

## **Course: Financial Analysis**

**Field of study:** Finance and Accounting

**Form of classes and number of hours:** lecture 30 h, practical classes 15 h, project 30 h

**Number of ECTS credits:** 6

### **Learning outcomes:**

Knowledge:

- Student has a general understanding of the various areas of business activity.
- Student knows the structure of the financial statements.
- Student understands the importance of financial analysis in the process of business management.
- Student understands the meaning and methods of financial analysis.

Skills:

- Student is able to carry out financial analysis of a company.
- Student is able to assess various aspects of the financial activities of a company.
- Student is able to, based on the results of the financial analysis, plan changes which improve the financial condition of a company.

Social competences:

- Student understands the meaning of the financial analysis of a company.
- Student acknowledges the need to consider and properly assess the financial condition of an enterprise.
- Student understands the objectives of business activity.

### **Evaluation methods of learning outcomes:**

test, exam, project, observation, discussion

### **List of course topics:**

1. Concept, types and functions of the financial analysis.
2. Sources of information used in the financial analysis.
3. Preliminary analysis of the financial statements – balance sheet, income statement, additional information, cash flow statement, statement of changes in equity.
4. Assessment of the financial condition based on the ratio analysis – indicators: liquidity and activity, degree of debt, debt servicing capabilities, indicators of profitability, ratios of market value of shares, and capital.
5. Du Pont pyramid analysis.
6. Methods of financial analysis.
7. Systems and methods for the assessment of the deteriorating financial situation of the enterprise – early warning systems, discriminant analysis.
8. Conclusions drawn from the financial analysis regarding the future activity of an entity.

## **Bibliography**

### **Basic Literature**

- [1] Bragg Steven M. *Financial analysis: a controller's guide*. 2<sup>nd</sup> ed. – Hoboken: John Wiley & Sons, 2006.
- [2] Prusak B., Bławat F., Gawrycka M., Figura P., Korol T., Drajska E., *Financial analysis of a company*. CeDeWu, 2020.
- [3] Schmidlin N., *The art of company valuation and financial statement analysis: a value investor's guide with real-life case studies*. Chichester: John Wiley & Sons, cop. 2014.

### **Complementary literature**

- [4] Jerzemowska M., *Economic analysis of a company*. PWE, 2018.
- [5] Stickney Clyde P., *Financial statement analysis: a strategic perspective*. 2<sup>nd</sup> ed. – Fort Worth, TX [etc.]: The Dryden Press: Harcourt Brace Jovanovich Publishers, cop. 1993.

### 1. Concept, types and functions of the financial analysis

The analysis that relates to the business activity is referred to as the economic analysis.

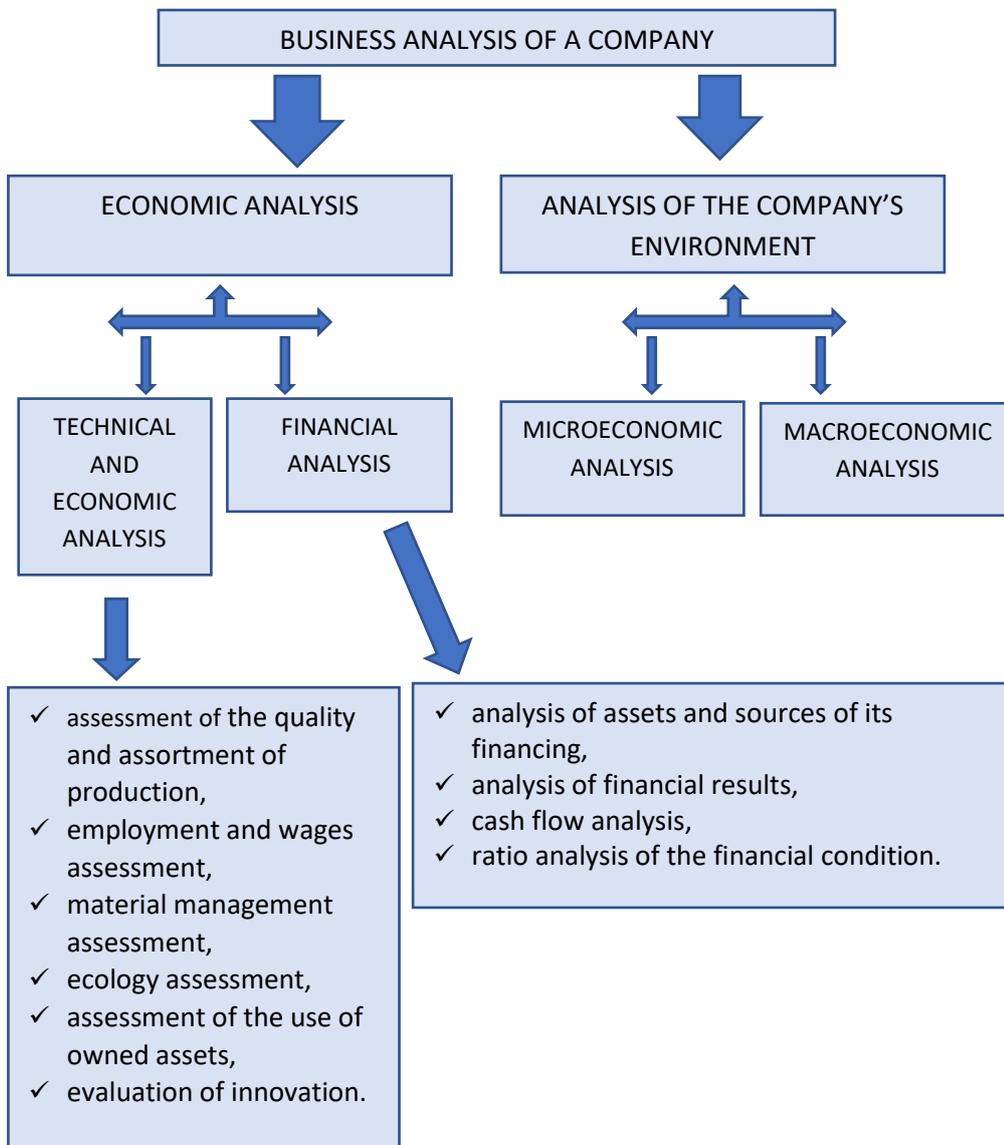


Figure 1. Business activity analysis

The objective of the financial analysis is the assessment of economic figures in monetary terms. It focuses on the preliminary and developed balance sheet analysis, income statements, sources and directions of revenues and costs, analysis of the financial result, and its determinants.

The following are the questions, the answers to which can be obtained by conducting the financial analysis:

- Is operation of the company effective and will this effectiveness improve or worsen in the future?
- Are such resources as the property and employees reasonably used and do they allow for the implementation of current tasks and development of a company in the future?

- What is the impact of the internal and external factors on the financial result of a company?
- Does the financial position allow for timely execution of current payments?
- What are the weak aspects of an enterprise? What are the strong ones?
- Are there any barriers to the development of an enterprise? How does it overcome them?

Depending on what information an enterprise requires in order to make individual decisions, various types of the financial analysis are performed. Taking into account the fact, that there are different division criteria, one can demonstrate multiple varying examples of the financial analysis.

The main criteria for classifying the financial analysis in an enterprise are:

- purpose of the analysis,
- time covered by the analysis,
- applied research methods,
- accuracy of the study,
- range of analytical testing,
- form of research.

Table 1. Criteria for the division of the financial analysis and its types

Criterion	Type of financial analysis
Applied research methods	Functional analysis Comprehensive analysis Decision analysis
Range of analytical testing	Overall analysis Partial analysis
Accuracy of the study	General analysis Detailed analysis
Form of research	Ratio analysis Settlement analysis
Time covered by the analysis	Retrospective analysis Current analysis Prospective analysis
Purpose of the analysis	External analysis Internal analysis

The most important attributes of the financial analysis are:

- descriptions evaluating and explaining events in the enterprise; it is important to assess the effectiveness of the company’s operation based on valuable relations;
- creation conclusions not only on the basis of data contained in financial statements, but also on the basis of market analysis;
- analysing the processes, primarily of the company’s current operations, less focus on the results of the past, which will help shape its future development;
- study of the company’s achievements against the achievements of other companies in the industry.

Presentation of the results of the financial analysis:

- Numerical presentation – if data is measurable and can be expressed in value. Data is usually summarised in tables.
- Graphical presentation – this method is based on the charts drawn up using the previously obtained numerical data.
- Descriptive presentation – constitutes an introduction to the remaining presentations, as well as their interpretation.

## **2. Sources of information used in the financial analysis**

The financial statements constitute the source of information about the company's financial results. They inform about the effects of the business activity of an entity, its current situation, and possible plans for the future. Financial statements are used by various institutions for control, investment planning, business operations, and economic decision making.

The financial statements of a firm present summarised information on its operating, financing, and investment activities. According to the Financial Accounting Standards Board (FASB), the financial statements should provide enough useful information to the investors and creditors, so that they can make their investment and credit decisions in an informed way.

The financial statements are expected to be prepared in accordance with a set of standards known, as the Generally Accepted Accounting Principles (GAAP). The financial statements of publicly traded companies must be audited at least annually by independent public auditors.

Said auditors are expected to attest to the fact that these financial statements of a firm have been prepared in accordance with the GAAP. Financial reporting should have the following features:

- reliability – the data contained therein is consistent with the facts, derived from reliable accounting, because only then is it possible to properly assess an audited business unit,
- verifiability – numerical data obtained from accounting can be confronted with sources at any time,
- transparency – data should be presented in such a way that it is easy to identify interrelationships and dependencies present therein,
- uniformity – statements (reports) are to be drawn up according to uniform principles and should enable one to perform dynamic tests as well as comparative analyses,
- timeliness – statements reports should be submitted within specified deadlines,
- continuity – information from the end of the previous period should coincide with the information from the beginning of the next period,
- completeness – there may not be any omissions in the report in terms of any economic event or any component of fixed assets relating to a given reporting period.

The basic financial statements consist of the following:

- balance sheet,
- income statement,
- additional information,
- cash flow statement,
- statement of changes in equity.

All elements of the financial statements are interrelated and form a whole.

### 3. Preliminary analysis of the financial statements

There are two ways of reading the financial statements: vertically and horizontally. Reading the financial statements vertically consists in comparing data from different statements. It determines the trends, that shape financial phenomena and processes in the past periods. The results of the comparisons are shown in the form of absolute amounts, as well as the percentage growth rate. Reading the financial statements horizontally consists in the analysis of structural regularities appearing in the statements. Changes in the structure of these quantities over time are also determined.

#### 3.1. Balance sheet

The preliminary analysis of the balance sheet is the study of the structure of the assets and capital of an enterprise. It can be performed in a static (vertical) and dynamic (horizontal) manner. The static analysis is the study of the structure of assets and liabilities of an enterprise at a specific point in time. The dynamic analysis, on the other hand, aims to show the direction of changes in this structure and the dynamics of its changes over the period of several years.

The preliminary analysis of the balance sheet includes:

- property structure based on asset structure ratios,
- capital structure based on the liability and equity structure ratios,
- capital and property analysis that shows the relationship between assets and liabilities, equity.

Table 2. Structure of assets (ratios)

Name of ratio	Formula
Share of fixed assets in total assets	Fixed assets/total assets
Share of tangible assets (net property, plant and equipment) in total assets	Tangible assets/total assets
Share of intangible assets in total assets	Intangible assets/total assets
Share of current assets in total assets	Current assets/total assets
Share of inventories in total assets	Inventories/total assets
Share of receivables in total assets	Receivables/total assets
Share of cash in total assets	Cash/total assets

Table 3. Structure of capital (ratios)

Name of ratio	Formula
Equipping an enterprise with equity	Equity/total assets
Charging a company with long-term liabilities	Long term liabilities/total assets
Equipping an enterprise with fixed capital (equity+long-term liabilities)	Fixed capital/total assets
Charging a company with a short-term loan	Short-term loan/total assets
Charging a company with current liabilities	Current liabilities/total assets

Table 4. Capital and assets analysis (ratios)

Name of ratio	Formula
Fixed asset coverage ratio by equity	Equity/fixed assets
Fixed asset coverage ratio by fixed capital	Fixed capital/fixed assets
Coverage of current assets with short-term liabilities	Short-term liabilities/current assets
Share of working capital in financing total assets	Working capital/assets
Share of working capital in financing the company's current assets	Working capital/current assets

There are two rules of balance sheet in financial analysis:

- ‘Golden balance sheet rule’ – according to which fixed assets should be financed by equity.
- ‘Silver balance sheet rule’ – according to which fixed assets and at least 1/3 of the current assets should be financed by fixed capital.

### 3.2. Income statement

The income statement reflects the company's achieved revenues and expenses, and thus determines the results of an enterprise in a certain period. Information from the profit and loss account provides answers to two basic questions:

1. What is the final financial result of an enterprise?
2. What are the factors that influence this result?



Figure 2. Graphical presentation of the essence of the income statement

The preliminary analysis of the income statement includes:

- determination and evaluation of changes in the size of streams representing sales revenues, costs, financial results, and other components,
- examination of the structure of revenues and costs,
- examination of the relationships between individual categories of financial results.

The structure of revenues, as W. Gabrusewicz writes: ‘has a significant impact on the size of revenues, financial situation of an enterprise and the risk of its activity’. The purpose of the revenue structure analysis is to determine the share of individual revenues generated from various types of activity in the total revenue. The total value of revenues is determined by summing up all revenues from the operations of a company.

### 3.3. Cash flow statement

The cash flow statement is a document containing information about the real cash flows, therefore all incomes and expenses related to business activity, investing and financing companies, with the exception of revenues and expenses resulting from the cash purchases or sales.

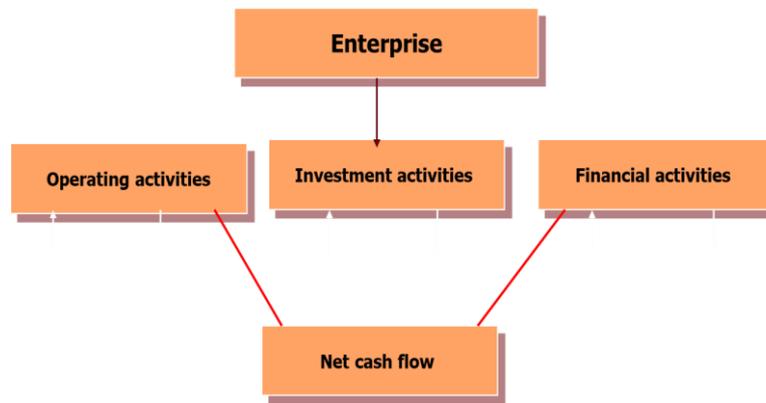


Figure 3. Structure of the cash flow

The objective of the preliminary analysis of the cash flow statement is to determine what types of activity (operating, investment, financing), resources, and events generate cash, and which cause an outflow of cash. The subject matter of the analysis is the structure of cash flows from individual types of activity, the structure of inflows and outflows, as well as the cash balances from operating, investing, and financing activities, and the net cash balance.

Case	A	B	C	D	E	F	G	H
Net operating cash flow	+	+	+	-	+	-	-	-
Net investing cash flow	+	+	-	+	-	+	-	-
Net financial cash flow	+	-	+	+	-	-	+	-

Figure 4. Variants of shaping cash flows from particular activity types

It is a common practice to use information that comes from the cash flow statement in order to assess the financial position of a company. The main groups of indicators that allow for said assessment are:

- cash performance indicators – these show the relationship between cash and the profit, turnover, or assets of an entity,
- cash adequacy ratios – these show the liquidity of an entity using the measures based on the structure of cash flows from the operating part,
- structure indicators.

Table 5. Structure indicators

Name of ratio	Formula
Net profit ratio	$Net\ income/net\ operating\ cash\ flow \times 100\%$
Amortization share indicator	$Depreciation/net\ operating\ cash\ flow \times 100\%$

Table 6. Cash performance indicators

Name of ratio	Formula
Cash productivity indicator	$net\ operating\ cash\ flow/total\ revenue \times 100\%$
Operating surplus cash ratio	$net\ operating\ cash\ flow/gross\ operating\ profit \times 100\%$
Cash productivity indicator	$net\ operating\ cash\ flow/total\ assets \times 100\%$
The monetary capital efficiency ratio	$net\ operating\ cash\ flow/total\ equity \times 100\%$

Table 7. Cash adequacy ratios

Name of ratio	Formula
Total cash equivalency ratio	<i>net operating cash flow/total expenses x 100%</i>
Debt coverage ratio	<i>net operating cash flow/debt repayment x 100%</i>
Investment coverage ratio	<i>net operating cash flow/investment x 100%</i>
Dividend coverage ratio	<i>net operating cash flow/dividend payments x 100%</i>
Cash flow indicator	<i>net operating cash flow/current liabilities x 100%</i>

#### 4. Assessment of the financial condition based on the ratio analysis

From the perspective of the management of an enterprise, the financial statement analysis is useful for the following reasons:

- it is a way to anticipate future conditions and, more importantly, it is a starting point for planning actions that will influence the future course of events,
- it is a way to show whether the position of a firm has been improving or deteriorating over time.

The ratio analysis begins with the calculation of a set of financial ratios to show the relative strengths and weaknesses of a company as compared to other firms in the industry, leading firms in the same industry or the previous year of the same firm. The ratio analysis helps to show whether the firm’s position has been improving or deteriorating. The ratio analysis can also help an enterprise to make a plan for the future.

There are four main categories of indicators in the ratio analysis:

- Liquidity analysis – it provides information on the company’s cash sources intended for the settlement of current liabilities.
- Activity analysis – it determines how the assets under the company’s control are used to generate sales revenues.
- Debt analysis – checks the capital structure (liabilities) in terms of the company’s ability to settle liabilities (especially long-term ones that go beyond the scope of liquidity analysis).
- Profitability analysis – it measures the amount of profit a company makes in relation to its revenues, assets, and invested capital.

Most of the indicators are not of optimal value. Only by relating them to the indicators from the previous period or to the indicators calculated for other companies from the same industry may one perform an objective assessment of the economic and financial situation of the company.

##### 4.1. Liquidity ratios

Liquid assets are the assets that can be easily converted to cash at fair market value. Liquidity deals with the question of ‘Will a company be able to meet its current obligations?’

The liquidity measures are presented in the table 8.

Table 8. Liquidity ratios

Current ratio	<i>Current assets/current liabilities</i>
Quick ratio	<i>(current assets – inventories) / current liabilities</i>
Coverage ratio of liabilities receivables	<i>Short-term receivables / short-term liabilities</i>

The financial liquidity:

- is necessary to maintain business continuity,
- constitutes information about the company's ability to meet its short-term obligations,
- in the case of long periods of time, it is a condition of the dynamic economic calculation of investment effectiveness.

The liquidity analysis is inextricably linked with the analysis of short-term activity and the so-called cash conversion cycle. The cash conversion cycle is based on the fact that by carrying out an operation, a company purchases raw materials for production, hence increasing its stocks. This causes an immediate outflow of cash or an increase in short-term liabilities. After converting raw materials into finished products, the company sells them, thus increasing the receivables. The recipients of the finished products pay the company's receivables, which in turn regulates its own short-term liabilities to suppliers. This way the cycle becomes complete.

The company's ability to repeat the above cycle over and over again depends on short-term liquidity and the ability to generate cash.

#### 4.2. Asset management ratios

In order to measure the company's business activity in terms of the use of property resources, the following performance indicators are used:

- indicators based on manufacturing costs in an enterprise,
- indicators of rotation,
- indicators of resource management.

In practice, to evaluate an enterprise, it is necessary to select indicators corresponding to the specificity of the conducted activity.

Table 9. Ratios for the analysis of activity

Operational indicator	<i>(cost of sales/net sales) x 100%</i>
Working capital turnover days	<i>(working capital/net sales) x 360 days</i>
Inventory turnover ratio	<i>net sales/average inventory</i>
Receivables turnover ratio	<i>net sales/average receivable</i>
Indicator collectability of receivables	<i>trade receivables/average daily revenue from sales</i> <i>Average daily sales revenue = revenue from sales / 360 days</i>
Cash cycle	<i>inventory turnover in days + period of collecting receivables</i> <i>– the period of payment of liabilities</i>
Asset turnover ratio	<i>net sales/total assets</i>
Turnover ratio of fixed assets	<i>net sales/average fixed assets</i>
Turnover ratio of current assets	<i>net sales/average current assets</i>

The asset management ratio measures how effectively a firm is managing/using its assets. Do firms have too much investment in assets or too little investment in assets in view of current and projected sales levels? What happens if a firm has too much investment in assets or too little investment in assets?

### 4.3. Debt management ratio

The assessment of the degree of indebtedness of an enterprise covers two areas which define:

- indicators showing the level of the company’s debt,
- indicators informing about the company’s debt servicing capacity.

Table 10. Ratios for the analysis of debt

Name of the ratio	Formula
Total debt ratio	$(total\ liabilities/total\ assets) \times 100\%$
Debt to equity ratio	$equity/total\ liabilities$
Coverage ratio of assets to fixed capital	$(equity + long-term\ liabilities)/assets$

The level of indebtedness of an enterprise helps to determine who provided the funds (capital) to a company: its owners or external lenders.

### 4.4. Profitability ratios

The profitability indicators are used to evaluate a company as a profit generating entity and to assess the management ability of its managerial staff. The analysis of the company’s profitability is carried out in several directions, in accordance with the three aspects of economic activity:

- commercial profitability calculated on the basis of sales volume data,
- economic profitability relating to all assets,
- financial profitability related to its equity.

Table 11. Ratios for the analysis of profitability

Name of the ratio	Formula
Ratio profitability of gross sales (Gross Profitability)	$= (profit\ before\ taxes/net\ sales) \times 100\%$
Ratio profitability of net sales (Net Profitability) Return on sales (ROS)	$= (net\ profit/net\ sales) \times 100\%$
Return on assets (ROA)	$(net\ profit/total\ assets) \times 100\%$
Return on equity (ROE)	$= (net\ profit/equity) \times 100\%$
Return on fixed capital	$(net\ profit + interest\ on\ long-term\ debt)/$ $(Equity + long-term\ debt) \times 100\%$

The profitability of a company depends on several factors determining its strategy. Accordingly, the profit margin will depend on the pricing policy, the tracking of costs and the ability to keep them low. The strategy for investing activities is also important for profitability, while the financial policy of a given entity determines its debt structure, which allows increasing the profitability of the investment.

### 4.5. Market value of the shares and capital

Capital market indicators are used to assess the profitability of investment in a given company, they include:

- indicators important for shareholders,
- indicators relevant to potential investors and companies using share capital.

Table 12. Ratios of market value of the shares and capital

Name of the ratio	Formula
Earning per share (EPS)	<i>net profit/number of shares issued</i>
Rate of profitability of shares	<i>(profit per 1 share/market price 1 share) x 100%</i>
Ratio dividend yield	<i>(dividend per 1 share/market price 1 share) x 100%</i>
Rate ratio dividends	<i>(dividend per 1 share/net profit per 1 share) x 100%</i>
PER (price to earning)	<i>market price/earning per 1 share (EPS)</i>

A very important factor in shaping the company's image is its position on the financial market. Each company should endeavour to make its image the best, because it involves the whole range of benefits. A well-established market position, good financial results, a well-known brand and favourable capital market indicators are undeniable advantages when seeking new capital.

## 5. Du Pont pyramid analysis

The pyramidal analysis of a company is based on the cause-effect relationships between individual indicators. The top of such a pyramid is the indicator that contains the most information. By studying the indicators below the main indicator, one can find the reasons that shaped this indicator.

The most famous and used model of the company's pyramidal analysis was created by an engineer F. D. Brown (1885-1965), who worked at Du Pont Corporation. The company was looking for new ventures in which it could invest its surplus. Brown's contribution to the selection of an appropriate investment consisted in developing methods of analysing the rate of return on investment. The model he developed is called the 'Du Ponta model'.

It is the most popular model that shows the dependence of profitability ratios (ROA and ROE) on other ratios. Du Pont's formula is an equation created to facilitate the analysis of the relationship between the variables specified in it and their impact on the size of the disaggregated indicator

The first version of the formula: spreads the rate of return on assets (ROA) into the return on sales (ROS) and overall asset turnover ratio:

$$\text{net profit} / \text{total assets} = (\text{net profit} / \text{sales}) \times (\text{sales} / \text{total assets})$$

This disaggregation of ratios in the Du Pont model highlights the importance of asset rotation as the key to achieving total return on invested capital. For the company's ability to generate net profit, asset turnover is as important as return on sales.

The second version of the formula – a modified Du Pont diagram, concerns the return on equity. The profitability of assets is related to the so-called capital multiplier.

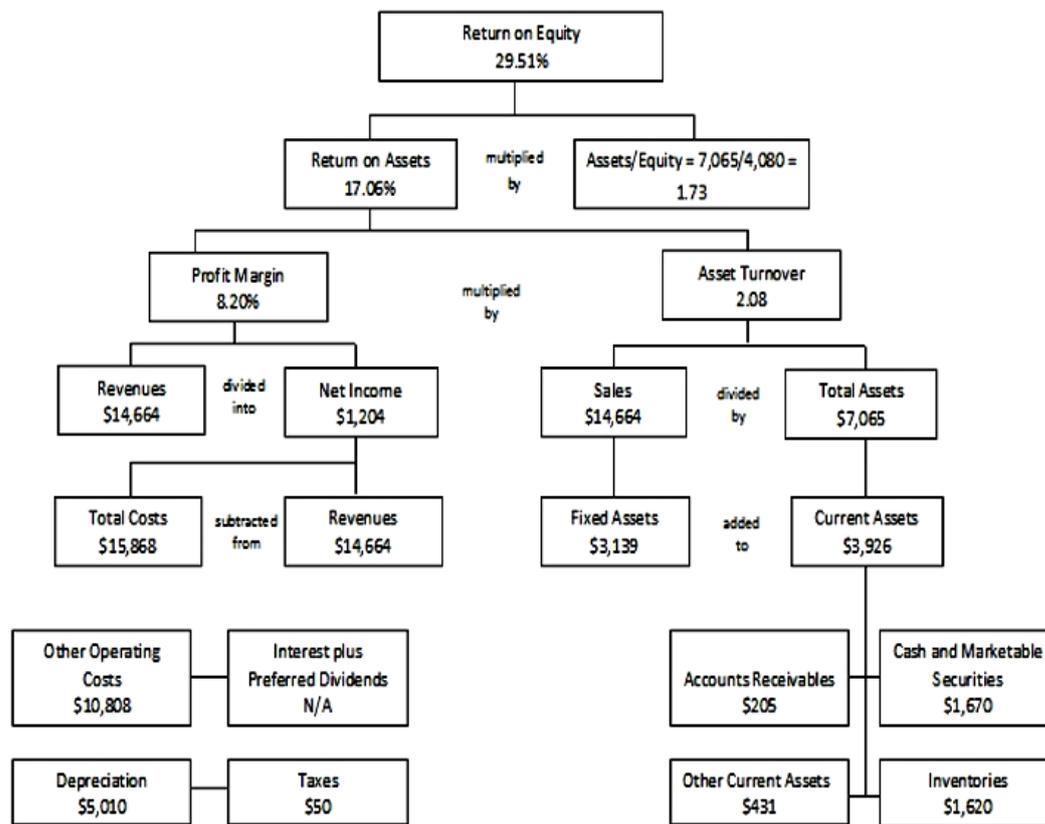


Figure 5. Du Pont diagram (pyramidal system)

From the analysis of the Du Pont model, it can be clearly concluded that the ROE is influenced by many factors, such as: net income (profit), sales (revenues), structure of assets, using equity and debt.

The compilation of the pyramidal system of financial indicators makes it possible to:

- explain the directions and possibilities of achieving the goal specified in the system using a synthetic indicator,
- determine the place of individual indicators in the system, i.e. indirectly in the economic reality of an enterprise,
- quantify the interrelationships between partial indices and the relationship between these indices and the synthetic index.

Conclusions that can be drawn by using the Du Pont formula:

- There is a close relationship between the ROE and ROA indicators.
- The differences between them are determined by the method of financing the property, which is represented by the relation – (assets/equity).
- The capital multiplier increases with the amount of share of debt in financing assets.
- This formula allows for the presentation of the mutual relations between the return on equity and the return on sales and the efficiency of an enterprise (the method of financing assets).
- A company can achieve the same profitability with different combinations of profit margin, asset turnover, and capital structure.
- The essence of the analysis with the use of the Du Pont formula is the hierarchical and interpretative ordering of the already existing indicators and indicating the relationships between them.

## 6. Models of bankruptcy prediction – the discriminant analysis

The Altman model is the best known and most popular model of bankruptcy prediction around the world. Edward Altman, a New York professor of finance, is considered a pioneer in using discriminatory methods to predict bankruptcy. In 1968, he developed his first model, called the Altman model/indicator or the Z score model/indicator.

This model was created on the basis of a discriminatory analysis carried out on the basis of 66 enterprises, of which 33 were in good financial condition and 33 were at risk of bankruptcy. While working on the model, E. Altman selected 22 indicators in 5 groups (liquidity, profitability, financial support, solvency, turnover), taking as the basis for the selection the possibility of assessing the financial situation of the enterprise. In the course of further research, the number of indicators was limited to 5, which, in his opinion, best reflected the financial situation of the enterprise.

These 5 indicators include:

$X1$  = working capital/assets,

$X2$  = retained earnings/assets,

$X3$  = earnings before interest and tax/assets,

$X4$  = market value of the enterprise/accounting value of debt,

$X5$  = sales revenue/assets.

For all these indicators, in the process of multivariate discriminant analysis, he selected appropriate coefficients, which resulted in the following formula:

$$Z = 1.2 (X1) + 1.4 (X2) + 3.3 (X3) + 0.6 (X4) + 0.999 (X5)$$

The above formula is the basic Altman model, in which the result (the calculated Z value) determines the degree of bankruptcy risk.

Value of the Z index (the level of bankruptcy risk):

– <1.81 – very high,

– 1.81 – 2.99 – undefined (the so-called ‘grey area’),

– > 2.99 minimal.

The second model was created by Gordon L.V. Springate in 1978 and, like the Altman model, is based on multivariate discriminant analysis. The Z function in this model takes the following form:

$$Z = 1.03 A + 3.07 B + 0.66 C + 0.4 D$$

Where:

$A$  = net working capital/total assets,

$B$  = profit before tax and interest/total assets,

$C$  = profit before tax/current liabilities,

$D$  = net sales/total assets.

The value of the Z function, which is lower than 0.862, indicates the bankruptcy of a company, while the Z value, which is slightly higher than 0.862, means that there is a significant risk of bankruptcy in an enterprise. Only the Z values significantly deviating from 0.862 mean that there are no problems related to solvency of a company.

**Sample tasks:**

**Task 1**

Complete the balance sheet for the ABC Industries for the fiscal year 2020 using the information below it.

The balance sheet of ABC Industries as of 31<sup>st</sup> December 2020 (in USD)

Cash	28 000.00
Marketable securities	30 000.00
Accounts receivable	
Inventories	
<i>Total current assets</i>	
<i>Net fixed assets</i>	
<b>Total assets</b>	
Accounts payable	150 000.00
Notes payable	
Accruals	10 000.00
<i>Total current liabilities</i>	
Long-term debt	
Stockholder's equity	700 000.00
<b>Total liabilities and stockholders' equity</b>	

The following financial data for 2020 is also available:

- ✓ Sales in total: USD 1 600 000.00.
- ✓ The gross profit margin was 15%.
- ✓ Inventory turnover was 7.0.
- ✓ There were 360 days that year.
- ✓ The average collection period was 30 days.
- ✓ The current ratio was 1.4.
- ✓ The total asset turnover ratio was 1.1.
- ✓ The debt ratio was 55%.

**Task 2**

Using the following ratio information for DWM Company, construct the Du Pont system of analysis DWM.

Years	2018	2019	2020
DWM			
Financial leverage multiplier	1.72	1.75	1.80
Net profit margin	0.12	0.15	0.11
Total asset turnover	2.15	2.18	1.98
Industry averages			
Financial leverage multiplier	1.60	1.65	1.63
Net profit margin	0.08	0.10	0.12
Total asset turnover	2.09	2.12	2.15

**Task 3**

Calculate the following ratios for the company IMG using its financial statements:

- Current Ratio
- Quick Ratio
- Receivables Turnover and Days' Receivables
- Inventory Turnover and Days' Inventory
- Fixed Assets Turnover
- Total Assets Turnover
- Debt Ratio
- Debt to Equity Ratio
- Equity Multiplier
- Profit Margin (ROS)
- Return on Assets (ROA)
- Return on Equity (ROE)
- Price/Earnings Ratio
- Market-to-Book Ratio
- EPS and Book Value Per Share

Income Statement (in USD million)	
Sales	350
Cost of Goods Sold	150
Administrative Expenses	20
Depreciation	30
<b><i>Earnings Before Interest and Taxes</i></b>	<b>150</b>
Interest Expense	5
<b><i>Taxable Income</i></b>	<b>145</b>
Taxes	5
<b><i>Net Income</i></b>	<b>140</b>

Dividends	0
Addition to Retained Earnings	140
<b>Other Information</b>	
Number of Shares Outstanding (in million)	200
Price per Share	5,92

Balance Sheet (in USD million)			
Assets		Liabilities and Owners' Equity	
Current Assets		Current Liabilities	
Cash	100	Accounts Payable	300
Accounts Receivable	300	Notes Payable	100
Inventory	200	<b>Total Current Liabilities</b>	<b>400</b>
<b>Total Current Assets</b>	<b>600</b>	Long-Term Liabilities	
		Long-Term Debt	300
Fixed Assets		<b>Total Long-Term Liabilities</b>	<b>300</b>
Property, Plant, and Equipment	1000	<i>Owners' Equity</i>	
Less Accumulated Depreciation	100	Common Stock	400
<b>Net Fixed Assets</b>	<b>900</b>	Capital Surplus	300
<b>Total Assets</b>	<b>1500</b>	Retained Earnings	100
		<b>Total Owners' Equity</b>	<b>800</b>
		Total Liab. and Owners' Equity	1500

**Sample audit questions:**

1. Characterise the functions of financial statements.
2. Describe the features of financial reporting.
3. Describe the vertical and horizontal analysis of the balance sheet.
4. What does the preliminary balance sheet analysis cover?
5. Present the asset and capital analysis ratios.
6. What is the golden and silver balance rule in the context of the financial analysis?
7. Explain the preliminary analysis of income statement about.
8. Present and characterise the indicators of the structure, sufficiency, and efficiency of cash.
9. Characterise the indicators of liquidity, activity, debt, and profitability.
10. Characterise the pyramidal system of financial indicators (the Du Pont system).

**Laboratory instructions:** During the project classes, students assess the financial condition of the company in accordance with the project plan below.

## **Plan of the project**

1. *Characteristics of the company:*
  - 1.1 Characteristics of the industry, brief history of the company,
  - 1.2 The main object of activity. Information about basic products, goods or services,
  - 1.3 Characteristics of sales and supply markets.
2. *Consolidated Annual Financial Reports (5 years)*
  - 2.1 Balance sheet,
  - 2.2 Income statement,
  - 2.3 Cash flow.
3. *Analysis of the assets:*
  - 3.1 The assets structure ratios,
  - 3.2 Structure of fixed assets,
  - 3.3 Structure of current assets.
4. *Analysis of the capital:*
  - 4.1 Analysis of capital structure,
  - 4.2 Structure of equity,
  - 4.3 Structure of debt.
5. *The relationship between the structure of assets and capital:*
  - 5.1 Capital and asset analysis,
  - 5.2 Analysis of working capital.
6. *Analysis of revenues, costs and results (income):*
  - 6.1 Revenues, their dynamics and structure,
  - 6.2 Costs, their dynamics and structure,
  - 6.3 Structure of income.
7. *Cash flow analysis:*
  - 7.1. The dynamics of streams,
  - 7.2 Indicative cash flow analysis.
8. *Ratio analysis of the financial efficiency of the company:*
  - 8.1 Liquidity,
  - 8.2 Asset Management,
  - 8.3 Profitability,
  - 8.4 Leverage,
  - 8.5 Market value.
9. *The Analysis of the Du Pont system.*
10. *Models of bankruptcy.*

Lecturer:

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