as a percentage ratio between the interest rate (interest coupon) and the loan amount (nominal value):

$$Rd = \frac{D}{Vn} \times 100 \ \text{şi} \ D = Vn \times Rd \ .$$

➡ *Amortization (repayment) of the loan*, respectively repurchase by the issuer of the issued bonds and repayment of the credit in this way. Basically, reimbursement can be made either at a maturity date, when the entire loan is repaid on the last day of the term, or by constant annuities, as return of a constant amount each year as part of the loan. Bonds, as well as shares, can be negotiated and traded on the secondary capital market, with a *market value* that depends on the demand-supply ratio for such securities. If in the case of shares, this ratio is largely influenced by the level of dividends obtained, in the case of bonds, the interest given by the issuer is decisive.

In conclusion, a bond issue can provide extra resources to the trading company without increasing the number of shareholders and the degree of dispersion of the shares. Also, it is borrowed directly from the investor (direct funding), the credit being more efficient and sometimes cheaper. The bond market is an effective alternative to borrowing funds without the need for negotiating the loan agreement, as in the case of bank loans.

The main differences between shares and bonds can be synthesized in the following way:

a) The role of the holder in the management of the issuer's activity in the case of shares is the right to vote in the general assembly and in the case of the bonds is non-existent;

b) Revenues for the titleholder, in the case of shares, are dividends (linked to the results of the firm) and, in the case of bonds, the interest the amount of which is necessarily paid by the issuer;

c) The risks incurred by the owner of the title in the case of shares are higher: the risk of unfavorable development of the firm's business, the risk of losing the invested funds, in case of liquidation of the firm. In the case of bonds, the risks are lower: the risk of default (disappears in the case of a state guarantee), and in case of liquidation of the firm, the creditors have priority over the shareholders;

d) The life of the shares is virtually unlimited (or until the issuing company is liquidated) and the bond is limited (by the due date).

8.2. The concept and structure of the capital market

The capital market represents all the relationships and mechanisms through which the available and dispersed capital of the economy is directed to the economic agents as fund applicants. The capital market functions as a link mechanism between those with a surplus capital (investors) and those in need of capital (issuers).

***The (financial) capital market** is a medium- and long-term fund market on which **securities** are exchanged and traded, which serve as a support for capital exchange.* On this market there is a direct relationship between the holders and the users of the funds, namely a direct financing of the latter, who take possession of the capital through the issuance of financial titles.

The financial securities market, as a link mechanism between surplus funds (investors) and fund users (issuers), is *structured* on two major components (segments): the ***primary*** and ***secondary*** markets.

♦ ***The primary capital market*** is that segment of the capital market on which new and *newly issued* financial securities are sold and purchased by different economic agents, financial-banking institutions or public authorities. As it is the first segment of the capital market, it involves *issuing securities and placing them for the first time on the market*, being the framework where issuers attract financial resources to finance economic activities or to cover some budget deficits.

On this market segment, *the first issues of financial securities* are launched to attract medium and long-term capital available on both the domestic and international capital markets. In this way, the primary market *ensures the meeting between the demand and supply of securities*, allowing the capitalization of the

participating economic agents. It is therefore a means of distributing the securities by the users of the funds (*the issuers*) and a means of investing in these securities on the part of the fund holders (*the investors*).

On the primary capital market, *the selling price* of the securities is represented by their *nominal value*, namely the amount written on the securities, representing a *firm price*. Operations on this market are mainly made through banks, whichplace the securities on the market in exchange for a commission.

Issuers of securities (fund applicants) may be the following categories of legal persons:

- companies that are set up by public subscription, in order to accumulate as much initial capital as possible;
- commercial, private or state-owned companies wishing to increase their share capital;
- companies that need medium and long-term loans to finance investments;
- financial and insurance financial institutions;
- government authorities that need funds to finance national economic projects;
- public, central or local government bodies in order to cover public spending or budget deficits.

The *specific operations* of the primary capital market are, in fact, the means by which a company can obtain medium or long-term funds (*public offering, private placement and bond issue*) and the means by which an investor can acquire a package of shares in a particular company or become a creditor of it (*public offering of purchase* and *subscription of bonds*).

♦ ***The secondary capital market*** is a market of *previously issued* securities, namely securities issued and put into circulation on the primary market. On this market segment, *the securities are traded* by those who benefit from the rights that they offer, that is, by investors. This market, just like the primary market, focuses on the demand and supply of securities, but a derivative demand and supply, and manifests itself after the securities market has been formed.

The secondary market (the stock market) *offers the possibility of capitalizing securities (shares and bonds) before they generate income (dividends or interest)*. The existence of this market guarantees to the holders of securities the possibility of negotiating them and transforming them into liquidities, depending on the demand and supply, thus certifying that those securities have a certain value. In Romania, the stock market is currently represented by the Bucharest Stock Exchange (BVB).

The fundamental problem of the activity on the secondary capital market is therefore *the formation of the price (rate)* of the securities as a result of the negotiation operations, which can be substantially different from the nominal value. The level and rate development depend on many *factors*, the quantification of which is reflected in *the ratio between the demand and the supply of securities*.

Among the most important, we can list: the economic-financial results of the issuer; the average interest rate on the money market; price dynamics (inflation); the economic outlook of the issuer; internal and international economic conjuncture; the psychological behaviour of participants, etc.

The main *operations (transactions)* that are carried out on the secondary market of the capital (the stock market) are generally speculative and are divided into two categories: *spot operations* and *futures operations*.

a. *Spot transactions*, also known as "cash" transactions, consist of exchanging titles against cash on the day of the transaction and at the existing exchange rate that is accepted by the participants at that time. These transactions are characterized by the fact that the person who orders the sale or purchase assumes the obligation to immediately (or during the normal liquidation period) make available to the partner the securities sold or the amount of money representing the transaction price. The value of the securities can be received in the account opened with the brokerage company.

b. *Term transactions*, also known as "futures" transactions, consist of contractually assuming the obligation to buy or sell a certain amount of financial securities at a future date (T_1), the price being set at the time of the transaction (T_0). Term transactions are essentially speculative, thus the main objective of the operators is not the actual receipt or delivery of the securities, but the gain of possible exchange differences between the day the contract is concluded and its maturity.

Thus, the *speculator* "on decrease" counts on a decrease in the exchange rate of the securities with which he/she works and, therefore, will issue a *future sale order*. If by the maturity of the contract, its forecasts are true, namely if the rate decreases, he/she will acquire the securities through a spot transaction on the day of maturity and give them to the buyer, thus earning the difference between the two rates (he/she sold them for more and bought them for less).

Conversely, the speculator "on increase" anticipates an increase in the exchange rate and gives a *future purchase order*. If by maturity the rate increases, he/she will acquire the securities at the previously set rate and will make a spot sale on the day of maturity, earning the price difference (he/she bought for less and sold for more).

The one who manages to predict the real rate evolution will win and the other will lose.

Transactions on the secondary capital market are carried out through *financial investment and services firms (SSIF)*, also referred to in economic language as *brokerage firms*. They are authorized to do so by the capital market regulator (now referred to as the Financial Supervisory Authority - ASF) and they are organized as joint-stock companies, fulfilling the following *functions*:
- intermediation in the trading of securities, namely their sale and purchase on behalf of third parties (acting as a broker) and charging a commission;

- securities trading and sale, namely purchase transactions, in their own name and on their own (acting as a dealer), and gaining from the price difference (between sale and purchase).

For the secondary market to be able to fulfill its *role* in a modern economy, it must meet a number of *requirements*:
- *the liquidity*, namely abundance of available funds, on the one hand, and financial assets, on the other hand. A market is liquid when it is possible to sell and buy financial assets (securities) in an operative and uninterrupted manner. A non-liquid asset cannot be resold, the only possibility to recover its value being the future revenue it can bring. This removes one of the main economic functions of financial assets, namely to mobilize the invested capital and to turn the investment into a marketable value;
- *the efficiency*, namely the existence of mechanisms for operative realization of transactions at the lowest costs. The cost of transactions affects the capitalization of assets; the lower it is, the higher the attractiveness, which means that the fund holders are more interested in investing in financial assets;
- *the transparency*, namely direct and rapid access to relevant information for both the titular holder and the holder of the funds. Transparency ensures free competition, counteracting monopoly trends and thereby protecting investors;
- *the fair market*, namely a very rigorous market organization through specific regulations, leading to the creation of a mechanism for the full and correct circulation of information, countering market manipulation trends;
- *the adaptability*, which implies the prompt response of the market to the new economic and extra-economic conditions, to the new opportunities; a financial market is efficient insofar as it is innovative, finds new ways to respond to the specifics of supply and demand, as well as to the rules established for the whole economic system;

In conclusion, it is important to note that there is a *close link* between the two segments of the capital market; they influence each other and the secondary market cannot exist without the primary market. The explanation lies in the fact that the primary market offers the secondary market the products to be traded, while the secondary market offers the primary market information about the marketability (liquidity) of the issued products and the price at which new funds can be attracted (the price of a new issue).

9. INFLATION AND UNEMPLOYMENT

9.1. Inflation

Synthesizing the numerous opinions on contemporary inflation, some of its *essential features* can be noticed:

    a. it is a process of money depreciation both at national level and in relation to other currencies;

    b. it is a process of sustainable and generalized price and tariff growth;

    c. it is the expression of a monetary and material imbalance, manifested both on the money market and on the market of economic goods;

    d. it is influenced by many psychological aspects (for example, for fear of economic instability and using the credit mechanism, the population brings a future demand for consumption in the "present").

In close connection with the essential features of inflation, it can be argued that **contemporary inflation** r*epresents a monetary-material macroeconomic imbalance, which expresses the existence of a monetary mass in circulation that exceeds the real needs of the economy (circulation), which leads to the depreciation of money and to the sustainable and generalized increase in the prices of goods and services of an economy*. If there is a reverse situation in the economy, the phenomenon is called *deflation*.

The mechanism of inflation is directly related to its main causes. In this respect, the correlations between aggregate demand, aggregate supply and price level need to be analyzed.

Knowing that in a market economy the average level of macroeconomic prices is determined by the interaction between *aggregate demand (AD)* and *aggregate supply (AS)* and that the meeting point of the two macroeconomic categories will determine *the balance price (BP)*, then this price will fluctuate according to the variations in global supply and demand. On a graphical representation, the intersection of the curves representing aggregate demand and supply will indicate the level of the balance price. Understanding the interaction mechanism between these two macroeconomic variables allows us to deduce the underlying causes of inflation.

In this respect, two **major causal forms** of contemporary inflation can be distinguished: *demand inflation* and *cost inflation*.

* Demand Inflation

This type of inflation appears as a result of *aggregate demand growth*, over a certain period of time, at a higher pace than the aggregate supply. In other words, the excess of solvable demand corresponds to a rigid supply that cannot be adapted to the requirements of demand.

Taking into account such an evolution of demand, manufacturing companies will have two types of reaction: mainly *increasing the production* or mainly *increasing the prices*.

Given the structure of aggregate demand, its growth needs to be analyzed starting from the *elements* that make it up. It can be determined by the following *circumstances*:

✓ the increase in consumption expenditure by the population;
✓ increased investments by companies, which have delayed productive effects;
✓ the excessive increase in public expenditure, namely government purchases, especially non-productive ones;
✓ the increase in exports, namely the entry of additional foreign currencies in bank accounts.

Overall, excess demand on the market may have the following, more important, **causes**: ⬥ *excessive currency issuance in circulation*, which generates *currency inflation*; ⬥ *the expansion of bank credit*, which leads to *credit inflation*; ⬥ *decreasing the propensity for saving*, which causes *inflation by de-economising*.

➢ ***Currency inflation*** is caused by the introduction and maintenance of a surplus monetary mass in relation to the volume of commodities on the market, above the needs of money circulation. This is generally the case when large budget deficits occur and their financing is made through loans from the central bank, which will issue a corresponding amount of money. The inflationary phenomenon stems from the fact that the state does not borrow to produce additional goods and services, but to consume, triggering a demand without a correspondent in the supply.

Also, when there is a massive surplus of exports compared to imports, the country's foreign exchange reserves rise and they form new cash outflows that do not find a correspondent market equivalent in goods and services. The decrease in the rate of money rotation can also be added to the increase in the money supply in circulation, while constantly maintaining the physical and value volume of transactions.

➢ ***Credit inflation*** arises as a result of the exaggerated development of bank credit, which can lead to an overcollateralisation of the volume of account money with inflationary effects similar to those produced by cash. This form of inflation occurs when credit expansion aims at massive investments in the economy, investments that, unless they are achieved and operational in time, lead to further activation of consumer demand (since there is an extra monetary mass in circulation). This consumer demand corresponds to a "late" supply, resulting in higher prices for most consumer goods. Moreover, the substantial increase in consumer credit leads to the same result.

Credit inflation and currency inflation can be considered to be one and the same form of inflation (monetary inflation), having as a common element the direct or indirect increase in the nominal income of the population and economic agents which underlie the potential surplus of demand.

➢ *Inflation through de-economising* has its origins in lowering the people's propensity for savings as a result of pessimistic forecasts regarding the preservation of the purchasing power of existing and future economies, as well as of subjective and psychological factors for a certain period. The result of this behaviour is the increase in the share of consumption in the total available income of the population, consumption that tends to exceed the supply of goods (especially for long-term use) and which will generate a price increase in the manufacturing branches.

* Cost Inflation

Cost inflation arises when, throughout the economy, production costs grow at a steep pace, independent of aggregate demand. If the economic operators are faced with a cost increase, they will partly respond by *increasing the sales prices* and partly by *reducing the volume of activity*.

The factors that can drive up costs and become the **causes** of cost inflation are numerous. Among the most important are the following:

• *increasing wages at a higher rate in comparison with labour productivity growth*. The pressure of high production costs is reflected in inflationary prices when the remuneration of production factors (especially the labour factor) increases to a higher extent than their productivity does. An unfounded salary policy based on economic criteria will lead to high wages without coverage in production, thus inflationary tensions being created. Only when wage dynamics is at most equal to the labour productivity dynamics, will claims and wage increases not lead to inflationary prices.

• *excessive profit growth*. The phenomenon usually arises in the case of large, monopolistic or oligopolistic companies that impose high prices on the products sold, which may constitute acquisition costs for other economic agents.

• *Rising prices for raw materials and supplies*. This phenomenon usually refers to raw materials, supplies, fuels, energy, etc., which come from imports and whose prices are reflected in the production costs of indigenous finished products (imported inflation). The inflationary effect is amplified against the devaluation of the national currency, which means higher imports and cheaper exports.

• *Accelerated depreciation policy*. The practice of decreasing depreciation during the normal operation of fixed assets, to prevent premature moral wear, leads to higher costs that are recorded at the beginning of the period when fixed assets are used.

• *High fiscal pressure*. If direct taxes reduce the available nominal income and, consequently, the inflationary demand pressure, this is not the case of indirect taxes, which are found in the sales prices of the products.

The distinction between cost inflation and demand-driven inflation is difficult to achieve in the real economy, as they manifest simultaneously.

In the dynamics of economic reality, inflation cannot be attributed solely to demand or costs, but it is actually the result of the combined action of these two trigger factors, thus having a ***mixed (combined) inflation***.

Both types of inflation ultimately manifest themselves as one phenomenon, namely the *generalized increase in prices*. In fact, between the level of production costs and the level of income there is a part-whole relationship, these being two economic categories reflected by the same reality - the price. Thus, the two types of inflation come to be intertwined, even if the phenomenon was originally triggered by a single factor.

The combination of the two types of inflation may result in an *inflationary spiral* hard to stop:

Inflationary spiral prices – wages

Populist economic policy → Wage rises → Increase in costs → Increase in sales prices → Drop in wage purchasing power → Social claims → New wage increases → A new increase in costs → New inflationary pressure…

The magnitude of inflation is usually expressed in the relative way, by calculating some *index* categories, depending on which the magnitude of the inflationary phenomenon in a country can be appreciated.

In the countries of the European Union, the *Laspeyres price index (PI)* is used to measure inflation, a synthetic index (aggregate) calculated according to the following formula:

$$PI = \frac{\sum Q_0 P_1}{\sum Q_0 P_0} \times 100 \text{ ,}$$

where: Q_0 - the quantity of economic commodities during the reference period T_0, and P_1 and P_0 - the average prices of the goods categories taken into account during the base period and the current period.

Depending on the nature of the goods making up the sample, the price index may either be in the form of *the consumer price index (CPI)*, which is determined on the basis of a "basket" of consumer goods (material and services) relevant to population consumption, or in the form of *the general price index (GPI)*, which takes into account both consumer goods prices and capital goods prices.

In Romania, the CPI is calculated on the basis of a product nomenclature, comprising over 1700 assortments (aggregated by commodity groups) considered to be representative of the population as a whole. Price observation and recording takes place in 42 localities of the country, and for each commodity group, a specific

price index (PIᵢ) is calculated. Each product group is attributed a certain weight, which results from the structure of the money expenditures of the population, according to complex statistical surveys. The result is the consumer price index for the economy as a whole:

$$CPI = \Sigma\, W_i \times PI_i$$

where: W_i - the weight of each group in total consumption expenditure; PI_i - the specific price index.

Based on the so-calculated price indices, the annual inflation intensity can be measured in the form of the *inflation rate (R_i)*:

$$R_i = \frac{PI_1 - PI_0}{PI_0} \times 100 \quad or \quad R_i = PI - 100$$

To capture the magnitude of the inflationary phenomenon, we also use the *purchasing power index* (Ppi), calculated on the basis of price indices (PI):

$$Ppi = \frac{1}{IP}$$

It expresses the degree of depreciation / appreciation at different times of the analyzed period, namely the evolution of the purchasing power of the currency in relation to the price change.

9.2. Unemployment

Generally, **the unemployment phenomenon** is defined in the economic literature as *a negative state of the economy, resulting in a structural and functional labour market imbalance, where the supply of labour is higher than the the economic agents' demand for labour force.*

The most well-known and widely used definition of unemployment is the one adopted by the International Labour Office, a United Nations system, which develops statistics and analyses on labour issues, and according to which an **unemployed** *person is more than 15 years of age and fulfills the following conditions at the same time: • is fit for work; • does not work; • is available for paid employment; • is looking for a job.*

Among the unemployed people are the people who have lost their jobs and new jobseekers who do not find a job that suits their own requirements. In terms of the labour market, **unemployment** *is a macroeconomic phenomenon, opposed to employment, representing a surplus of active population that can be employed in profitability conditions imposed by the market.*

These definitions capture the state of the labour market imbalance, namely the labour force surplus in relation to the labour demand. Therefore, unemployment

must be viewed globally, even if on a certain labour market segment there is, for example, a labour shortage.

Ascertained in economic practice and studied in theory, unemployment is **characterized** by aspects related to: *its level*, *intensity*, *duration* and *structure*.

♦ ***The level of unemployment*** is determined both in absolute terms, by *the number of the unemployed* and in relative size, as the *unemployment rate (Ur)*, calculated as a percentage ratio between the total number of the unemployed (Nu) and the total number of the active population (Ap), as follows:

$$Ur = \frac{Nu}{Ap} \times 100$$

Unemployment has different amplitudes in geographic areas and periods, and its limits must be reported to what *full employment status* means. Full employment is that level of employment of labour resources which allows the obtainment of the maximum of goods and services in order to meet the people's needs.

Full employment does not mean, however, the lack of unemployed workforce, but its employment to the limit of natural unemployment. This type of unemployment is, in fact, equivalent to *voluntary unemployment*, which consists of the number of unemployed workers, as a result of their own decisions (under various motivations) to cease working. Generally, it is estimated that the rate of natural unemployment is between 2% and 3% in developed countries.

As a result, *full employment is equivalent to low unemployment, reflected by a natural rate of several percent or, in other words, employment of about 96% - 97% of the available active population, the difference up to 100% being considered to be natural (normal) unemployment.*

Depending on the level of natural unemployment (considered normal), two situations are usually considered: the state of underemployment and the state of overemployment:

- The state of *underemployment* exists when the effective unemployment rate is higher than the natural rate, namely there is effective, abnormal unemployment (e.g. 8%, 10%, 12%, etc.).
- *Overemployment* is usually defined by an unemployment rate of only about 1% - 2%, thus less than the rate considered normal or natural (in the economic reality this situation is extremely rare).

The economic and social consequences of the two states are different. In the case of underemployment, social tensions occur, social costs increase and labour resources are wasted at national level. In the case of overemployment, the labour force becomes rare and expensive, with the risk that the wage dynamics will outstrip the labour productivity.

♦ ***Intensity of unemployment***. This is another feature of this phenomenon, according to which the following types of unemployment can be distinguished:

total unemployment, which means job loss and the complete cessation of activity; *partial unemployment*, which consists in diminishing the work done by a person, by reducing the working time below the legal one and correspondingly reducing the salary; The intensity of unemployment reflects the degree of work opportunity loss for labour-market workers.

♦ ***The duration of unemployment*** represents the time interval between the time of the job loss or the decrease in the activity and the resumption of the activity at the previous parameters. The duration of unemployment differs from one person to another; therefore to capture the phenomenon at national level, it is necessary to take into account the *average duration* of unemployment. This can be established as an average per economy or branch of activity over a given period, as follows:

$$Dd = \frac{Nd}{Nu},$$

where Dd - average duration in days; Nd - number of unemployment days; Nu - number of the unemployed.

♦ ***The structure of unemployment*** includes the social categories affected by this phenomenon, differentiated by indicators such as: the branch or field of activity, the level of qualification, profession, age, gender, ethnicity etc.

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