

Pharmacy Management and Economics

4th year, 7th semester.

Lesson 2.

Theoretical foundations of the economic analysis of the pharmacy organization

Questions for discussion in the classroom

1. The importance of economic analysis in the activities of a pharmacy organization. Scheme of economic analysis
2. The purpose and objectives of economic analysis
3. Indicators and values used in the economic analysis of the pharmacy
4. Types of economic analysis
5. Methods and techniques of economic analysis

1. The importance of economic analysis in the activities of a pharmacy organization.

Scheme of economic analysis

The analysis of the economic situation in a pharmacy organization should be carried out both comprehensively and in the most important areas of activity reflected in the main economic indicators.

The results of the analysis of the economic situation are used to assess the results of the pharmacy's activities, for its planning for subsequent periods.

Performing an analysis of actions and calculations for the purpose of a comprehensive study of interrelated and interdependent indicators.

The *scheme of economic analysis* consists of the following stages:

Stage 1. The analysis of the results of activity — turnover, gross and net profit includes:

- study of the absolute and relative growth of commodity turnover and profit indicators in comparison with the plan and data of previous time periods,
- study of the dynamics of indicators over a number of time periods (months, quarters, years)
- study of the influence of individual factors on the results of work on these indicators

Stage 2. Analysis of the costs — costs of circulation and other costs not included in the costs of circulation includes:

- study of the structure and dynamics of circulation costs,
- study of the impact of individual cost items on the overall cost change,
- analysis of the impact of individual factors on costs

Stage 3. Analysis of resources according to the following indicators:

- material resources, fixed and working capital (for example, the study of the volume and composition of fixed assets, characteristics of their technical condition, degree of use;

determination of the effectiveness of the use of working capital, availability of commodity resources, etc.);

- financial resources (assessment of economic potential, the effectiveness of financial and economic activities etc.);
- human resources (study of the availability of pharmacy organizations with human resources, assessment of the intensity and effectiveness of their use, etc.).

The *economic analysis of each individual indicator includes*:

- 1) preliminary assessment (analysis of the implementation of the indicator plan as a whole, study of its dynamics and structure);
- 2) factor analysis (study of factors affecting the indicator, its dynamics and the degree of implementation of the plan);
- 3) final assessment (identification of reserves and development of measures for the development of identified reserves).

Such an approach to economic analysis will allow us to develop reliable, scientifically based plans for the economic and economic activities of a pharmacy organization, high-quality medical services for the population, medical and other organizations based on the effective use of resources and increasing the profitability of the pharmacy.

2. The purpose and objectives of economic analysis

Economic analysis of activity is one of the most important parts of the overall management system of a pharmacy organization.

Based on economic analysis

- the strategy and tactics of the organization's development are being developed,
- plans and management decisions are justified,
- monitoring of their implementation is carried out,
- the economic results of the pharmacy's activities for the sale of pharmacy assortment goods and the provision of services to the population are evaluated.

The economic analysis of an organization's activity is a set of special methods and techniques for a comprehensive study of financial and economic processes in an organization's activity, which is influenced by objective and subjective factors and is reflected in a certain system of economic information.

Factors are the most significant reasons that cause positive or negative changes in the results of economic activity, These reasons are the subject of economic analysis.

The **purpose of the analysis** is twofold: on the one hand, the analysis makes it possible to determine the economic efficiency of commercial activity and the degree of achievement of the set goals, and on the other — to identify the optimal directions for the development of this activity in the future.

The **task of economic analysis** is to draw up a general picture of the economic process from various kinds of data on the results of the organization's work, identify its inherent development

trends and offer the best option for making decisions on managing economic processes in the organization.

3. Indicators and values used in the economic analysis of the pharmacy

In the course of forecasting the economic activity of a pharmacy organization, various indicators can be used for analysis.

An indicator is a quantitative assessment of the process under study, which is a value expressed in the appropriate units of measurement.

The *following requirements* are imposed on the planning and analytical indicators:

- adequacy (reflection of real processes and correspondence to the essence of economic phenomena);
- sufficiency (ensuring the necessary accuracy of the reflection of the process under study);
- measurability (the ability to quantify an economic phenomenon);
- dynamism (justification of the value of the parameters of the indicator, taking into account its changes over time);
- reliability (ensuring the objectivity, completeness and truthfulness of information);
- certainty (unambiguous understanding and interpretation of the information used);
- documentality (relationship with the current forms of accounting and reporting).

Indicators used in planning and economic activity can be classified according to various criteria (Fig. 1).

Indicators			
<i>According to the content</i>		<i>According to the degree of aggregation of phenomena</i>	<i>Depending on the nature of the phenomena studied</i>
quantitative		individual,	interval
qualitative		aggregated (generalizing),	moment

Fig.1. Classification of economic analysis indicators

According to the content, the indicators are divided into quantitative and qualitative.

Quantitative indicators characterize the total volume and scale of economic activity. For example:

- number of employees employed,
- the amount of fixed and working capital,
- occupied retail and warehouse space
- volume of turnover,
- profit margin,

- volume of income and expenses,
- salary expenses.

Qualitative indicators give an idea of the performance of the enterprise and the degree of efficiency of the use of material, labor and financial resources.

For example:

- o profitability,
- o level of profitability,
- o the level of circulation costs,
- o labor productivity,
- o turnover, o capital return of fixed assets;
- o the structure of own and borrowed capital
- o the efficiency of using own and borrowed funds,
- o the level of solvency of the enterprise,
- o the financial stability of the enterprise (indicators of liquidity, financial stability, maneuverability of equity, etc.);
- o indicators of the competitiveness of the enterprise (the share of the enterprise in the market, the quality of goods, the image of the enterprise, the degree of development of advertising, sales opportunities)

According to the degree of aggregation of phenomena, indicators are divided into

individual, characterizing individual processes or individual aspects of the phenomena under study (for example, the time spent by one employee on the sale of one over-the-counter vacation drug), and

aggregated (generalizing), used for generalized characteristics of complex economic phenomena (for example, labor productivity of the over-the-counter vacation department).

Depending on the nature of the phenomena studied, interval and moment statistical indicators are distinguished.

Data expressing the development of phenomena for certain periods of time are **interval indicators**, for example, turnover for a month, quarter, year. They characterize the process of changing signs.

Moment indicators include those that reflect the state of the phenomenon at a certain date (moment), for example, inventory at the beginning or end of the period.

Values. In economic analysis, values are used that can show:

A) the volume of the process being studied (for example, the volume of turnover, the number of employees);

process level (e.g. cost level, profit level);

B) the ratio (for example, between production and non-production areas), etc.

The values are divided into **absolute, relative and average** (Fig. 2).

Absolute values express the size, volume of phenomena and processes. These are always named numbers that have a certain dimension — units of measurement.

Depending on the units of measurement used, the absolute values may be:

Natural: for example, the number of packages, the number of recipes, the area of the premises are **conditionally natural**: for example, the volume of the refrigerator, the capacity of the unit for the treatment of purified water.

Monetary: for example, retail turnover, gross income, costs, profit, inventories.

Labor: for example, the number of employees, the length of the working day

Types of values			
absolute		relative	average
Natural		relative values of dynamics	arithmetic averages
Monetary			average chronological
Conditionally natural		relative values of the structure	geometric averages
Labor			median
			fashion

Fig. 2. Types of values used in economic analysis

Analysis is primarily a comparison, a comparison of static data. As a result of the comparison, a qualitative assessment of economic phenomena is obtained, which is expressed in the form of relative values.

Relative values reflect the ratio of any two absolute parameters and are a quotient of the division of one of them (the indicator being compared) by the other (the comparison base).

If the value of the comparison base (base) is equated to one, then the relative value (the result of the comparison) is a coefficient (index) and shows how many times the studied value is greater than the base. The calculation of relative values in the form of a coefficient is applied if the compared value is significantly greater than the one with which it is compared.

An index is a relative indicator that characterizes the change in the magnitude of an object in time, space or in comparison with a standard (standard, plan, forecast, etc.).

Indices are used to analyze complex economic phenomena, in particular to describe price changes at the consumer level in cities, regions and the country as a whole.

Coefficient (index) = the indicator being compared : comparison base

Example: calculate the price index of the current year in comparison with the previous one.

In the previous year, the food basket was 18.560 rubles. (basic indicator)

This year, prices have risen slightly and now the food basket is 19,490 rubles.

The coefficient (index) will be: $19490 \text{ rub.} : 18560 \text{ rubles.} = 1.05$

This index characterizes the change over time in the general level of prices for goods and services purchased by the population for non-productive consumption. It is one of the most important indicators of inflation and is used to analyze socio-economic processes, regulate the exchange rate of the national currency, determine the level of minimum social guarantees and other purposes.

If the value of the base (comparison base) is taken as 100%, the result of calculating the relative value will be expressed as a percentage;

Coefficient (%) = Compared indicator : Comparison base x 100%

Example. Compare the implementation of the turnover plan for the 1st quarter of this year.

Plan 1 345 thousand rubles. Actually sold goods in the amount of 1,548 thousand rubles.

To compare and calculate the coefficient, we divide the amount of goods actually sold by the planned amount.

The plan completion rate in % will be: $1548:1345 \times 100\% = 115\%$

The ***relative values of dynamics*** characterize the change of the phenomenon over time, the intensity of development (for example, the growth or growth rates, price indices).

At the same time, if the base of comparison is constant, then such relative values are called basic.

If the base of comparison is the value of the previous indicator, then in this case chain relative values are obtained.

The growth rate (Trost) shows how many times the indicator has changed in the subsequent period (N) compared to the indicator in the previous period (N0):

$t \text{ growth} = p1 : p0$

The growth rate can be expressed as a percentage.

The growth rate (Tprprost) shows by how many percent the indicator has changed in the subsequent period compared to the previous one:

$Tprirosta = (P1 - P0) : P0 \times 100\%$

The ***relative values of the structure*** characterize the composition of the object under study, the totality (for example, the assortment structure, the structure of sales by the method of sale). The relative values of the structure are calculated as the ratio of the absolute value of each of the elements of the aggregate to the absolute value of the entire aggregate, i.e. as the ratio of a part to the whole, and represent the specific gravity of the part as a whole. As a rule, the relative values of the structure are expressed as a percentage (the comparison base is taken as 100).

Relative size of the structure = Part of the aggregate : The whole set x 100%.

An equally important role in the analysis is played by averages. They make it possible to generalize homogeneous indicators, identify general trends, patterns in the development of economic processes.

Average values are generalizing indicators that reflect the effect of general conditions, the regularity of the phenomenon being studied.

The average value is calculated for features that are qualitatively homogeneous and different only quantitatively (average height, average salary).

The average value characterizes the studied population by any one attribute, is a reflection of the values of the studied attribute and is therefore measured in the same dimension as this attribute.

In order to get a complete and comprehensive picture of the studied population by a number of essential features, it is necessary to have a system of averages that can describe the phenomenon from different sides.

Thus, changes in the income of pharmacy organizations can be characterized by indicators of average turnover per organization, the average number of requests to one organization, the average level of profitability, etc. In this case, the general trend is more clearly visible.

In the analysis of the economic activity of a pharmacy organization, two categories of averages are most often used: power (arithmetic mean, weighted arithmetic mean, chronological mean, geometric mean, etc.) and structural (mode, median, etc.)

The complex application of absolute, relative and average values in the analysis and planning of the pharmacy organization is one of the conditions for the correct use of statistical indicators and provides a comprehensive description of the phenomenon under study.

4. Types of economic analysis

Depending on the various characteristics, there are types of economic analysis

According to the time attribute, the analysis is divided into preliminary (forecast of performance results used in the development of organization plans) and subsequent (analysis of the actual results of economic activity after the end of the reporting period).

The subsequent analysis, in turn, is divided into the current (or operational), on the basis of which the work of the enterprise is evaluated for a short period of time (day, week), and periodic, which is a study of all the indicators of the enterprise for the reporting period (quarter, year).

According to the degree of coverage, the analysis can be complex (they study all the results of financial and economic activities) and thematic (they consider some of the most significant aspects of the economic potential of the enterprise at a given time).

Depending on the type of user, external and internal analysis are distinguished. External analysis is based on the open (published) information of annual reports and is carried out both by the company itself and by statistical, financial authorities, banks, shareholders, investors, etc.

Internal analysis is, as a rule, a trade secret and aims to give the company's management analytical material for decision-making effective management decisions (pricing, volume and composition of costs, factors of growth (decrease) of income, etc.).

According to the studied objects, the analysis is divided into on-farm (study the activities of one enterprise and its divisions) and inter-farm (compare the final performance indicators of different enterprises in order to identify additional reserves, eliminate deficiencies in the work, improve the efficiency of the main activities).

According to the research directions, there are financial and economic analysis, auditing, functional and cost analysis, marketing and analysis of the effectiveness of the management organization. Each of them is significant in volume, has its own pronounced specifics and is an independent type of analysis.

Financial and economic analysis is aimed at studying the financial results of the enterprise and reveals the content of financial indicators in their relationship with the main activity (analysis of profit and profitability, assessment of the property status of the organization, the effectiveness of the use of own and borrowed capital, analysis of the implementation of the financial plan, etc.).

Audit analysis is carried out by appropriate specialists to assess the current financial condition of the enterprise: financial sustainability and forecasting its changes in the near future.

The functional and cost analysis is aimed at identifying opportunities to improve the efficiency of the product promotion process — from its acquisition to sale to an individual consumer.

Marketing analysis makes it possible to assess the effectiveness of tactics and strategies of all aspects of marketing activities (analysis of environmental factors, demand conditions, price and assortment policy, advertising, competitiveness of goods sold, etc.).

On the basis of organizational and managerial analysis, the management system or forms of the management apparatus of the enterprise are studied. The purpose of such an analysis is to strengthen the positive impact of the management system on the economic activity of the enterprise by improving its structure and improving the skills of employees. The effectiveness of the management organization is assessed by the final results of activities (profit) and the level of costs for performing managerial functions.

Depending on the research methodology, diagnostic, comparative, factorial, margin, economic and mathematical analysis and controlling are distinguished.

Diagnostic analysis aims to identify the causes of deviations in the company's activities from normal or planned processes based on the signs typical of violations of this kind. This analysis allows you to quickly make the necessary adjustments without attracting additional resources.

In a comparative analysis, the actual indicators of the reporting year are compared with similar data from previous periods, planned indicators, established standards, data from other enterprises.

In the course of factor analysis, factors that have a decisive impact on the performance indicator are identified, and the degree of influence of each factor on the change in the value of this indicator is calculated.

Margin analysis is a study of the efficiency of current economic activity and an assessment of the prospects for its development based on the causal relationship of the volume of turnover of the enterprise, the amount of profit and the costs of circulation (costs).

Economic and mathematical analysis is used in the study of complex phenomena (objects), with a high degree of uncertainty. An economic and mathematical model is a description using equations, inequalities, functions, quantities (parameters) that reflect the state and patterns of the phenomena under study. The purpose of the model is to establish quantitative and logical dependencies between various aspects of the economic phenomenon. The economic and mathematical model allows us to determine a variety of options for the development of this phenomenon and choose from them the optimal solution to an economic problem.

Controlling is a future—oriented concept of enterprise management in accordance with set goals, implemented on the basis of unity of planning, analysis and control over the process of achieving certain results.

Most often, Financial and economic analysis is carried out in pharmacy organizations, since managers are primarily interested in the issues of financial stability of the pharmacy. (Appendix 1, Table 2 shows the classification of types of economic analysis).

5. Method and techniques of economic analysis

The study of the activities of a pharmacy organization should be based on certain methods and techniques.

Translated from Greek, *methodos* means "the way to something", i.e. it is a way of approaching the study of certain phenomena and processes.

The method of economic analysis of economic activity is a systematic, comprehensive study of the influence of various factors on the results of an enterprise with the help of special methods of processing planned, accounting, reporting indicators in order to improve the efficiency of the organization.

Based on this definition, some features of the method of economic analysis can be identified:

- definition of a system of indicators that comprehensively characterize the economic activities of organizations;
- establishment of subordination of indicators with the allocation of cumulative performance characteristics and factors (major and minor) affecting them;
- identification of the form of relationship between factors;
- selection of techniques and methods for studying the relationship;
- quantitative measurement of the influence of factors on the aggregate indicator.

The techniques by which the economic activity of a pharmacy organization is investigated can be conditionally divided into three groups:

1) traditional (economic and statistical), including the use of comparison, grouping, chain substitution methods, equity, index, balance, etc.;

2) economic and mathematical (methods of elementary mathematics, mathematical statistics, econometric, mathematical programming, mathematical cybernetics, etc.);

3) heuristic (psychological):

- analogy — using a known solution;
- inversion — the use of the "vice versa" system;
- control questions — solving problems with the help of pointing out other issues, etc .

The methods of the first group are most often used in economic analysis - traditional (economic and statistical).

Characteristics of the techniques of the first group.

1. Comparison — comparison of the studied data and the facts of economic life. This technique allows you to assess the implementation of planned tasks, determine the achieved level and pace of economic development, identify the size and causes of differences in the use of resources, as well as internal reserves. When using this technique, it is necessary to ensure the comparability

of the compared indicators (unity of volume, cost, quality, structural indicators; time periods for which the comparison is made; comparability of the methodology for calculating indicators, etc.). The basis for comparison can be planned indicators, indicators of previous periods.

Example. The pharmacy's income in the reporting year amounted to 2,678 thousand rubles. We planned to receive an income of 2560 thousand rubles. Let's compare the actual and planned indicators.

When compared in absolute terms $2678 - 2560 = 118$ thousand rubles

. In relative terms $2678 : 2560 \times 100\% = 104.61\%$

Conclusion: the pharmacy's revenue plan has been exceeded by 118 thousand rubles this year. This is 104, 61% of the plan. Over-fulfillment was 4.61%

Several types of comparisons are used:

- comparison of homogeneous actual performance indicators of an enterprise with planned tasks, with data for the previous period, with similar indicators of another enterprise;
- comparison of changes in various indicators of economic activity among themselves, for example, the growth rate of labor productivity with the growth rate of average annual wages, etc.;
- dynamic comparison of indicators for a number of time periods in absolute and relative values, for example, the growth rate of turnover over a number of years, absolute growth (reduction) turnover over a number of years, etc.;
- industry comparisons, i.e. a comparative analysis of the activities of a number of enterprises in the same industry.

2. Grouping is a process of formation of homogeneous groups based on the division of a statistical aggregate into parts or the unification of the studied units into private aggregates on essential grounds. It is used to identify the relationship between individual economic phenomena in order to study the structure, composition and dynamics of development, to determine the average values and their content.

For example, based on the turnover indicator and the number of staff, pharmacy organizations can be grouped into groups of large and small organizations.

3. The method of chain substitutions. This method is based on eliminating the impact of all factors on the value of the effective indicator, except for one. Each subsequent substitution is associated with a change in one factor, i.e. first one factor changes, and all the others remain unchanged, then two change with the rest unchanged, etc. Then the intermediate values of the generalizing indicator are calculated by sequentially replacing the basic values (planned or for the previous period) of the factors with the reporting (actual) ones. The effect of the replacement made on the change in the value of the studied object the two indicators are compared with each other. The number of substitutions is equal to the number of partial indicators included in the calculation formula.

Example. We will analyze the impact of changes in the average number of employees and labor productivity on deviation from the product sales plan. This dependence can be expressed by the formula

$$P = H \times P$$

Where: P is the volume of retail turnover, thousand rubles;

H is the average number of employees;

P — labor productivity of one employee, thousand rubles.

Table 3.3

**Calculation of performance indicators of a pharmacy organization
by the method of chain substitutions**

indicator	plan	fact	Deviation from the plan
Number of employees	28	24	
Productivity of labor	330	529	
Retail turnover, thousand rubles	9240	12696	+3456
Calculation of changes:			
At the expense of the staff	7920 – 9240		- 1320
Due to labor productivity	12696 - 7920		+ 4776

The calculation will be carried out in a certain sequence.

1. All indicators are planned:

$$R_{\text{plan}} = N_{\text{plan}} \times P_{\text{plan}} = 28 \times 330 \text{ rubles} = 9240 \text{ thousand rubles.}$$

2. If we replace the planned value of the average number of employees with the actual one, and labor productivity remains planned, then we will determine the first adjusted indicator of turnover:

$$R_{\text{act1}} = C_{\text{fact}} \times P_{\text{plan}} = 24 \times 330 \text{ rub.} = 7,920 \text{ thousand rubles}$$

3. Replacing the planned labor productivity with the actual one, we determine the second adjusted indicator

$$R_{\text{fact}} = H_{\text{fact}} \times P_{\text{fact}} = 24 \times 529 \text{ rub.} = 12,696 \text{ thousand rubles .}$$

Now let's calculate the impact on the growth of trade turnover in the amount of 3,456 thousand rubles. both factors:

1) comparing the adjusted indicator with the planned one (7920 - 9240), we identify a decrease in turnover by 1,320 thousand rubles due to a decrease in the number of employees by 4 people;

2) comparing the actual value of turnover with the adjusted one (12 696 - 7 920) we identify an increase in turnover by 4,776 thousand rubles. by increasing labor productivity;

3) as a result, the total amount of increase in turnover amounted to 3,456 thousand rubles.

From the above data, it can be seen that the over-fulfillment of the plan for retail turnover by 3,456 thousand rubles was due to an increase in labor productivity, but a decrease in the number of employees reduced this indicator.

A variety of the method of chain substitutions are:

- the method of absolute differences
- the method of relative differences

Examples of calculations are given in Appendix 2.

4. The integral method is more accurate than the method of chain substitutions and its varieties, while the results of this method do not depend on the location of factors. The method is universal and applicable to various economic models.

Example. Using the data from the example discussed above, it is possible to determine the impact of changes in the number of employees and their labor productivity on retail turnover by the integral method:

- 1) the impact of changes in the number of employees
- 2) the impact of changes in labor productivity:

The total deviation will be +3,456 thousand rubles.

5. Balance sheet technique (balance sheet linking technique) is used in cases when it is necessary to study the relationship of two groups of interrelated economic indicators. The most widespread use of balance sheet linking was in the analysis of the financial condition. This technique is also used to verify the completeness and correctness of the calculations made to determine the influence of individual factors on the total deviation value for the studied indicator. The algebraic sum of the influence of individual factors should be equal to the value of the total deviation in the indicator as a whole. If there is no such equality, it means that the factors influencing this indicator have not been fully identified, or mistakes have been made in calculating the level of their influence.

6. The index method is based on relative indicators expressing the ratio of the actual level of the analyzed indicator to its level taken as a base of comparison. In statistics, several types of indexes are used for analysis: aggregate, arithmetic, harmonic. The index method makes it possible to eliminate the influence of individual factors characterizing the phenomenon and answer the question by changing which components the whole object changes as a whole.

In addition to the above, other techniques are used, their choice depends on the goals and objectives of the analysis (econometric methods, methods of mathematical cybernetics, psychological techniques, etc.).

Tasks on the topic of lesson 2.

Task 1. In the workbook, write down the questions and your answers to them..

1. How are the results of the economic analysis of the company's activities used?
2. List the stages of economic analysis.
3. What is economic analysis? Write a definition.
4. What is the purpose of economic analysis?
5. What tasks does economic analysis solve?
6. What indicators are used in economic analysis? Write examples.
7. What values are used in economic analysis? Write examples.
8. What does the growth rate of a particular indicator show?
9. What does the growth rate of a particular indicator show?
10. What types of economic analysis do you know? Write examples.
11. What does the financial and economic type of economic analysis analyze?
12. What is the method of economic analysis? Write a definition
13. What groups of techniques in economic analysis do you know?
14. List the traditional techniques in economic analysis.

Task 2.

Calculate the average growth rate and the growth rate of turnover according to the available data of reports on the pharmacy.

Data for calculation:

the turnover of the pharmacy in the reporting year amounted to 5 670 thousand rubles.

In the previous year – 5 345 thousand rubles.

Write formulas and make calculations.

Task 3.

According to the results of the work over the past year, the pharmacy made a profit of 541 thousand rubles.

With a profit plan of 520 thousand rubles.

Compare the actual profit data with the profit plan in absolute (thousand rubles) and relative (%) values.