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v Českých Budějovicích  
University of South Bohemia  
in České Budějovice

# FINANCIAL STATEMENTS

## - Study Text



### **ANALYSIS OF FINANCIAL STATEMENTS: FINANCIAL ANALYSIS – BASIS METHODS**

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## 1 DEFINITIONS

- Financial analysis is the selection, evaluation, and interpretation of financial data and other pertinent information to assist in evaluating the operating performance and financial condition of company.
- Financial analysis is used to evaluate economic trends, set financial policy, build long-term plans for business activity, and identify projects or companies for investment. This is done through the synthesis of financial numbers and data.
- Financial analysis is the process of evaluating businesses, projects, budgets and other finance-related entities to determine their performance and suitability. Typically, financial analysis is used to analyze whether an entity is stable, solvent, liquid or profitable enough to warrant a monetary investment.

Financial analysis uses financial or other information to make recommendations and decisions. One of the most common ways to analyze financial data is to calculate ratios from the data to compare against those of other companies or against the company's own historical performance.

Financial analysis can be conducted in both corporate finance and investment finance settings. In corporate finance, the analysis is conducted internally, using such ratios as net present value and internal rate of return to find projects worth executing. A key area of corporate financial analysis involves extrapolating a company's past performance, such as gross revenue or profit margin, into an estimate of the company's future performance. This allows the business to forecast budgets and make decisions based on past trends, such as inventory levels.

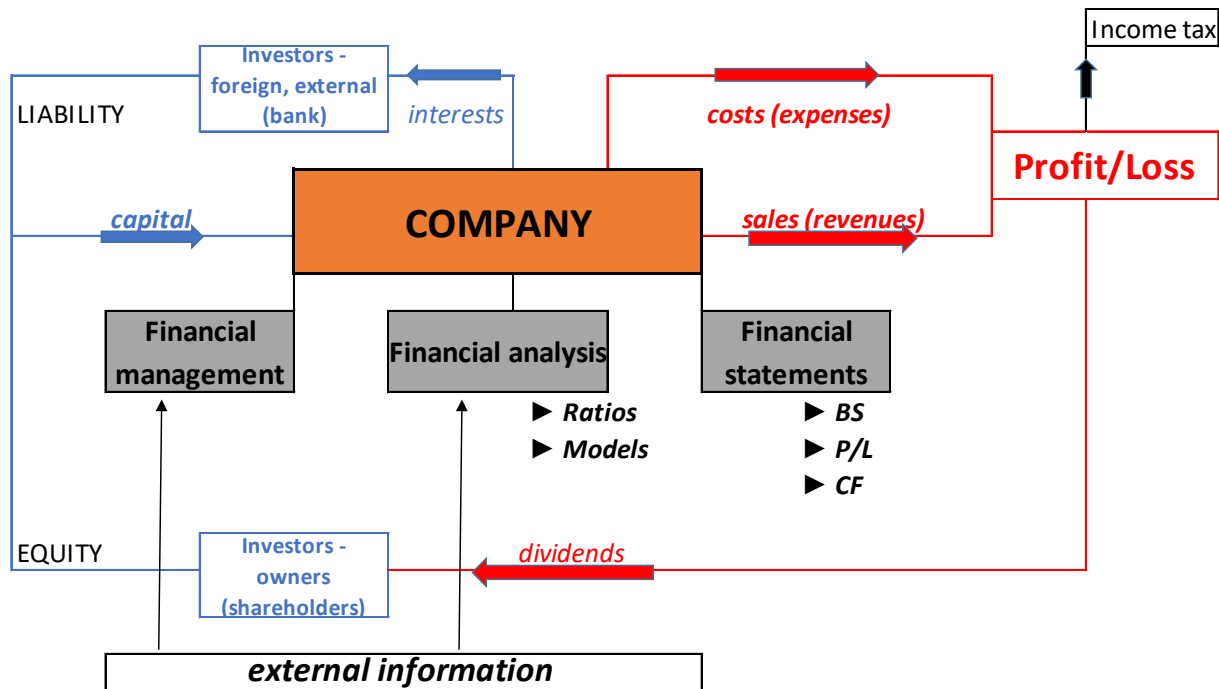
Corporate finance is the area of finance dealing with the sources of funding and the capital structure of corporations, the actions that managers take to increase the value of the firm to the shareholders, and the tools and analysis used to allocate financial resources. The primary goal of corporate finance is to maximize or increase shareholder value. Although it is in principle different from managerial finance which studies the financial management of all firms, rather than corporations alone, the main concepts in the study of corporate finance are applicable to the financial problems of all kinds of firms.

Financial management overlaps with the financial function of the accounting profession. However, financial accounting is the reporting of historical financial information, while financial management is concerned with the allocation of capital resources to increase a firm's value to the shareholders.

The operating performance of a company is a measure of how well a company has used its resources – its assets, both tangible and intangible – to produce a return on its investment. The financial condition of a company is a measure of its ability to satisfy its obligations, such as the payment of interest on its debt in a timely manner.

The analyst must select the pertinent information, analyze it, and interpret the analysis, enabling judgments on the current and future financial condition and operating performance of the company.

## Financial flows in the company



The objective of the financial analysis is as a usually:

- assessment of the impact of internal and external business environment
- analysis of previous development
- comparison of analysis results in space
- analysis of relations between indicators (e.g. pyramidal decompositions)
- providing information for decision-making in the future
- analysis of variants of future development and selection of the most suitable variant
- interpretation of the outcome, including a proposal in the financial planning and management

## 2 USERS OF FINANCIAL ANALYSIS

When interpreting financial statements, it is important to ascertain who are the users of accounts and what information they need:

- shareholders and potential investors – primarily concerned with receiving an adequate return on their investment, but it must at least provide security and liquidity
- suppliers and lenders – concerned with the security of their debt or loan
- management – concerned with the trend and level of profits, since this is the main measure of their success.

The people who use accounting information to make decision fall into two categories:

1. Internal users: are owners, managers, employees and other parties who are directly connected with a company.
  - Owners and managers require financial statements to make important business decisions that affect its continued operations. Financial analysis are then performed on these statements to provide management with a more detailed understanding of the figures. These statements are also used as part of management's report to its stockholders, as it form part of its Annual Report.

- Employees also need these reports in making collective bargaining agreements with the management, in the case of labour unions or for individuals in discussing their compensation, promotion and rankings.
2. External users: are potential investors, banks, government agencies and other parties who are outside the business but need financial information about the business for a diverse number of reasons.
- Those who invest or may invest in a business, and acquire a part ownership are interested in its past success and its potential earnings. A thorough study of a company's financial statements helps potential investors judge the prospects for a profitable investment: After investing in a company, investors must continually review their commitment, again by examining the company's financial statements. Prospective investors make use of financial statements to assess the viability of investing in a business. Financial analyses are often used by investors and is prepared by professionals (financial analysts), thus providing them with the basis in making investment decisions.
  - Financial institutions (banks and other lending companies) use them to decide whether to grant a company with fresh working capital or extend debt securities (such as a long-term bank loan or debentures) to finance expansion and other significant expenditures. Most companies borrow money for both long- and short-term operating needs. Creditors, those who lend money or deliver goods and services before being paid, are interested mainly in whether a company will have the cash to pay interest charges and repay debt at the appropriate time. They study a company's liquidity and cash flow as well as its profitability. Banks, finance companies, mortgage companies, securities firms, insurance firms, suppliers, and other lenders must analyze a company's financial position before they make a loan.
  - Government entities (tax authorities) need financial statements to ascertain the propriety and accuracy of taxes and other duties declared and paid by a company. Government at every level is financed through the collection of taxes. Under federal, state, and local laws, companies and individuals pay many kinds of taxes, including federal, state, and city income taxes, social security and other payroll taxes, excise taxes, and sales taxes. Each tax requires special tax returns and often a complex set of records as well. Proper reporting is generally a matter of law and can be very complicated. The Internal Revenue Code, for instance, contains thousands of rules governing the preparation of the accounting information used in computing federal income taxes.
  - Media and the general public are also interested in financial statements for a variety of reasons.
  - Regulatory Agencies - most companies must report to one or more regulatory agencies at the federal, state, and local levels. Companies that are listed on a stock exchange also must meet the special reporting requirements of their exchange.

### 3 DATA OF FINANCIAL ANALYSIS – ACCOUNTING, FINANCIAL STATEMENTS

Accounting is a very old discipline. Forms of it have been essential to commerce for more than five thousand years. Accounting, in a version close to what we know today, came into widespread use in the 14th century, especially in Italy, where it was instrumental to the development of shipping, trade, construction, and other forms of commerce. This system of double-entry bookkeeping was documented by the famous Italian mathematician, scholar, and philosopher Fra Luca Pacioli (1445-1517).

Today's accountant focuses on the ultimate needs of decision makers who use accounting information, whether those decision makers are inside or outside the business. Accounting is an information system that measures processes, and

communicates financial information about identifiable economic entity. An economic entity is a unit that exists independently; for example: a business, a hospital, or a governmental unit.

Accounting provides a vital service by supplying the information that decision makers need to make reasoned choices among alternative uses of scarce resources in the conduct of business and economic activities. As shown in Figure 1, accounting is a link between business activities and decision makers. First, accounting measures business activities by recording data about them for the future use. Second, the data are stored until needed and then processed become useful information. Third, the information is communicated, through reports, to decision makers. We can say, that data about business activities are input to the accounting system and that useful information for decision makers is the output.

**Financial statements** are the primary means of communicating important accounting information to users. It is helpful to think of these statements as a model of the business enterprise because they show the business in financial terms. As is true of all models, however, financial statements are not perfect pictures of the reality, but rather the accountant's best effort to represent what is real.

For large corporations, these statements are often complex and may include an extensive set of notes to the financial statements and management discussion and analysis. The notes typically describe each item on the balance sheet, income statement and cash flow statement in further detail. Notes to financial statements are considered an integral part of the financial statements.

A complete set of financial statements comprises:

- BALANCE SHEET (IFRS: Statement of financial position)
- PROFIT/LOSS STATEMENT – INCOME STATEMENT (IFRS:
  - Statement of profit or loss and other comprehensive income, or
  - Statement of profit or loss plus a statement showing other comprehensive income)
- NOTES (APPENDIX) TO FINANCIAL STATEMENTS (IFRS: Accounting policies and explanatory notes)
- STATEMENT OF CASH FLOWS
- STATEMENT OF CHANGES IN EQUITY

## 4 CLASSIFICATION OF FINANCIAL ANALYSIS

There are two types of financial analysis: technical analysis and fundamental analysis.

- Technical analysis may appear complicated on the surface, but it boils down to an analysis of supply and demand in the market to determine where the price trend is headed. In other words, technical analysis attempts to understand the market sentiment behind price trends rather than analyzing a security's fundamental attributes. If you understand the benefits and limitations of technical analysis, it can give you a new set of tools or skills that will enable you to be a better trader or investor over the long-term.
- Fundamental analysis involves analyzing a company's financial statements to determine the fair value of the business, while technical analysis assumes that a security's price already reflects all publicly-available information and instead focuses on the statistical analysis of price movements. Fundamental analysis more – see on figure.

<b>Analysis of absolute indicators</b>	<b>Ratios analysis</b>		<b>Analysis of systems of indicators / (Financial models / Bankruptcy models)</b>
• Horizontal analysis	• Profitability ratios	= Performance	• DuPont model
			• Altman Z-score (Z-score formula)
• Vertical analysis	• Activity ratios	= Stability, Position	• Taffler model
	• Liquidity ratios		• IN model (Neumaier) <b>CZ</b>
	• Debt ratios (financial leverage, gearing)		• Clobulos and Grammatikos <b>GR</b>
	• Market ratios		• Theodossiou and Papoulas <b>GR</b>

#### 4.1 Horizontal Analysis

A horizontal analysis, or trend analysis, is a procedure in fundamental analysis in which an analyst compares ratios or line items in a company's financial statements over a certain period of time. The analyst uses his discretion when choosing a particular timeline; however, the decision is often based on the investing time horizon under consideration.

Horizontal analysis allows investors and analysts to determine how a company has grown over time. Additionally, analysts and investors could use horizontal analysis to compare a company's growth rates in relation to its competitors and industry.

Horizontal analysis looks at the trend of financial statements over multiple periods, using a specified base period or year-over-year change in each line item. With horizontal analysis, we look across the statements.

#### Example

##### Horizontal analysis: Balance sheet – assets

<b>Item</b>	<b>05/04</b>	<b>06/05</b>	<b>07/06</b>	<b>08/07</b>	<b>09/08</b>	<b>10/09</b>	<b>Ø growth</b>
<b>ASSETS - TOTAL</b>	<b>1.09</b>	<b>0.98</b>	<b>1.12</b>	<b>1.02</b>	<b>0.95</b>	<b>1.05</b>	<b>1.0330</b>
<b>Fixed assets</b>	<b>1.09</b>	<b>0.98</b>	<b>1.10</b>	<b>1.04</b>	<b>0.97</b>	<b>1.07</b>	<b>1.0443</b>
- intangible assets	9.88	0.84	1.30	0.97	1.05	0.85	<b>1.4540</b>
- tangible assets	1.09	0.99	1.11	1.05	0.98	1.07	<b>1.0456</b>
- financial assets	0.95	0.94	1.03	0.98	0.89	1.25	<b>1.0010</b>
<b>Current assets</b>	<b>1.10</b>	<b>0.96</b>	<b>1.16</b>	<b>0.98</b>	<b>0.92</b>	<b>1.01</b>	<b>1.0164</b>
- inventory	1.04	0.95	1.10	1.03	0.95	0.96	<b>1.0064</b>

- long-term receivables	0.88	1.13	1.20	0.45	0.91	0.73	<b>0.8419</b>
- short-term receivables	1.02	0.95	1.21	1.00	0.76	1.07	<b>0.9909</b>
- financial assets	1.68	0.99	1.26	0.81	1.10	1.11	<b>1.1278</b>
<b>Accruals</b>	<b>0.84</b>	<b>1.52</b>	<b>0.80</b>	<b>1.00</b>	<b>0.87</b>	<b>0.87</b>	<b>0.9585</b>

Source: Authors' research of the sample of farms

The fact of increasing the growth rate of the value of assets since 2004 is definitely positive. It increased from 107 million CZK to 130 million in the last year of our research (by up to 3.3%). Development of the assets is undoubtedly given by encouraging investment from the Ministry of Agriculture and the European Union through the Operational Programme of Agriculture. To a large extent, however, it is the modernization of existing assets, and therefore there is no significant increase of the asset value. The proof is the highest growth rate of fixed assets of all items of assets (4.4%).

## 4.2 Vertical analysis

With this method of analysis of financial statements, we will look up and down the statement (hence, "vertical" analysis) to see how every line item compares for example to assets, revenues, etc. as a percentage.

The balance sheet and income statement, usually in a simplified format, can be presented in for example in € amounts and then standardized as percentages. In common-size analysis, all balance sheet items are stated as a percentage of total assets and all income statement items as a percentage of sales or total revenues. Abbreviated financial statements for several years and across firms in the industry can provide a useful overview of the operating performance and financial health of the firm. Common-size analysis can be used as a useful starting point for a firm's operations and financial position.

### Example

#### Vertical analysis: Balance sheet - assets

<b>Item</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>ASSETS - TOTAL</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>
<b>Fixed assets</b>	<b>59.93%</b>	<b>60.02%</b>	<b>60.42%</b>	<b>59.53%</b>	<b>61.01%</b>	<b>62.52%</b>	<b>63.94%</b>
- intangible assets	0.04%	0.38%	0.33%	0.38%	0.36%	0.40%	0.33%
- tangible assets	56.78%	56.94%	57.49%	56.75%	58.34%	59.96%	61.04%
- financial assets	3.11%	2.71%	2.61%	2.40%	2.30%	2.16%	2.57%
<b>Current assets</b>	<b>39.03%</b>	<b>39.18%</b>	<b>38.35%</b>	<b>39.59%</b>	<b>38.14%</b>	<b>36.69%</b>	<b>35.41%</b>
- inventory	23.44%	22.39%	21.77%	21.47%	21.82%	21.82%	20.04%
- long-term receivables	0.44%	0.35%	0.41%	0.44%	0.19%	0.18%	0.13%
- short-term receivables	11.43%	10.67%	10.36%	11.15%	10.96%	8.71%	8.90%
- financial assets	3.74%	5.76%	5.81%	6.53%	5.17%	5.98%	6.34%
<b>Accruals</b>	<b>1.02%</b>	<b>0.78%</b>	<b>1.22%</b>	<b>0.87%</b>	<b>0.85%</b>	<b>0.78%</b>	<b>0.65%</b>

Source: Authors' research of the sample of farms

Assets of the average farm are made up of roughly 61% of the fixed assets with 7% of land in average, implying that the



most of farm land is leased. At about 65% of long-term assets consist of buildings and 20% separate movable items. A specific range of property of farms is livestock – animals. Adult animals are only at about 7%. The most important problem to deal with is their evidence as sometimes they are reported as inventory and sometimes as depreciated fixed assets. By the Regulation No. 500/2002 Coll., Implementing certain provisions of Act No. 563/1991 Coll., On accounting, the following animals are included in inventory: young breeding animals, animals for fattening, fur-bearing animals, fish, bees, - flocks of chickens, ducks, turkeys, guinea fowl and geese for fattening. Adult animals (basic herd and draughts), breeding livestock in categories of cattle, horses, pigs, sheep, goats and geese, are recorded as tangible assets. Basic herd animals of other economically utilized breeds are also included by the unit's decision.

## 4.3 Ratio analysis

Financial ratios = a tool of financial analysis. Financial ratio is simply an expression of the relation between two financial statements accounts and financial ratio analysis is the investigation of a company's condition and performance using one or more of these ratios. We use these ratios to get a measure of the relative value of one account to another.

A number of ratios can be calculated to help interpret the financial statements. A ratio has a numerator and a denominator, which converts the financial data to a percentage. This provides one approach to standardizing financial information for useful comparisons.

Analysts will, in practice, be limited in the analysis that can be performed by the amount of information available. They are unlikely to have access to all the facts which are available to a company's management.

The major ratio categories and the questions they attempt to answer are:

- Liquidity-Does the company have enough cash and current assets to pay obligations as they come due?
- Activity-How efficient are the operations of the company?
- Leverage-What is the mix of equity to debt?
- Performance-How profitable is the company?

In a report, you are often asked to analyse specific sections. The broad categories are:

- Performance – This looks largely at the statement of profit or loss and associated ratios, such as profit margins, returns on capital employed and net asset turnover. This section looks at the results that the business has generated in the year.
- Position – This looks at the statement of financial position, and the associated ratios. This could be broken down further into short-term liquidity, looking at working capital, and long-term solvency, looking at levels of debt.
- Investor – This looks at items that would specifically matter to investors. This will cover items such as the share price, dividends and earnings.

Each ratio provides a somewhat different analysis. A company may have substantial current assets but little cash. A company with high leverage may or may not suggest a red flag. High leverage increases business and default risk, but it improves return on equity. High leverage could result from too many long-term bonds or high accounts payable. These would be interpreted differently.

Three significant points relate to ratio analysis:

1. the ratios overlap, so a red flag in one area will likely relate to red flags in other areas;
2. a thorough ratio analysis must be done, although most ratios end up in a normal range that needs little further





- analysis;
3. the importance of specific ratios differs based on the objectives of the financial analysis (e.g., credit versus investment decision), industry involved (e.g., banks behave differently from high tech or automobile companies), and other factors (e.g., relative interest rates at the time of analysis).

Financial ratios for the most recent year (and most recent quarter when relevant) are the most important, since this represents the latest financial data available. As with other techniques, comparisons over time and with other companies and industries are useful, since ratios are evaluated in some context.

The value of a given ratio, however, is rarely informative. Financial ratios provide information when compared to other financial ratios and standards.

Once we calculate a financial ratio, we need to put it in perspective with the other aspects of the company's financial condition and performance, both over the time and comparison with other, leading companies in the same industry.