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v Českých Budějovicích
University of South Bohemia
in České Budějovice

Managerial Accounting

Theory and Practice

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These study materials summarize the basic knowledge related to managerial accounting. They present the main theoretical framework, with a strong emphasis on the practical application of the methods. The text is supported by numerous examples and exercises. The materials are primarily intended for international students of the Faculty of Economics at the University of South Bohemia in České Budějovice at the bachelor's level of study. They may also be useful for Czech students who wish to study the subject of Managerial Accounting in English.

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Preface

The *Managerial Accounting – Theory and Practice* textbook contains both theoretical explanations and practical examples designed to support classroom teaching and self-study of the course Managerial Accounting, which is part of the study programs at the Faculty of Economics of the University of South Bohemia in České Budějovice. The material is primarily intended for international students, but it can also be used by students in other economic study programs.

The aim of the course is to build on students' basic knowledge of accounting and economics and to extend it with specific methods and tools of managerial accounting. The emphasis is placed on the use of accounting information for business management, financial decision-making, and strategic planning. The textbook helps students understand key principles that are essential for effective cost control, budgeting, and performance evaluation.

Each chapter provides a theoretical overview, practical problem-solving tasks, and applications of theoretical concepts. The theoretical sections offer the necessary foundational knowledge, while strong emphasis is placed on the practical application of the methods presented. Selected chapters include review questions to support understanding of the topics. The material also contains solutions to selected examples, which facilitates self-study and exam preparation.

The structure of the chapters follows the thematic areas covered in the course and is based on the required and recommended literature. The textbook therefore serves as a fundamental teaching resource for successful completion of the course.

Autor

1 Introduction to managerial accounting



Managerial accounting helps managers make decisions by providing relevant financial and non-financial information. Unlike financial accounting, which is primarily intended for users outside the company, managerial accounting is used internally to support the management of business operations. It focuses on providing information that is useful for planning, controlling, and decision-making within the organization.

Key activities in managerial accounting include budget planning, cost analysis, performance measurement, and financial forecasting. These activities help managers evaluate alternative courses of action, improve operational efficiency, and ensure that organizational goals are achieved. This chapter introduces the basic concepts, methods, and information systems used in managerial accounting.



Chapter objectives

The objectives of this chapter are to:

- divide accounting information into three subsystems: financial, tax, and managerial accounting,
- identify user requirements for accounting information,
- understand the content and objectives of managerial accounting,
- determine the position of the controller within the corporate hierarchy,
- compare cost-performance accounting with responsibility accounting,
- analyze internal company processes and departments,

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- distinguish between departments of main, service, administrative, and special activities,
- explain the organization of accounting information in managerial accounting,
- compare single-entry and double-entry accounting systems.

1.1 Basic terminology according to CIMA (2005)

Account

A structured record of transactions in monetary terms, kept as part of an accounting system.

Accountancy

The practice of accounting.

Accounting

- the classification and recording of monetary transactions,
- the presentation and interpretation of the results of those transactions in order to assess performance over a period and the financial position at a given date,
- the monetary projection of future activities arising from alternative planned courses of action.

Accounting period

The time period covered by the accounting statements of an entity. There may be different time periods for different accounting statements, e. g. management accounts may be for four or five week periods to coincide with a thirteen week financial accounting period.

Commitment accounting

A method of accounting which recognises expenditure as soon as it is contracted.

Control

The ability to direct to financial and operating policies of an entity with a view to gaining economic benefits from its activities.

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Performance measurement

The process of assessing the proficiency with which a reporting entity succeeds by the economic acquisition of resources and their efficient and effective deployment in achieving its objectives.

Services

Value-creating activities which in themselves do not involve the supply of physical product.

1.2 Definition of managerial accounting

Accounting is a system that provides information about business activities in monetary terms. It expresses the value of business processes and economic events. The purpose of accounting is to present the current state and changes in assets, equity, liabilities, revenues, costs, profits, incomes, and expenses. Accounting provides a true and fair view of the business and follows specific principles and methods to ensure that information is complete, reliable, and comparable over time and across different businesses.

Accounting information helps to measure the financial position, performance, and changes in the financial position of an enterprise. Financial position is presented in the balance sheet and is influenced by the amount and structure of assets and capital. These factors also affect the company's liquidity and solvency. Information about performance is presented in the profit and loss statement and makes it possible to assess how efficiently the company uses its resources to generate profit, which is important for future development. Information about changes in the financial position, particularly cash flows, shows the company's ability to generate and use cash. This information links the balance sheet and the profit and loss statement. Together, all three financial statements provide a comprehensive basis for financial analysis.

While accounting in general provides a broad picture of the financial situation of a company, managerial accounting focuses more specifically on information that supports internal management decisions. It builds on data from financial accounting but adapts it to the needs of managers, especially for planning, control, and evaluation of future activities.

Definition of managerial accounting (Drury, 2023):

„Management accounting or managerial accounting is the process of identifying, analyzing, recording and presenting financial information that is used for internally by the management for planning, decision making and control.“

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1.3 Accounting information subsystems and users of accounting information

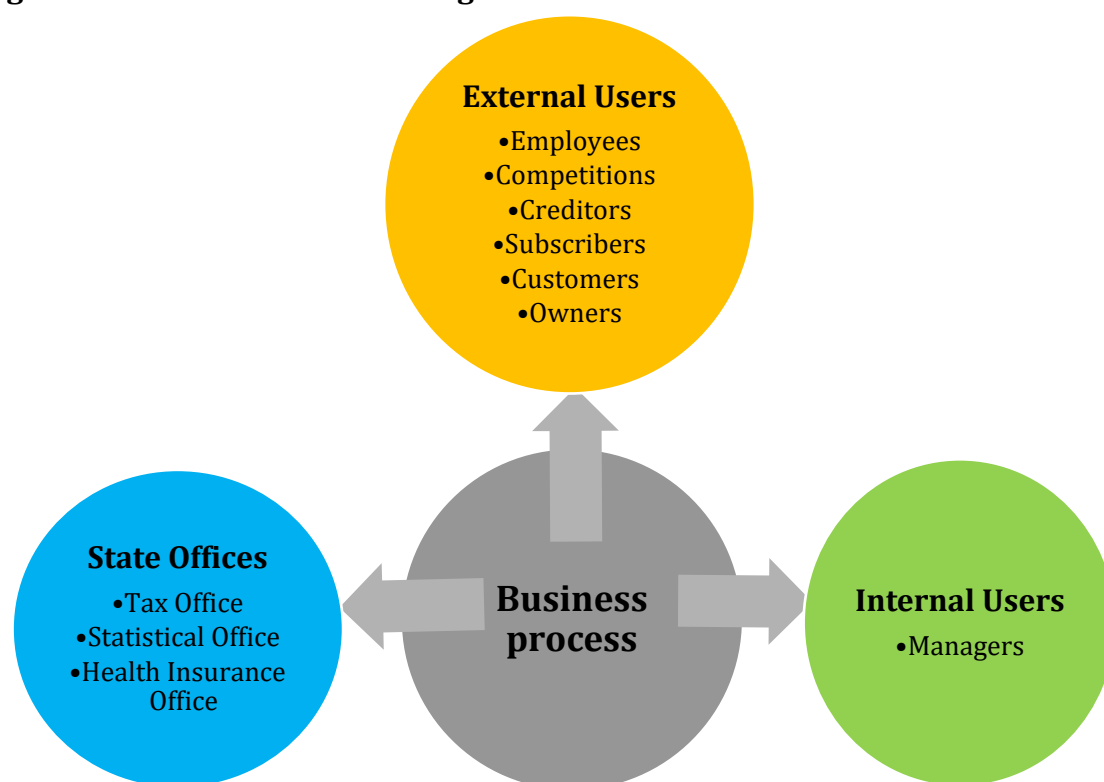
Accounting information is divided into three main subsystems: financial accounting, tax accounting, and managerial accounting. These subsystems differ in their content, objectives, and the type of information they provide. The differences arise from the nature of the business, the way business performance is measured, and, above all, from the specific information needs of individual users.

From a managerial perspective, a business is understood as an entity that manages the entire business process, from the use of resources to the creation of outputs. Business performance can be measured by comparing inputs, such as costs or other economic sacrifices, with outputs, which represent benefits or results achieved. For this reason, accounting information used for performance measurement and reporting must be adapted to its purpose. Its content and form depend on who uses the information and what kind of managerial or economic decisions the information is intended to support.

Economic results are important to many different groups that have an interest in the company. Capital owners are primarily interested in the value and return of their invested capital. Managers focus on overall business performance and the efficient use of resources. State authorities, business partners, and employees are also important users of accounting information. Employees, for example, may be interested in the company's ability to provide stable employment, fair wages, good working conditions, opportunities for professional development, and participation in decision-making processes.

Users of accounting information can generally be classified into external users, internal users, and state authorities (see diagram 1). External users mainly rely on information provided by financial accounting, as it offers a standardized and comparable view of the company's financial situation. Internal users, especially managers, primarily use managerial accounting information, which is more detailed, flexible, and focused on internal decision-making. State authorities require accounting information mainly for tax assessment, tax collection, and regulatory purposes.

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Diagram 1: The users of accounting information



Source: own processing

The users of accounting information require different types of information depending on their role and interests. Managers need information that supports decision-making and helps them control and coordinate business activities. Shareholders are primarily interested in information about the value of their investment and the income generated from their shareholding. Employees seek information about the company's ability to meet wage demands, provide job security, and avoid layoffs. Creditors and other providers of loan capital require information about the company's ability to meet its financial obligations in the short and long term. State authorities collect accounting information and require specific data for regulatory, statistical, and taxation purposes.

Based on the type of users, it is possible to distinguish between two main branches of accounting: managerial accounting and financial accounting. Managerial accounting is oriented toward internal users within the organization and is designed to support management in planning, controlling, and decision-making. Financial accounting, on the other hand, is intended for external users outside the organization and provides standardized information about the company's financial position and performance.

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Financial accounting alone does not fully meet the information needs of managers and other internal users. Managers require critical information not only to analyze past performance but also to influence ongoing and future business processes. They need timely and detailed information about what actions should be taken to achieve organizational goals and who is responsible for specific results. The main role of managerial accounting is therefore to collect, classify, analyze, and present information in a way that allows managers to control and manage the relationship between resources consumed and results achieved. By doing so, managerial accounting helps managers influence key economic factors, improve operational efficiency, and strengthen the company’s overall financial position. You can see the differences between financial accounting and managerial accounting in the diagram 2.

Diagram 2: Differences between financial accounting and managerial accounting

Differences in:	Managerial accounting	Financial accounting
Nature of the reports produced	Tend to be specific purpose	Tend to be general purpose
Level of detail	Often very detailed	Usually broad overview
Regulations	Unregulated	Usually subject to accounting regulation
Reporting interval	As short as required by managers	Usually anual
Time horizon	Often based on projected future and past information	Almost always historical
Range and quality of information	Tend to contain financial and non-financial information	Focus only on financial information

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Source: Drury (2023)

Managerial accounting consists of two closely related subsystems: managerial accounting in a narrower sense and cost accounting. Together, these subsystems provide managers with information needed for both short-term and long-term management of the business.

Managerial accounting in a narrower sense focuses mainly on information used for tactical and strategic decision-making. It supports managers in planning future development of the company and evaluating alternative courses of action. In particular, it helps optimize the use of existing capacity without the need for additional investment and supports decisions about future capacity, which are usually connected with long-term investment planning and strategic growth.

Cost accounting, by contrast, primarily provides information for operational management, especially information related to costs. It supports tactical decision-making and is historically older than managerial accounting in a narrower sense. Cost accounting is closely linked not only to cost control but also to the management of revenues, profits, cash inflows and outflows, as well as assets and liabilities. Its main purpose is to measure the costs and benefits of specific outputs, departments, and business processes and to evaluate their contribution to overall business results.

Effective cost management begins with a clear understanding of the cost context. The success of a business depends on its ability to design products and organize processes in a way that meets customer requirements while achieving the highest possible revenue at the lowest possible cost. For this reason, the goal of cost accounting is to identify the causes of costs and to analyze how these costs relate to revenues and profits. In practice, managers do not manage costs directly; instead, they manage the activities and processes that generate those costs.

Within managerial accounting, two management systems can be distinguished that are separate in focus but closely connected in practice: cost-performance accounting and responsibility accounting. Cost-performance accounting provides information on the costs of individual activities and outputs, which is essential for decisions related to production volume, product mix, and cost structure. Responsibility accounting focuses on measuring and evaluating the performance of individual departments or responsibility centers within the company and supports managerial control by assigning responsibility for costs and results.

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1.4 Controlling

Controlling is one of the key management functions, along with planning, organizing, staffing, and directing. It helps identify errors and take corrective actions to minimize variances from standards, ensuring that the organization's goals are achieved.

„Controlling is the measurement and correction of performance in order to make sure that enterprise objectives and the plans devised to attain them are accomplished.“ (Drury, 2023)

Controlling is a key management function that focuses on ensuring that an organization's objectives are achieved efficiently and effectively. It involves monitoring and measuring performance, comparing actual results with planned targets, and taking corrective actions when variances occur. The main purpose of controlling is to minimize differences between planned and actual performance and to ensure that resources are used in the most effective way to achieve the company's goals.

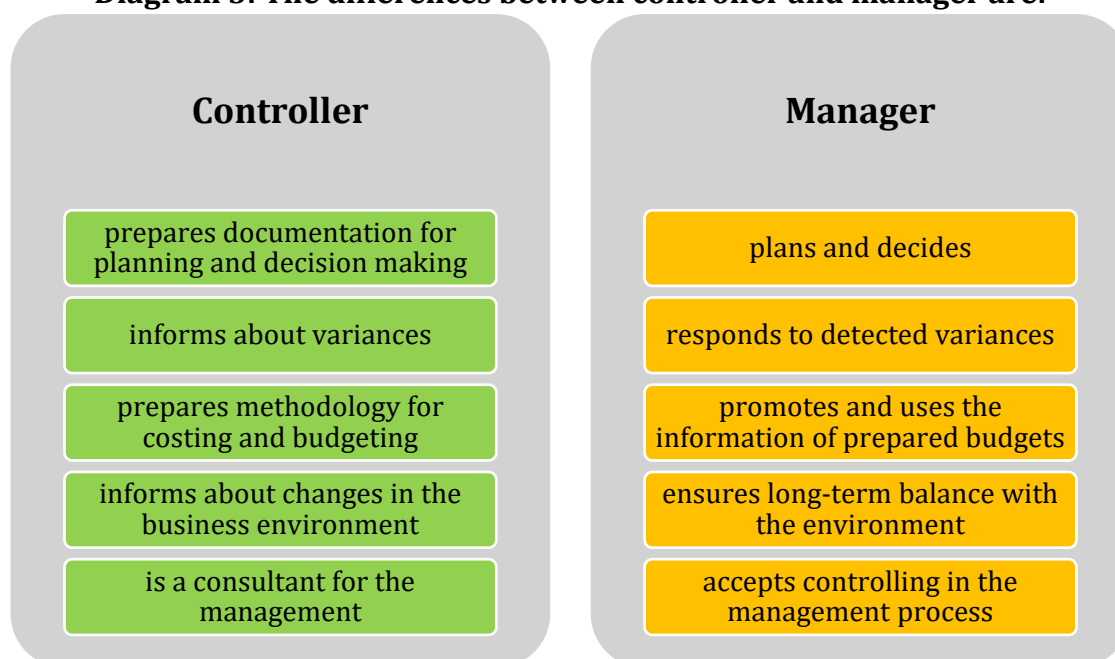
In addition to performance monitoring, controlling also includes activities such as planning, goal setting, budget preparation, and the establishment of standards for performance measurement. Through regular reporting and feedback, controlling supports managers in making informed decisions, allocating resources more efficiently, and adjusting plans and strategies when necessary.

Controlling is not limited to financial areas such as cost control and budgeting. It also covers non-financial aspects of business activities, including processes, efficiency, productivity, and quality. To evaluate performance in these areas, controlling commonly uses key performance indicators (KPIs), which provide measurable criteria for assessing how well the organization is achieving its objectives.

Overall, controlling represents a continuous management process rather than a one-time activity. It helps ensure that the company remains on the planned path toward its strategic goals, improves overall performance, and responds quickly to unexpected changes or variances. By linking planning, control, and feedback, controlling plays a crucial role in managerial decision-making and supports management in continuously improving business performance. The differences between controller and manager are written in the diagram 3.

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Diagram 3: The differences between controller and manager are:



Source: Král et al. (2019)

1.5 Internal departments and their classification

Individual business activities are carried out by specific internal departments. Each department has a clearly defined role, scope of authority, and level of responsibility. The organizational structure of a company determines the hierarchy of departments and the relationships between them, including how they cooperate and depend on one another. For management and accounting purposes, internal departments are usually classified into several basic groups.

Main activity departments

Main activity departments form the core of the business process. They are directly involved in the creation and delivery of products or services intended for external customers. These activities cover the entire process, from research and development through logistics and technical preparation of production to the main production process and, finally, distribution and sales. The primary objective of main activity departments is to generate revenues and contribute directly to the overall profitability of the company.

Service departments

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Service departments provide supporting services to other departments within the company. Their role is not to produce final products for customers, but to ensure that the main activity departments can operate efficiently. Typical examples include transport, repair and maintenance, and information technology departments. Products do not normally pass through service departments directly. Smaller companies often do not establish their own service departments and instead obtain these services from external providers, such as IT support, accounting services, or tax advisory firms.

Administration and management departments

Administration and management departments perform essential management and coordination functions and ensure the overall operation of the company. These departments include, for example, top management and central administrative units. Their activities are not directly linked to individual products, and the costs they generate are therefore considered common or general expenses. The performance of these departments is usually evaluated in relation to the company's overall financial stability and long-term position. Strategic management departments, such as strategic marketing or research and development, are often treated separately, as their costs can be directly linked to specific products or groups of products.

Special departments

Special departments are established to provide social programs and additional services for employees. These may include recreational facilities, fitness centers, housing, or other employee benefit services. Evaluating the costs and benefits of special departments is more complex, as their contribution is not measured directly through revenues or profits. Instead, their value is associated with indirect benefits such as employee satisfaction, loyalty, motivation, and the overall reputation of the company.

1.6 Systems of internal accounting information

1.6.1 Two-Circle System of Accounting Information

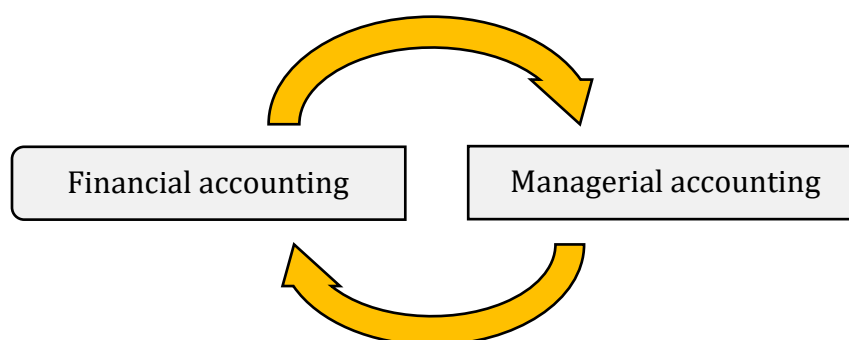
The two-circle system of accounting information is designed to meet the different needs of users by clearly organizing the relationship between financial accounting and managerial accounting and you can see the process in diagram 4. This system places strong emphasis on the content and purpose of accounting information and recognizes that different users require different types of data. As a result, it is characterized by the existence of two relatively separate areas of accounting: financial accounting and managerial accounting. These two areas are linked through the use of connecting accounts and difference accounts.

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Connecting accounts are used to record accounting information that appears in both financial accounting and managerial accounting. Typical examples include connecting accounts related to costs, sales revenues, and inventories. The main purpose of connecting accounts is to ensure consistency and accuracy between the two accounting areas. They help maintain fundamental accounting principles, such as the duality of accounting records and the logical correlation between financial and managerial data.

Difference accounts are used in situations where the values reported in financial accounting differ from those used in managerial accounting. These differences may arise due to different valuation methods or different objectives of the two systems. Difference accounts make it possible to record, monitor, and quantify these differences in a transparent way, ensuring that both accounting systems remain internally consistent and comparable.

Diagram 4: Two-circle system of accounting information



Source: Král et al. (2019), own processing

1.6.2 One-Circle System of Accounting Information

The one-circle system of accounting information is based on a unified approach that aims to satisfy the information needs of all users within a single accounting system. In this system, financial accounting and managerial accounting are integrated into one common framework, which simplifies the overall structure of accounting and supports efficient use of accounting data across the organization and you can see the process in diagram 5.

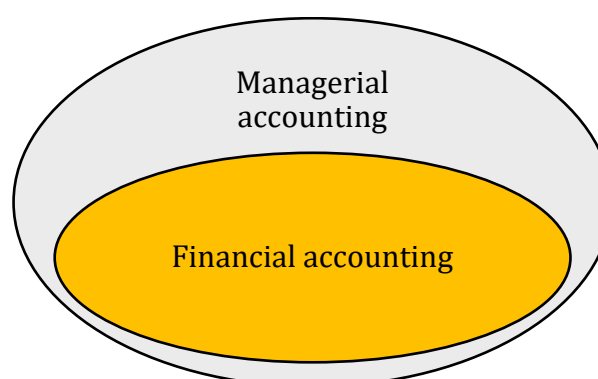
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The key characteristic of the one-circle system is the use of a single set of accounting records for both financial and managerial purposes. Different user requirements are addressed through analytical evidence, which consists of detailed analyses, reports, and breakdowns of accounting data. These analytical records allow managers and other users to obtain more specific information for decision-making without maintaining separate accounting systems.

Although the one-circle system integrates financial and managerial accounting, it may still require the use of difference accounts. These accounts are applied when the values used for managerial purposes differ from those reported in financial accounting. Difference accounts therefore play an important role in ensuring transparency and accuracy, even within an integrated system.

The one-circle system is most commonly used in organizations with relatively simple accounting needs, where a strict separation between financial and managerial accounting is not necessary. It is often considered easier to manage and more cost-efficient, which makes it suitable for smaller companies or businesses that do not require complex accounting structures.

Diagram 5: One-circle system of accounting information



Source: Král et al. (2019), own processing



Chapter summary

Managerial accounting provides essential information for internal users, especially managers, to support decision-making, planning, and control of business operations. It focuses on the collection, analysis, and presentation of financial and related information that helps improve business performance and supports both

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operational and strategic decision-making. Accounting information is generally divided into three subsystems: financial accounting, tax accounting, and managerial accounting. Each subsystem serves a different purpose and responds to the specific needs of its users. External users, such as investors and creditors, primarily rely on financial accounting, while internal users, particularly managers, use managerial accounting to support operational and managerial decisions. State authorities use tax accounting information mainly to assess and collect taxes.

Controlling is an important management function that focuses on monitoring business performance, identifying variances from plans, and taking corrective actions when necessary to ensure that organizational objectives are achieved. Through continuous feedback and performance measurement, controlling helps improve efficiency and ensures that business activities are aligned with the company’s goals. Internal departments within an organization are classified according to their functions, including main activity departments, service departments, administration and management departments, and special departments. Each type of department has a specific role: main activity departments contribute directly to production and revenue generation, service departments support other areas of the business, and administration and management departments coordinate and oversee overall operations.

Accounting information can be organized using two basic systems: the two-circle system and the one-circle system. The two-circle system separates financial accounting and managerial accounting and uses connecting accounts to transfer information between these two areas, while difference accounts are used to record and manage differences in values. The one-circle system integrates financial and managerial accounting into a single framework, simplifying the accounting structure while still providing detailed information through analytical records. Even in this integrated system, difference accounts are applied to identify and track differences between financial and managerial data.



Key terms

Managerial accounting	Controlling	One-circle system
Internal users	Business performance	Connecting accounts
Decision-making	Internal departments	Difference accounts
Financial data	Two-circle system	Business operations

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Questions

1. Define managerial accounting.
2. What are the differences between financial accounting, managerial accounting, and cost accounting?
3. Which accounts are used in a two-circle accounting system?
4. How are departments classified according to the nature of their activities?
5. What information do managers require for decision-making and control?
6. Explain the relationship between ownership and management.
7. How are financial position and financial performance expressed in accounting?
8. What is the role of a controller in an enterprise?
9. Explain the differences between operational, tactical, and strategic management in an enterprise.
10. What are the differences in accounting information required by external and internal users?



Exercises

Exercise 1.1

Determine whether the following statements relate to managerial accounting or financial accounting:

1. Accounting is not regulated by legislation.
2. Detailed information is provided.
3. Information about the financial position of the company is presented.
4. Summary information for the enterprise as a whole is provided.
5. The accounting period consists of three consecutive calendar months.
6. Information is expressed both in monetary terms and in physical units.
7. Accounting is regulated by legislation.
8. The information is publicly accessible.

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9. Information about the performance of the company is provided.
10. Confidential information is used only for internal purposes.
11. Predetermined costs are compared with actual costs.
12. Variances are evaluated and corrective measures are taken.

Exercise 1.2

Which departments belong to the main activity departments, service departments, administration and management departments, and special departments?

- | | |
|-------------------------|----------------------------|
| 1. Production | 7. Marketing |
| 2. Logistics | 8. Controlling |
| 3. Canteen | 9. Recreation Centre |
| 4. Education | 10. Distribution and sale |
| 5. Financial management | 11. Supply |
| 6. IT Centre | 12. Secretariat of the CEO |

Exercise 1.3

The company purchased material in two deliveries. In the first delivery, the company bought 180 kg of material at a price of CZK 130 per kilogram. In the second delivery, it bought 50 kg at a price of CZK 160 per kilogram. Additional acquisition costs amounted to CZK 820 for the first delivery and CZK 610 for the second delivery.

To produce 10 units of output, the company consumes 50 kg of direct (basic) material. During the month, the company produced 25 units in total. In financial accounting, material consumption is valued using the weighted average cost method. In managerial accounting, material consumption is valued at a predetermined (standard) price of CZK 125 per kilogram.

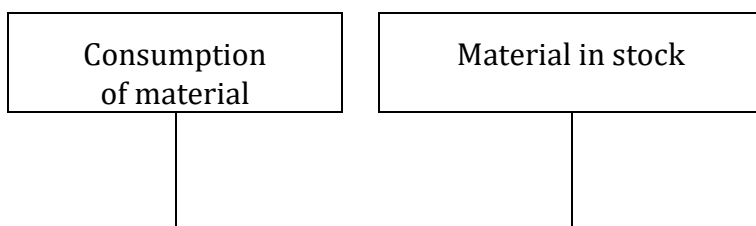
Task:

Record the material consumption in financial accounting and in managerial accounting in a two-circle accounting system, using connecting accounts and a difference account where necessary.

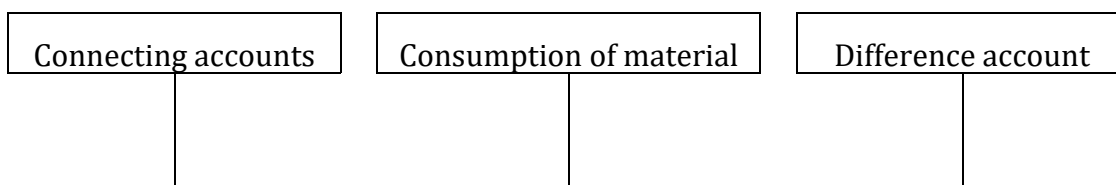
Solution:

Financial accounting

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Managerial accounting



Exercise 1.4

In January 2021, the company acquired a machine for CZK 80 000. In financial accounting, the company uses straight-line depreciation with a depreciation period of 10 years. The replacement cost of the machine at the beginning of 2026 is CZK 90 000. During 2026, the machine was used for a total of 4 150 operating hours. In managerial accounting, the company estimates the machine's useful life at 40 000 operating hours (approximately 4 000 hours per year).

Tasks:

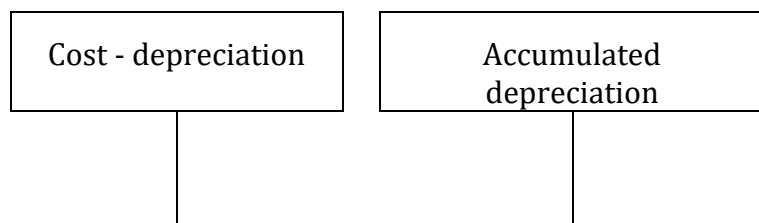
- Determine the amount of depreciation in financial accounting for the year 2026.
- Determine the amount of depreciation in managerial accounting for the year 2026 if depreciation is based on historical cost and calculated using the expected performance (units-of-production method).
- Determine the amount of depreciation in managerial accounting for the year 2026 if depreciation is calculated on a straight-line basis using the replacement cost.
- Determine the amount of depreciation in managerial accounting for the year 2026 if depreciation is calculated to provide sufficient funds for replacing the asset at the current replacement cost.

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Solution:

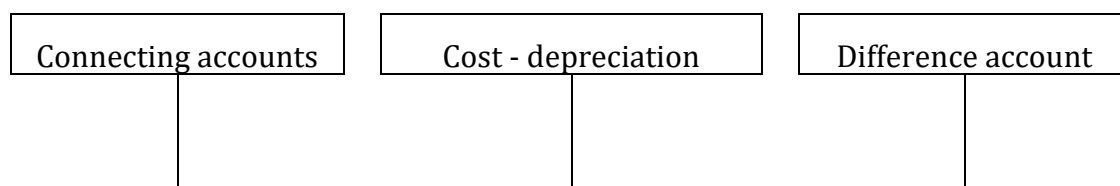
Financial accounting

a)

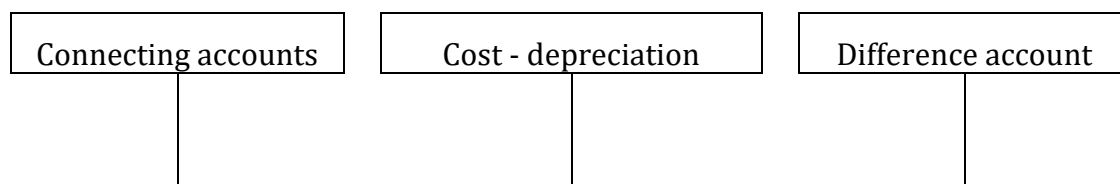


Managerial accounting

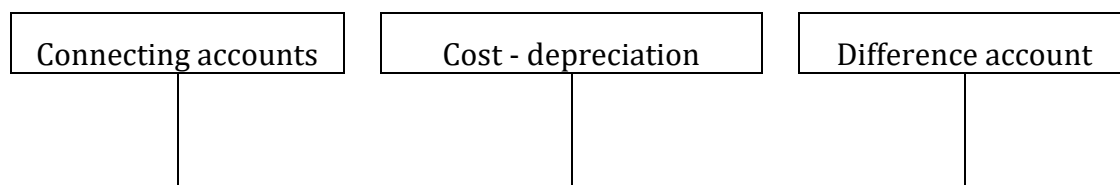
b)



c)



d)



Source of exercises: Šoljaková et al. (2011); Vlčková (2016)

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2 Effectiveness, efficiency, cost-economy

Effectiveness, efficiency, and cost economy are key concepts used to evaluate business performance in managerial accounting. They help managers assess whether organizational goals are achieved, how resources are used, and whether costs are incurred in an economical way. These concepts form an important basis for planning, control, and decision-making.

This chapter introduces the basic meaning of effectiveness, efficiency, and cost economy and outlines their role in performance measurement and managerial control. Detailed explanations and practical applications of these concepts are presented in the following sections.



Chapter objectives

The objectives of this chapter are to:

- explain the concepts of effectiveness, efficiency, and cost economy and their role in managerial accounting,
- distinguish between effectiveness, efficiency, and cost economy,
- describe the basic and extended classifications of costs,
- differentiate between direct and indirect costs and fixed and variable costs,
- explain controllable and uncontrollable costs and their importance for responsibility accounting,
- identify relevant, irrelevant, sunk, and opportunity costs for managerial decision-making,
- analyze cost behavior and variances related to price and quantity changes,
- explain the idle fixed costs and its relationship to capacity utilization.

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2.1 Basic terminology according to CIMA (2005)

Common cost

Cost relating to more than one product or service.

Contribution

Sales value less variable cost of sales. Contribution may be expressed as total contribution, contribution per unit or as a percentage of sales.

Controllable cost

A cost which can be influenced by its budget holder.

Cost behaviour

The variability of input costs with activity undertaken. A number of cost behaviour patterns are possible, ranging from variable costs whose cost level varies directly with the level of activity, to fixed costs, where changes in output have no effect upon the cost level.

Cost classification

The arrangement of elements of cost into logical groups with respect to their nature.

Cost control

The process which ensures that actual costs do not exceed acceptable limits.

Fixed cost

A cost which is incurred for an accounting period, and which, within certain output or turnover limits, tends to be unaffected by fluctuations in the levels of activity.

Joint cost

The cost of a process which results in more than one main product.

Opportunity cost

The value of the benefit sacrificed when one course of action is chosen, in preference to an alternative. The opportunity cost is represented by the forgone potential benefit from the best rejected course of action.

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Overhead / indirect cost

Expenditure on labour, materials or services which cannot be economically identified with a specific saleable cost unit.

Overhead absorption rate

A means of attributing overhead to a product or service, base for example on direct labour hours, direct labour cost or machine hours.

Variable cost

A cost which varies with a measure of activity.

2.2 Effectiveness

Effectiveness expresses the extent to which a company achieves its intended business objectives. It focuses on the results achieved and evaluates whether the organization is doing the right things in order to fulfill its purpose. In this sense, effectiveness reflects the overall contribution of the enterprise arising from its existence and from the achievement of its strategic and operational intentions.

The fundamental objective of a business enterprise is to increase the value of the capital invested by its owners beyond what could be achieved through alternative investment opportunities. For this reason, effectiveness is closely linked to the evaluation of invested capital. A key benchmark for measuring effectiveness is the rate at which equity is evaluated, most commonly measured by the return on equity (ROE). This indicator shows how successfully the company uses shareholders' funds to generate profit.

In managerial accounting and performance evaluation, effectiveness is often assessed using financial ratios that focus on the evaluation of equity and assets. These ratios provide information about the ability of the company to generate value from the resources entrusted to it.

Effectiveness ratios include:

1. Evaluation of equity and added value

Return on Equity (ROE) measures the profitability of equity invested by the owners and indicates how efficiently the company generates profit for its shareholders. Economic Value Added (EVA) evaluates whether the company creates value beyond the required return on invested capital and therefore reflects true economic performance.

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2. Evaluation of assets and capital

Return on Assets (ROA) measures how effectively the company uses its total assets to generate profit, regardless of how those assets are financed. Return on Capital Employed (ROCE) evaluates the efficiency and effectiveness with which long-term capital employed in the business is used to generate operating profit.

Together, these indicators provide a comprehensive view of business effectiveness by linking achieved results to the capital and assets used. They help managers and owners assess whether the company is achieving its objectives and creating value in a sustainable manner.

2.3 Efficiency

Efficiency expresses how effectively a company transforms costs into revenues through its sales activities. It focuses on the relationship between outputs, represented by revenues from sales, and inputs, represented by costs incurred. Efficiency therefore evaluates how well resources are used to generate economic benefits. In practical terms, it answers the question of whether the company is achieving its results with an appropriate level of costs.

In absolute terms, efficiency is measured by profit from sales, which is calculated by comparing revenues and costs. This absolute measure shows the total financial result achieved from selling products or services during a given period. A higher profit from sales indicates that revenues sufficiently exceed costs and that the company operates efficiently at its current scale.

In addition to absolute measures, efficiency is commonly evaluated using relative ratios, which allow comparisons over time or between different companies or business units. These ratios express efficiency as a relationship between profit, revenues, and costs and provide a more standardized view of performance.

Efficiency ratios include:

1. Absolute measure

Earnings from ordinary activities, calculated by comparing revenues and costs, reflect the overall financial result of the company's core operations.

2. Relative measures

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- The ratio of earnings to revenues from sales shows how much profit is generated from each unit of revenue.
- The ratio of earnings to costs indicates how effectively costs are transformed into profit.
- The ratio of costs to revenues measures the cost intensity of sales and shows how much cost is required to generate a given level of revenue.

Together, these measures help managers assess operational efficiency, identify areas of excessive cost consumption, and support decisions aimed at improving profitability and cost control.

2.4 Cost Economy

Cost economy expresses how economically costs are incurred in relation to the volume and structure of output produced. It focuses on whether resources are used in a reasonable and proportionate way and whether costs are kept at an appropriate level. The main objective of cost economy is to minimize costs while maintaining the required level of output and quality.

Cost economy evaluates the amount of costs incurred and places emphasis on avoiding unnecessary or excessive expenditures. A key criterion of cost economy is the average cost per unit of output, which shows how much cost is required to produce one unit of a product or service. Lower average costs generally indicate a higher level of cost economy.

Cost economy can be measured in two basic ways. First, it can be evaluated in total amounts, which is particularly important for responsibility accounting, where the focus is on controlling total costs incurred by departments or responsibility centers. Second, cost economy can be measured per unit of output, which is especially relevant for cost-product accounting, as it allows managers to assess the cost efficiency of individual products or services.

Cost economy is closely influenced by both efficiency and economies of scale. Cost efficiency is reflected in the reduction of total costs incurred for a given volume and structure of output. This applies to both variable costs and fixed costs and is achieved through better organization of activities, improved processes, and more efficient use of resources.

Economies of scale arise when output increases while total costs remain unchanged or increase at a slower rate within a given period. This effect is mainly related to the use of fixed costs. As output grows, fixed costs are spread over a larger number of units, which leads to a reduction in the average cost per unit of output.

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Economies of scale therefore contribute significantly to improved cost economy and overall business performance. You can see the different cost concepts in the financial accounting and in the managerial accounting in the table 1.

An important aspect of managing cost economy is the ability to acquire resources at the lowest possible price while maintaining the required quality. In managerial accounting, changes in costs are commonly analyzed using variance analysis, which helps identify the reasons for variances between planned and actual values. Two basic types of variances can be distinguished.

1. The effect of changes in the quantity of inputs consumed, referred to as the quantity (or usage) variance, reflects the difference between the planned and actual consumption of material, valued at the planned acquisition price. This variance shows whether more or less material was used than originally planned and is calculated as:

$$(Q_{pl} - Q_{act}) * p_{pl}$$

2. The effect of changes in the acquisition price of inputs, referred to as the price (or rate) variance, measures the difference between the planned and actual purchase price of material, multiplied by the actual quantity consumed. This variance indicates whether materials were purchased at a higher or lower price than expected and is calculated as:

$$(p_{pl} - p_{act}) * Q_{act}$$

where: Q_{pl} (planned quantity); Q_{act} (actual quantity); p_{pl} (planned price); p_{act} (actual price)

Together, these variances help managers identify whether variances in costs are caused by inefficient use of resources or by unfavorable purchase prices and support more effective cost control and decision-making.

Table 1: Different cost concepts in the FA and in the MA

FINANCIAL ACCOUNTING	MANAGERIAL ACCOUNTING
• free relationship to performance, • resources expressed in money,	• close relationship to performance, • other resources that allow to express the true economic benefits of the activities

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• does not follow the link to the desired level of resource consumption, • expresses the conditions valid at the time of acquisition (→ historical prices).	• ensuring the efficient use of resources, • represents the conditions in force at the time of the processes.
--	--

Source: Fibírová et al. (2019), own processing

2.5 Basic Cost Classification in Managerial Accounting

2.5.1 Direct and Indirect Costs

Direct costs are costs that can be directly and easily assigned to a specific cost object, such as a product, service, project, or activity. These costs can be measured and traced to the cost object without the need for allocation. Direct costs typically form the core part of unit costs and play an important role in cost calculation and pricing decisions.

Indirect costs are costs that cannot be directly attributed to a single cost object. They are incurred to create the general conditions necessary for the production of a range of outputs or services. Because indirect costs relate to more cost objects at the same time, they must be allocated using appropriate allocation methods. This classification of costs into direct and indirect costs is essential for compiling the traditional cost formula.

Direct costs usually include direct material and direct labor, but they may also include certain overhead costs that are specific to a particular type of output and can be allocated to a unit by simple division. Examples include depreciation of specialized equipment or development costs related to a specific product. In contrast, most indirect (overhead) costs are common to several types of outputs and must therefore be allocated indirectly using various allocation bases and methods.

Indirect costs are costs that cannot be directly charged to a specific cost object, such as an individual product, department, project, or function. These costs may be either fixed or variable in nature. In the case of joint costs, which arise when multiple products are produced simultaneously from the same process, it is not possible to identify direct costs for individual outputs.

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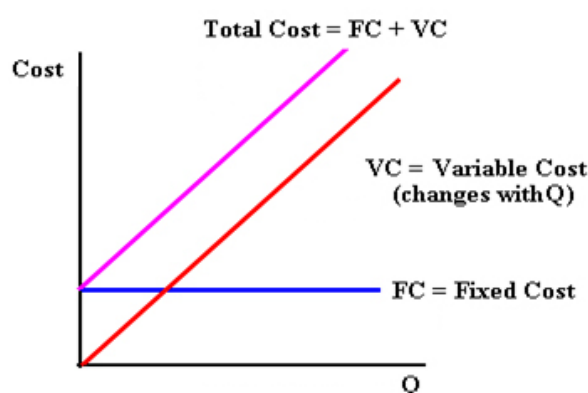
2.5.2 Variable and Fixed Costs

Variable costs depend on the volume of production or activity. As the volume of output increases, total variable costs increase proportionally, while the variable cost per unit remains constant under normal conditions. Typical examples of variable costs include direct material and direct labor that vary with production volume.

Fixed costs are incurred to ensure production conditions and to provide production capacity. In the short run, fixed costs do not change with the level of output, meaning that total fixed costs remain constant within a relevant range of activity. Examples include rent, salaries of management staff, and depreciation of buildings. Linear Model of Cost and Revenue is seen in the Figure 1.

It is important to note that not all variable costs are direct costs. For example, variable manufacturing overhead costs vary with production volume but are classified as indirect costs because they cannot be directly assigned to individual products. Similarly, fixed costs are not permanently fixed. In the long run, all costs can become variable, as there is sufficient time to adjust production capacity, technology, and resource usage.

Figure 1: Linear model of cost and revenue



Source: Drury (2023)

2.5.3 Controllable and Uncontrollable Costs

Controllable costs are costs that can be influenced or managed by a specific manager within a given period of time. A manager is considered responsible for these costs because they have the authority to make decisions that affect their level. Typical examples of controllable costs include direct labor costs, material usage, or certain operating expenses within a department.

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Uncontrollable costs are costs that cannot be significantly influenced by a particular manager in the short run. These costs are usually determined by higher-level management decisions or external factors. Examples include depreciation based on past investment decisions, rent determined by long-term contracts, or corporate-level administrative costs. This classification is especially important in responsibility accounting and performance evaluation, as managers should be assessed only on costs they can control.

2.5.4 Relevant and Irrelevant Costs

Relevant costs are costs that differ between alternative courses of action and therefore influence managerial decision-making. Only future costs that change as a result of a decision are considered relevant. Relevant costs are commonly used in short-term decision-making, such as make-or-buy decisions, pricing decisions, or decisions about accepting special orders.

Irrelevant costs are costs that do not change between decision alternatives and therefore do not affect the decision. These costs should be ignored when evaluating options. A typical example of an irrelevant cost is a sunk cost, which has already been incurred and cannot be recovered regardless of future decisions.

2.5.5 Sunk Costs and Opportunity Costs

Sunk costs are costs that have already been incurred in the past and cannot be changed by any future decision. Because sunk costs remain the same regardless of the chosen alternative, they are not relevant for decision-making. An example of a sunk cost is the purchase cost of machinery already acquired.

Opportunity costs represent the benefits that are lost when one alternative is chosen instead of the next best alternative. Although opportunity costs do not involve actual cash outflows and are not recorded in accounting records, they are highly relevant for managerial decisions. They reflect the true economic cost of using resources in a particular way.

2.5.6 Product Costs and Period Costs

Product costs are costs that are directly associated with the production of goods or services. These costs are assigned to products and become part of inventory values. Product costs typically include direct material, direct labor, and manufacturing overhead. They are recognized as expenses when the products are sold.

Period costs are costs that are not directly linked to production and are expensed in the period in which they are incurred. Examples include selling,

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administrative, and general expenses. Period costs are important for evaluating operating performance within a specific accounting period.

2.5.7 Avoidable and Unavoidable Costs

Avoidable costs are costs that can be eliminated, either fully or partially, if a specific decision is made, such as discontinuing a product line or closing a department. These costs are relevant for decision-making because they change depending on the chosen alternative.

Unavoidable costs are costs that will continue to be incurred regardless of the decision taken. These costs do not differ between alternatives and are therefore not relevant for evaluating options.

2.5.8 Idle Fixed Costs

Fixed costs are related to production capacity, which represents the maximum level of output that can be achieved under normal operating conditions (Q_{max}). This capacity may be fully utilized, underutilized, or, in some cases, exceeded for a short period. The way in which capacity is used has a direct impact on the effectiveness of fixed cost utilization.

Idle fixed costs represent the portion of fixed costs that relates to unused or idle capacity (as you can see in figure 2). In other words, they express the cost of capacity that is available but not actually used in production. Idle fixed costs arise when actual output (Q_{act}) is lower than the maximum available capacity (Q_{max}).

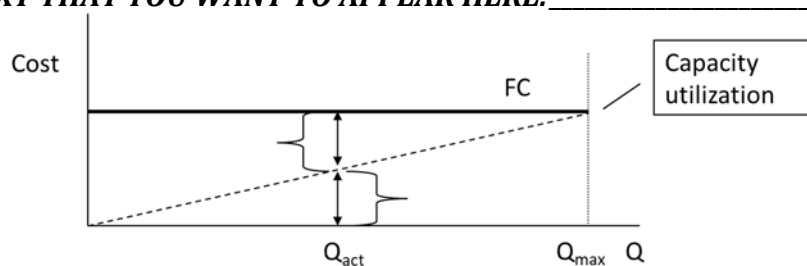
The amount of idle fixed costs can be calculated using the following formula:

$$\text{Idle fixed costs} = (Q_{max} - Q_{act}) * \left(\frac{FC}{Q_{max}} \right)$$

This formula multiplies the unused capacity by the fixed cost per unit of capacity. Idle fixed costs are important in managerial accounting because they help managers identify underutilized capacity, evaluate inefficiencies in resource usage, and support decisions related to capacity planning, cost control, and production volume adjustments.

Figure 2: Capacity utilization

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Source: Drury (2023)



Chapter summary

This chapter introduced the key concepts of effectiveness, efficiency, and cost economy as fundamental tools for evaluating business performance in managerial accounting. Effectiveness focuses on the achievement of business objectives and value creation for owners, efficiency examines the relationship between outputs and inputs, and cost economy emphasizes the economical use of resources and cost minimization. These concepts are closely interconnected and must be assessed together to obtain a realistic view of company performance.

The chapter also explained basic and extended classifications of costs used in managerial accounting. Costs were classified according to their relationship to cost objects, behavior, controllability, relevance for decision-making, and assignment to products or periods. Special attention was given to relevant and irrelevant costs, sunk and opportunity costs, and their role in managerial decisions.

In addition, the chapter discussed cost behavior, cost variances related to changes in prices and quantities, and the concept of idle fixed costs. Idle fixed costs highlight the impact of unused capacity on cost efficiency and support managerial decisions related to capacity utilization and cost control. Overall, the chapter provided a framework for understanding how cost information supports planning, control, and decision-making in managerial accounting.



Key terms

Effectiveness
Efficiency
Cost economy

Cost classification
Relevant and irrelevant costs
Sunk and opportunity costs

Cost variance analysis
Idle fixed costs



Questions

1. How is effectiveness defined in managerial accounting and how is it measured?
2. What is the difference between effectiveness, efficiency, and cost economy?
3. How do effectiveness ratios differ from efficiency ratios in performance evaluation?
4. What is meant by cost economy and how is it evaluated in managerial accounting?
5. How are direct and indirect costs defined?
6. What is the difference between fixed and variable costs, and how do they behave in the short and long run?
7. What are controllable and uncontrollable costs and how are they used in responsibility accounting?
8. Why are relevant and irrelevant costs important for managerial decisions?
9. What are idle fixed costs and how are they related to capacity utilization?
10. How does cost variance analysis help managers identify inefficiencies and improve cost control?



Exercises

Exercise 2.1

Employees of an accounting firm are paid fixed monthly wages. In 2026, the firm employed five accountants. The available working time of one employee, defined as the number of hours for which an employee is available to work during the year, is 1 600 hours. The total annual wage cost amounts to CZK 2 800 000. In reality, the employees worked only 7 000 hours during the year.

Task:

Calculate idle fixed costs and evaluate the result.

Solution:

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Exercise 2.2

The company leased three cranes for the period from April to June 2026. The total rental cost for these cranes was CZK 1 224 000. The available operating time of each crane was 680 hours for the period. In reality, the cranes were used for a total of 1 950 hours.

Task:

Calculate idle fixed costs and evaluate the result.

Solution:

Exercise 2.3

The planned material cost per unit of product is EUR 1 500. According to the production plan, the company intended to produce 300 units. In reality, the actual material cost incurred amounted to EUR 420 000.

The budgeted depreciation of machinery for the month of March 2026 is EUR 10 000. The production plan for this month was to produce 1 000 units. In fact, the company produced 1 250 units.

Task:

Evaluate the cost economy of variable and fixed costs.

Solution:

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Exercise 2.4

Bakery bakes donuts. In the table below, the selected data from the balance sheet and the profit and loss statement for the year 2026 are presented.

Balance sheet to 31/12/2026

Item	Actual (in CZK)	Planned (in CZK)
Long assets	600 000	610 000
Short assets	530 000	410 000
Total assets	1 130 000	1 020 000
Equity	570 000	460 000
Foreign capital	560 000	560 000
Total liabilities	1 130 000	1 020 000

Profit and loss statement to 31/12/2026

Item	Actual	Planned
Volume of production and sales	19 000 units	18 000 units
Revenues from sales	285 000 CZK	252 000 CZK
Cost of sales	95 000 CZK	108 000 CZK
Profit	190 000 CZK	144 000 CZK

Task:

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From the data above, evaluate effectiveness, cost economy and efficiency.

Solution:

1. Effectiveness

2. Cost economy

3. Efficiency

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Source of exercises: Šoljaková et al. (2011); Vlčková (2016)

3 Connection between managerial costs, revenues and profits. Break-even point

Understanding the relationship between costs, revenues, and profits is essential for effective managerial decision-making. In managerial accounting, this relationship explains how changes in production volume, selling prices, and cost structure influence the financial result of a business. Managers use this information to plan operations, evaluate profitability, and assess the financial impact of alternative decisions.

This chapter focuses on the connection between managerial costs, revenues, and profits and introduces the concept of the break-even point. The break-even point represents the level of output or sales at which total revenues equal total costs and the company neither makes a profit nor incurs a loss. By analyzing the break-even point, managers can better understand risk, determine the minimum required sales volume, and support decisions related to pricing, cost control, and production planning.



Chapter objectives

The objectives of this chapter are to:

- explain the relationship between costs, revenues, and profit in managerial accounting,
- distinguish between variable and fixed costs and explain their role in profit analysis,
- define the contribution margin and contribution margin ratio and explain their use in profit management,
- apply the linear cost-profit model to analyze cost and revenue behavior,
- calculate profit using contribution margin and fixed costs,
- define and calculate the break-even point in units and in monetary terms,
- interpret the break-even point as an indicator of business risk,
- use break-even analysis to support managerial decisions related to pricing, sales volume, and cost structure.

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3.1 Basic terminology according to CIMA (2005)

Break-even point

The level of activity at which there is neither profit or loss. It can be ascertained by using a breakeven chart or by calculation.

Contribution

Sales value less variable cost of sales. Contribution may be expressed as total contribution, contribution per unit or as a percentage of sales.

Cost

As a noun – the amount of expenditure incurred on, or attributable to, a specified thing or activity.

As a verb – to ascertain the cost of a specified thing or activity.

Cost accounting

The establishment of budgets, standard costs and actual costs of operations, processes, activities or products; and the analysis of variances, profitability or the social use of funds.

Profit

Profit is a financial benefit that is realized when the amount of revenue gained from a business activity exceeds the expenses, costs and taxes needed to sustain the activity.

Profit margin

Sales less cost of sales, expressed either as a value or as a percentage of sales value.

The profit margin may be calculated at different stages, hence the terms gross and net profit margin. The level of profit reported in also influenced by the extent of the application of accounting conventions, and by the method of product costing used, e. g. marginal or absorption costing.

Revenue

Revenue is the amount of money that a company actually receives during a specific period, including discounts and deductions for returned merchandise.

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3.2 Linear Model of Cost and Revenue Development

The classification of costs into variable costs and fixed costs plays a key role in profit management. It enables managers to evaluate different business alternatives, analyze the impact of changes in production volume and product mix on profit, and optimize the structure of products offered. This classification is therefore essential for planning, decision-making, and break-even analysis.

Fixed costs ensure the basic conditions for business activity and provide production capacity. The volume of output is limited by this capacity in the short run. Fixed costs do not change with the level of production within a certain range of activity. Variable costs, on the other hand, are directly related to the production of individual products or groups of products and change in proportion to the volume of output.

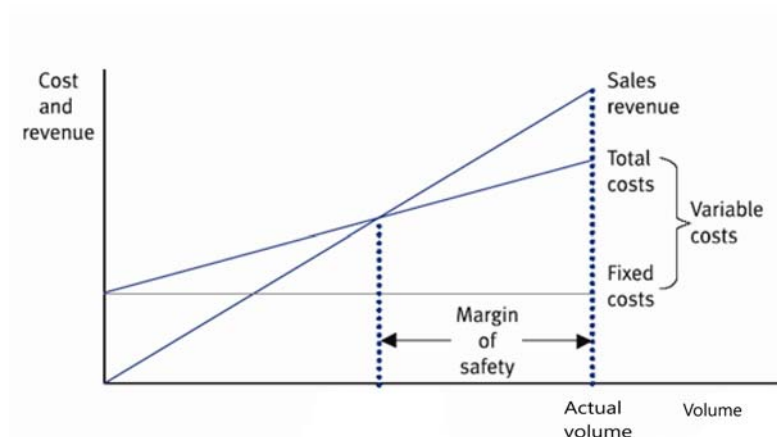
Some costs may have both fixed and variable characteristics. A typical example is depreciation. Depreciation can be treated as a variable cost when it is linked to performance or usage, such as depreciation per kilometer driven or copying costs per number of copies made. In contrast, depreciation represents a fixed cost when it is calculated using the straight-line method based on time, where the same amount is charged at regular time intervals regardless of output.

The variable cost per unit is determined either on the basis of consumption norms and their valuation, or, in the case of overheads, according to predefined standards or normatives. Fixed costs are usually determined by capacity limits and represent the maximum amount that can be spent on ensuring production conditions within a given period.

The linear model of cost and revenue development is used to describe how costs and revenues change in relation to the volume of output. It provides a simplified graphical and analytical representation of the relationship between costs, revenues, and production volume. In reality, cost and revenue functions are often non-linear; however, for managerial decision-making, they are approximated by linear functions. This simplification is acceptable within a certain level of activity, known as the relevant range (margin of safety), in which variable costs increase linearly with output and fixed costs remain constant. You can see the Figure 3.

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Figure 3: Margin of safety



Source: Drury (2023)

3.3 Assumptions of the Linear Cost-Profit Model

The linear cost-profit model is based on several simplifying assumptions that make it possible to analyze the relationship between costs, revenues, and profit in a clear and understandable way. These assumptions define the conditions under which the model can be applied.

The product is defined by given utility properties and a stable level of quality. The structure of products is predetermined and does not change during the analyzed period. The selling price of the product is assumed to be constant, regardless of the volume of output sold. Costs can be clearly divided into variable costs and fixed costs.

Fixed costs are assumed to remain constant in their total amount within the relevant range, meaning that their absolute value does not change with the volume of production. Variable costs per unit are assumed to be constant, so total variable costs increase proportionally with output. The model also assumes stable technology, constant labor productivity, and unchanged technical and qualitative characteristics of the product.

These assumptions allow costs and revenues to be expressed as linear functions of output, which simplifies analysis and supports managerial decision-making.

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Basic Parameters of the Linear Model in the Case of Homogeneous Output

In the case of homogeneous activity, where only one type of product is produced, the linear model is described using the following basic parameters:

- Q – volume of output expressed in natural units,
- p – selling price per unit of product,
- v – variable cost per unit of product,
- FC – total fixed costs for a defined period.

Formal Expression of the Linear Model

Based on the above assumptions and parameters, the relationships between costs, revenues, and output can be expressed as follows:

- Total revenues: $TR = p * Q$
- Total variable costs: $VC = v * Q$
- Total costs: $TC = v * Q + FC$
- Average total cost per unit: $TC / Q = (FC / Q) + v$
- Fixed cost per unit: $f = FC / Q$

These formulas form the basis for break-even analysis and for evaluating how changes in output affect costs, revenues, and profit within the linear model.

By linking the development of costs and revenues, it is possible to derive the contribution margin and profit. The contribution margin represents the portion of revenue that contributes to covering fixed costs and generating profit. It is defined as the difference between the selling price and the variable cost per unit. For this reason, the contribution margin is one of the most important indicators for profit management and for decisions about the optimal product structure.

The contribution margin per unit is calculated as: $c = p - v$

The total contribution margin is calculated as: $C = TR - VC = c * Q$

The total contribution margin increases with the volume of sales. From the total contribution margin, fixed costs are covered first. Any remaining amount after fixed costs have been paid represents the profit of the company.

Profit can therefore be expressed as: $P = TR - VC - FC$

or: $P = p * Q - v * Q - FC$

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or: $P = c * Q - FC$

3.4 Break-Even Point

The break-even point (BEP) represents the level of output or sales at which total revenues are exactly equal to total costs. At this point, the company neither makes a profit nor incurs a loss. The break-even point therefore defines the minimum level of activity that must be achieved in order to cover all costs incurred during a given period (see the Figure 4).

Total costs consist of fixed costs and variable costs. Fixed costs remain constant within the relevant range, regardless of the volume of output, while variable costs change proportionally with the level of production. Total revenues depend on the volume of output sold and the selling price per unit. The break-even point is reached when revenues generated from sales are sufficient to cover both variable and fixed costs.

The break-even point can be expressed either in physical units (sales volume) or in monetary terms (sales revenues). Expressing the break-even point in units shows how many units of product must be sold to cover total costs. Expressing it in monetary terms shows the minimum amount of sales revenue required to avoid a loss. Both forms are useful for managerial planning and decision-making.

From a managerial perspective, the break-even point is an important indicator of business risk. A higher break-even point means that the company must achieve a higher level of sales before it becomes profitable, which increases operational risk. Conversely, a lower break-even point indicates that the company can cover its costs at a lower sales volume, which reduces risk and increases financial stability.

The break-even point is derived from the condition that total revenues equal total costs:

$$\text{Total revenues} = \text{Total costs}$$

$$p * Q = FC + v * Q$$

By rearranging this equation, the break-even volume in units can be calculated as:

$$Q_{BEP} = FC / (p - v)$$

Since the difference between the selling price and the variable cost per unit represents the contribution margin per unit (c), the break-even volume can also be expressed as:

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$$Q_{BEP} = FC / c$$

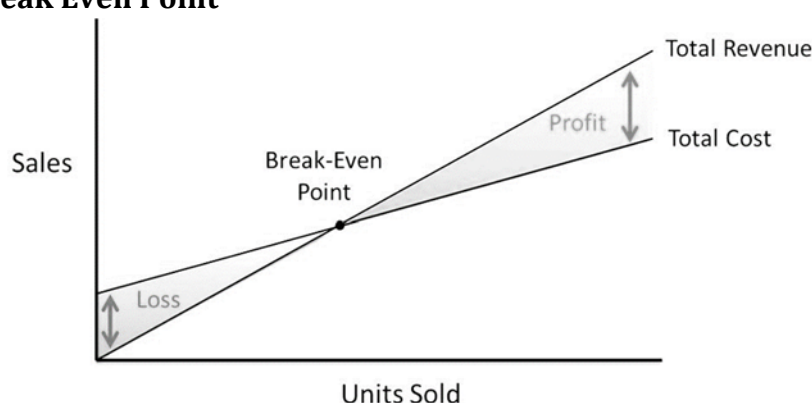
To express the break-even point in monetary terms, the contribution to sales ratio is used. The break-even sales revenue is calculated as:

$$TR_{BEP} = FC / (c / p)$$

Alternatively, break-even sales revenue can be calculated by multiplying the break-even volume by the selling price per unit:

$$TR_{BEP} = Q_{BEP} * p$$

Figure 4: Break Even Point



Source: Drury (2023)

Managerial Interpretation of the Break-Even Point

Before reaching the break-even point, the contribution margin generated by sales is not sufficient to cover fixed costs, and the company operates at a loss. At the break-even point, the total contribution margin exactly equals fixed costs, resulting in zero profit. Beyond the break-even point, each additional unit sold generates a contribution margin that directly increases profit.

Managers use break-even analysis to evaluate pricing decisions, cost structures, and changes in production volume. It is also applied in decisions related to product mix, capacity utilization, and assessment of the impact of cost changes or price changes on profitability. Despite its simplified assumptions, break-even analysis provides a clear and practical framework for understanding the relationship between costs, revenues, and profit in managerial accounting.

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The share of the contribution margin in the selling price shows how much of each unit of revenue is available to cover fixed costs and to create profit. This indicator is called the contribution to sales ratio (also referred to as the contribution margin ratio).

The contribution to sales ratio is calculated as:

$$c / p = (TR - VC) / TR$$

This ratio is useful for comparing products, evaluating profitability, and supporting decisions related to pricing, product mix, and break-even analysis.



Chapter summary

This chapter examined the relationship between managerial costs, revenues, and profit and explained how this relationship can be analyzed using the linear cost-profit model. The distinction between variable and fixed costs was emphasized as a key prerequisite for understanding profit behavior and for applying contribution margin analysis. The contribution margin was introduced as a fundamental indicator showing how sales contribute to covering fixed costs and generating profit.

A central part of the chapter was devoted to break-even analysis. The break-even point was defined as the level of output or sales at which total revenues equal total costs and the company achieves neither profit nor loss. The break-even point can be expressed in units of output or in monetary terms and serves as an important indicator of business risk and cost structure. The chapter also demonstrated how break-even analysis supports managerial decisions related to pricing, sales volume, cost control, and capacity utilization.

Overall, the chapter showed how simplified linear models, despite their assumptions, provide a clear and practical framework for analyzing profitability and supporting short-term and medium-term managerial decision-making.

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Key terms

Managerial costs
Variable costs
Fixed costs

Contribution margin
Contribution margin per unit
Contribution margin ratio

Cost-profit model
Break-even point (BEP)
Relevant range



Questions

1. How are costs, revenues, and profit related in managerial accounting?
2. Why is the distinction between variable and fixed costs important for profit analysis?
3. What is the contribution margin and how is it calculated?
4. What is the contribution margin per unit and what does it represent?
5. What is the contribution margin ratio and how is it used in decision-making?
6. What is the linear cost-profit model and what are its main assumptions?
7. What is the break-even point and what does it indicate?
8. How can the break-even point be expressed in units and in monetary terms?
9. How does the break-even point reflect business risk and cost structure?
10. How can break-even analysis support managerial decisions related to pricing, sales volume, and cost control?



Exercises

Exercise 3.1

The enterprise produces glass kettles. The direct material cost per kettle is CZK 260, direct labor is CZK 240, and other direct costs are CZK 100. Total fixed costs

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are CZK 9 000 000. The selling price per kettle is CZK 1 000. The enterprise plans to sell 30 000 kettles in 2026.

Tasks:

1. Calculate the contribution margin per kettle.
2. Calculate the planned profit for the year 2026.
3. Calculate the break-even point.
4. In 2027, the company expects to sell 35 000 kettles. To achieve this sales volume, the company must increase advertising costs. What is the maximum amount the company can spend on advertising if it wants to keep the same return on sales as in 2026?

Solution:

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Exercise 3.2

The company plans to start producing special winter jackets. The selling price is CZK 16 500 per jacket. Unit variable costs are estimated at CZK 4 000. Total fixed costs are CZK 24 000 000.

Tasks:

1. Determine the number of jackets at which total sales revenue equals total costs (break-even point).
2. Determine the number of jackets the company must sell to earn a profit of at least CZK 4 000 000.

Solution:

Exercise 3.3

An electricity supplier for households wants to determine how many kWh must be supplied during the next year in order to achieve a profit of CZK 35 000 000. The calculation is based on the following data:

- Fixed costs: CZK 325 000 000 (per year)

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- Variable cost per 1 kWh: CZK 0,50
- Flat monthly connection fee per household: CZK 99
- Estimated number of households: 100 000
- Selling price per 1 kWh: CZK 4,50

Task:

How many kWh of electricity must the company supply during the next year to achieve the desired profit?

Solution:

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Exercise 3.4

COOL Enterprise produces special winter jackets. In the current period, the company sold 2 000 jackets at a price of CZK 25 000 per jacket, so total sales revenue was CZK 50 000 000. Total costs were CZK 44 000 000, consisting of variable costs of CZK 28 000 000 for 2 000 jackets and fixed costs of CZK 16 000 000.

The company received a special order from the Czech Olympic Committee for 100 jackets at a price of CZK 20 000 per jacket. This price is below the current average total cost per jacket (CZK 22 000). To produce the additional jackets, the company expects an increase in production capacity, which will increase fixed costs, mainly depreciation. Currently, depreciation is CZK 4 000 000, and it is expected to increase by 10%.

Task:

What profit or loss will the enterprise achieve if it accepts the contract?

Solution:

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Exercise 3.5

Predetermined costs for 1 period are as follows:

Cost	Total EUR for 500 000 pcs	EUR for 1 pc
Direct material	3 000 000	6
Direct labour	1 000 000	2
Production overhead costs	4 000 000	8
- Included variable costs	1 000 000	2
Total	8 000 000	16

Task:

Is it true that if capacity utilization is reduced to 300 000 units, total costs will amount to EUR 4,8 million ($300\,000 \cdot 16$)?

Solution:

Source of exercises: Šoljaková et al. (2011); Vlčková (2016)

4 Absorption costing and marginal costing, relationship between costing and profit

Predetermined costs play an important role in managerial accounting, as they provide a planned benchmark against which actual costs can be compared. They are used for planning, budgeting, cost control, and performance evaluation. By setting costs in advance for a defined period and expected level of activity, managers gain a clearer view of how resources should be used and what cost levels are considered acceptable.

This chapter focuses on the relationship between predetermined costs, capacity utilization, and total costs. It explains how changes in the level of activity affect cost behavior and how unused or underutilized capacity influences total and unit costs. Understanding these relationships helps managers evaluate the economic consequences of capacity changes, assess efficiency, and make informed decisions related to production planning and cost management.



Chapter objectives

The objectives of this chapter are to:

- explain the principles and purpose of absorption costing and marginal costing,
- distinguish between product costs and period costs,
- describe how fixed and variable costs are treated under absorption and marginal costing,
- explain the concept of contribution margin and its role in profit determination,
- analyze the impact of capacity utilization on fixed cost behavior,
- define relatively saved and relatively exceeded fixed costs,
- compare profit or loss determination under absorption costing and marginal costing,

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- apply absorption and marginal costing to managerial decision-making.

4.1 Basic terminology according to CIMA (2005)

Absorbed overhead

Overhead attached to products or services by means of absorption rates. Under or over absorbed overhead means the difference between overhead incurred and overhead absorbed, using an estimated rate, in a given period. In a standard costing system, it is the sum of variable production overhead total variance and fixed production overhead total variance. Under or over absorbed may also be expressed as under or overrecovered.

Activity-based costing (ABC)

An approach to the costing and monitoring of activities which involves tracing resource consumption and costing final outputs. Resources are assigned to activities and activities to cost objects based on consumption estimates. The latter utilise cost drivers to attach activity costs to outputs.

Activity-based management (ABM)

System of management which uses activity-based cost information for a variety of purposes including cost reduction, cost modelling and customer profitability analysis.

Allocate

To assign a whole item of cost, or of revenue, to a single cost unit, centre, account or time period.

Available hours

The number of hours for which a worker or machine is available to work.

Avoidable costs

The specific costs of an activity or sector of a business which would be avoided if that activity or sector did not exist.

Basis of apportionment

A physical or financial unit used to apportion costs equitably to cost centres.

Committed costs

Costs arising from prior decisions which cannot be changed in the short run. Committed cost incurrence often stems from strategic decisions concerning capacity,

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with resulting expenditure on plant and facilities. Initial control of committed costs at the decision point is through investment appraisal techniques.

Cost driver

Any factor which causes a change in the cost of an activity, e. g. the quality of parts received by an activity is a determining factor in the work required by that activity and therefore affects the resources required. An activity may have multiple cost drivers associated with it.

Cost unit

A unit of product or service in relation to which costs are ascertained.

Costing

The process of determining the costs of products, services or activities

absorption costing – a method of costing that, in addition to direct costs, assigns all, or a proportion of, production overhead costs to cost units by means of one or several overhead absorption rates,

marginal costing – the accounting system in which variable costs are charged to cost units and fixed costs of the period are written off in full against the aggregate contribution. Its special value is in recognising cost behaviour and hence assisting in decision-making.

Overhead absorption rate

A means of attributing overhead to a product or service, base for example on direct labour hours, direct labour cost or machine hours.

4.2 Absorption Costing

Absorption costing is a costing method that assigns all costs related to production to products. This includes both direct costs and indirect (overhead) costs. In absorption costing, every unit of product absorbs a share of total production costs incurred during the period.

Direct costs are costs that can be directly traced to a product, such as direct material, direct labour, and direct expenses. Indirect costs represent all other production-related costs that cannot be directly assigned to a single product. These costs

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are also referred to as overhead costs and are allocated to products using predetermined allocation bases.

Absorption costing provides a static view of costs and profit. It shows the level of costs and profit for a given volume and structure of production and assumes that both remain unchanged. For this reason, absorption costing is linked to only one specific production variant defined by a particular quantity and product mix. It does not reflect how costs and profit change when production volume or product structure changes.

Because of this limitation, absorption costing is not suitable for many managerial decisions, such as decisions about product mix, minimum selling prices, or the contribution of individual products to profit creation. It does not clearly show how individual products contribute to covering fixed costs and generating profit.

Limitations of Absorption Costing

Absorption costing has several important limitations. First, the allocation of indirect costs is partly arbitrary. Administrative costs and some production overheads are common to several products, and their assignment to individual products is based on formal allocation rules rather than a direct causal relationship. Second, the actual full cost of a product can usually be determined only with a time delay, after all costs for the period have been collected and allocated.

Importance and Use of Absorption Costing

Despite its limitations, absorption costing remains an important costing method. It is widely used as a pricing policy criterion, as full product costs allow companies to compare different pricing variants and to differentiate prices for different customers. Absorption costing is also used to assess business competitiveness and to analyse and compare the profitability of individual products and services.

In addition, absorption costing plays a key role in financial accounting, where inventory and cost of sales must include a share of fixed production overheads. For this reason, absorption costing is required for external reporting in many accounting systems.

Total Absorption Costing Procedure

Total absorption costing is a systematic method used to determine the full cost of products and services. The full cost of a product consists of direct costs and an allocated share of indirect costs. The basic steps of total absorption costing are as follows:

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1. All costs are classified as either direct costs or indirect costs.
2. Factory indirect costs are allocated to cost centres.
3. Costs of service department cost centres are reallocated to production cost centres.
4. Budgeted overhead absorption rates are calculated for each production cost centre.
5. These absorption rates are applied to products and services to determine their full cost.

This procedure ensures that all production-related costs are absorbed into product costs and included in inventory valuation and profit calculation.

4.3 Marginal Costing

The main objective of marginal costing is not to determine the full cost of a product, but to evaluate its contribution margin and profit. Marginal costing focuses on how individual products contribute to covering fixed costs and generating profit. For this reason, it is primarily a tool for managerial decision-making rather than for external reporting.

In marginal costing, only variable costs are assigned to cost units (products or services). All fixed costs are treated as period costs and are written off in full against the contribution margin of the period in which they are incurred. The key managerial decision is therefore to determine which costs are variable and should be assigned to products, and which costs are fixed and should remain as a total cost of the period.

Management mainly requires information about selling prices, variable costs, and contribution margins. It is also important to identify costs that are not influenced by changes in production volume or product structure, such as many fixed costs that arise simply from operating the business. In marginal costing, there is no priority given to the classification of costs into direct and indirect costs. Instead, the crucial distinction is between variable costs and fixed costs.

Marginal costing removes the main weakness of absorption costing, which lies in the arbitrary allocation of fixed overheads to products. By excluding fixed costs from product costs, marginal costing provides clearer information about the real economic contribution of individual products. Variable costs used in marginal costing include both direct variable costs and indirect variable costs, such as variable production overheads.

Contribution Margin and Profit Calculation

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In marginal costing, the relationship between costs and price is not based on the traditional approach of “full cost plus profit.” Instead, it follows a differential (retrograde) logic, starting from the selling price and deducting costs step by step. This approach clearly shows how profit is created.

The calculation is as follows:

Selling Price
– Variable Costs
= Contribution Margin
– Fixed Costs
= Profit

The contribution margin shows how much each unit sold contributes to covering fixed costs and, once fixed costs are covered, to generating profit. This information is essential for decisions related to pricing, product mix, acceptance of special orders, and break-even analysis.

Why Marginal Costing Is Important

Marginal costing is especially useful for short-term decision-making. It helps managers understand how changes in sales volume, prices, or cost structure affect profit. Although marginal costing is not suitable for inventory valuation in financial accounting, it is a powerful internal tool for planning, control, and profit management.

4.4 Profit or Loss Determination Based on Absorption and Marginal Costing

The determination of profit or loss differs depending on whether absorption costing or marginal costing is applied (as you can see in Table 2). The key difference lies in the way fixed costs are treated and in the timing of their impact on profit.

a) Absorption Costing

Under absorption costing, revenues from sales must cover not only the costs of the products sold, but also the total costs incurred during the period. Product costs include both variable costs and a share of fixed production costs. These costs are assigned to products and become part of inventory valuation. They are recognized as expenses only when the products are sold and therefore affect profit or loss in the period of sale.

Costs that are not included in product costs, such as selling and administrative expenses, are treated as period costs. These costs are expensed in the period in which they are

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incurred and reduce profit in that same period. As a result, profit under absorption costing depends not only on sales volume, but also on changes in inventory levels. If production exceeds sales, part of fixed costs is deferred in inventory and profit increases; if sales exceed production, fixed costs are released from inventory and profit decreases.

b) Marginal Costing

Under marginal costing, products are valued using only variable costs. All fixed costs are treated as period costs and are charged in full against revenues in the period in which they are incurred. Fixed costs are therefore not included in product valuation and do not affect inventory values.

Marginal costing makes it possible to clearly identify the contribution of individual products to total profit or loss through the contribution margin. Profit is determined by the total contribution margin minus fixed costs. This approach provides transparent information about how changes in production volume and product mix influence profit and therefore strongly supports value-based management and short-term decision-making.

Unlike absorption costing, profit under marginal costing depends only on sales volume and contribution margins, not on changes in inventory levels. For this reason, marginal costing is particularly useful for decisions related to pricing, product mix, acceptance of special orders, and capacity utilization.

Table 2: Profit or loss determination based on absorption and marginal costing

Absorption costing	Marginal costing
Net turnover	Net turnover
Less production cost of sales:	Less variable cost of sales:
Direct materials	Direct materials
Direct labour	Direct labour
Production overhead	Variable production overhead
	Variable selling and distribution overhead
Gross profit	Contribution
Less non-production overhead:	Less fixed costs:
Selling overhead	Production overhead
Distribution overhead	Selling overhead
Administrative expenses	Distribution overhead
R & D cost	Administrative expenses
	R & D cost
Net profit before tax	Net profit before tax

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Source: Drury (2023)

4.5 Relatively Saved and Relatively Exceeded Fixed Costs

In some situations, it is useful to analyze separately how the utilization of fixed costs affects profit development. For this purpose, costs can be evaluated at the level of predetermined full (absorption) costs. This approach makes it possible to measure whether fixed costs are used efficiently or inefficiently in relation to the achieved volume of output.

The analysis is based on the idea that fixed costs are planned for a certain level of activity. When actual output differs from the planned output, fixed costs per unit change, even though their total amount remains the same. By comparing linearly recalculated costs with the actual total costs, it is possible to determine whether fixed costs are relatively saved or relatively exceeded.

Linearly Recalculated Costs

Linearly recalculated costs (RCL) represent the level of total costs that would correspond to the actual volume of output if costs behaved exactly according to the plan. They are calculated by adjusting planned total costs to the actual output volume:

$$RCL = (TC_{pl} / Q_{pl}) * Q_{act}$$

where:

TC_{pl} – planned total costs,

Q_{pl} – planned output volume,

Q_{act} – actual output volume.

Relatively Saved Fixed Costs (RSFC)

Relatively saved fixed costs arise when actual output exceeds planned output ($Q_{act} > Q_{pl}$). In this case, fixed costs are spread over a higher number of units, which has a positive effect on profit.

$$RSFC = (FC / Q_{pl} * Q_{act}) - FC$$

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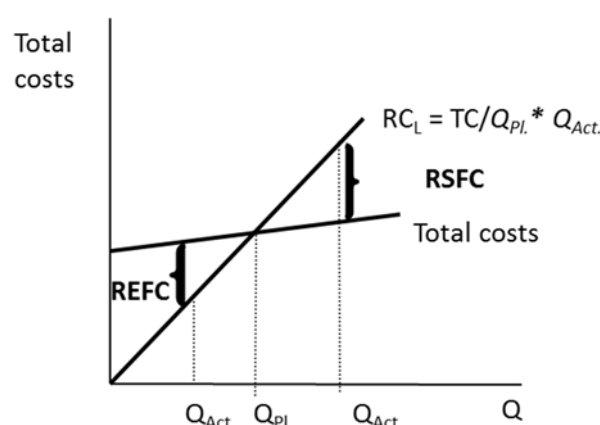
Relatively Exceeded Fixed Costs (REFC)

Relatively exceeded fixed costs arise when actual output is lower than planned output ($Q_{act} < Q_{pl}$). In this case, capacity is underutilized and fixed costs burden each unit more heavily, which negatively affects profit.

$$REFC = FC - (FC / Q_{pl} * Q_{act})$$

Relatively saved fixed costs represent a positive volume effect caused by higher capacity utilization, while relatively exceeded fixed costs represent a negative volume effect caused by underutilization of capacity. This analysis helps managers better understand how changes in output volume influence profit through fixed cost behavior. Graphically, you can see it in Figure 5.

Figure 5: Relatively exceeded and saved fixed costs



Source: Drury (2023)



Chapter summary

This chapter focused on the principles and application of absorption costing and marginal costing in managerial accounting. Absorption costing was presented as a method that assigns both variable costs and a share of fixed costs to products and is mainly used for pricing decisions and external reporting. Its limitations were highlighted, especially the arbitrary allocation of fixed overheads and the influence of inventory changes on reported profit.

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Marginal costing was introduced as a managerial tool that assigns only variable costs to products and treats all fixed costs as period costs. This approach allows managers to clearly identify the contribution of individual products to covering fixed costs and generating profit through the contribution margin. As a result, marginal costing provides more transparent information for short-term decision-making related to pricing, product mix, capacity utilization, and acceptance of special orders.

The chapter also explained how capacity utilization affects profit through fixed cost behavior. Concepts such as relatively saved and relatively exceeded fixed costs were used to evaluate the impact of changes in output volume on profitability. Finally, the chapter compared profit determination under absorption costing and marginal costing and demonstrated how the choice of costing method influences reported profit and managerial interpretation of business performance.



Key terms

Absorption costing
Marginal costing
Product costs

Profit and loss
Capacity utilization

Relatively saved fixed costs
Relatively exceeded fixed costs



Questions

1. What is absorption costing?
2. Which costs are included in product costs under absorption costing?
3. Why is absorption costing not suitable for some managerial decisions?
4. What is marginal costing?
5. Which costs are assigned to products under marginal costing?
6. What are fixed costs and how are they treated in marginal costing?
7. What is the contribution margin?
8. How does marginal costing help managers make decisions?
9. What does it mean when fixed costs are relatively saved?
10. Why can profit be different under absorption costing and marginal costing?

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Exercises

Exercise 4.1

The company printed three types of books: a 150-page book (B1), a 180-page book (B2), and a 230-page book (B3). The table below provides information about the production volume and direct material consumption in April. Other costs incurred during this month amount to CZK 2 430 000 and are classified as indirect costs.

Item	B1	B2	B3
Production volume (in units)	5 300	4 800	6 100
Direct material (in CZK)	954 000	624 000	1 281 000
Number of pages in one book	150	180	230

Tasks:

Allocate the total costs to each type of book using:

- the method of indirect cost allocation by simple dividing,
- the method of allocation using ratio numbers based on the number of pages.

Formulas:

$$\text{Direct material for one book} = \frac{\text{Direct material}}{\text{Volume of production}}$$

$$\text{Indirect cost} = \frac{\text{Other indirect cost}}{\Sigma Q}$$

$$\text{Ratio number} = \frac{\text{Number of pages}}{\text{Lowest number of pages}}$$

$$\text{Converted unit} = \text{Ratio number} * Q$$

$$\text{Cost on converted unit} = \frac{\text{Other cost}}{\Sigma \text{converted unit}}$$

$$\text{Indirect cost per 1 book} = \text{cost on converted unit} * \text{ratio number}$$

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Solution:

a) the method of indirect cost allocation by simple dividing

Item	B1	B2	B3
Direct material (in CZK)			
Indirect cost (in CZK)			
Total cost			

Indirect cost per one book =

b) the method of allocation using ratio numbers based on the number of pages

Item	B1	B2	B3
Production volume (in units)	5 300	4 800	6 100
Direct material (in CZK)	954 000	624 000	1 281 000
Number of pages in one book	150	180	230
Ratio number			
Converted unit			
Indirect cost per 1 book			

Indirect cost on converted unit =

Item	B1	B2	B3
Direct material (in CZK)			
Indirect cost (in CZK)			
Total cost			

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Exercise 4.2

The fitness centre offers four types of lessons: jumping, fitbox, pilates, and yoga. It is necessary to allocate the common operating costs of CZK 589 600 to each type of lesson. The table below provides information on the volume of lessons delivered.

Lesson	Volume of lessons
Jumping	75
Fitbox	70
Pilates	65
Yoga	58
Total	268

Task:

Allocate the common costs to each type of lesson based on the volume of lessons.

Solution:

Common costs per one lesson =

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Exercise 4.3

The company RENT owns a building and rents office space to tenants. In addition to rent, the company invoices the tenants once a year for their share of common operating costs (for example heating, water, and insurance).

The following table shows data for the year 2026:

	Tenant A	Tenant B	Tenant C	Total
Leased area (in m ²)	90	130	70	290
Price per 1 m ² per year (in CZK)	1 680	1 560	1 750	
Common costs (in CZK)				232 000

Tasks:

What amount of common costs will be paid by each tenant if the total common costs are allocated based on:

- a) leased area,
- b) annual rent.

Solution:

a) Common costs per 1 m² of leased area =

	Tenant A	Tenant B	Tenant C	Total
Leased area (in m ²)	90	130	70	290
Common costs (in CZK)				

b) Common costs per 1 CZK of rent =

	Tenant A	Tenant B	Tenant C	Total
Leased area (in m ²)	90	130	70	290
Price for 1 m ² per year (in CZK)	1 680	1 560	1 750	
Annual rent (in CZK)				
Common costs (in CZK)				

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Exercise 4.4

The company STEWARDESS produces the uniforms for stewardess. The costing units are three basic parts of the uniform: a vest, a skirt, and a cap.

Information about sales and production in April 2026 is shown in the table below:

Item	Vest	Skirt	Cap	Total
Sales volume (pcs)	1 200 pcs	1 100 pcs	1 120 pcs	
Selling price per unit (CZK)	CZK 1 800	CZK 2 500	CZK 750	
Production volume (pcs)	1 400 pcs	1 200 pcs	1 150 pcs	
Total direct material (CZK)	CZK 280 000	CZK 260 000	CZK 95 000	CZK 635 000
Direct labour hours (h)	2 100 h	1 500 h	900 h	4 500 h
Total direct wages (CZK)	CZK 273 000	CZK 180 000	CZK 126 500	CZK 579 500

Task:

1. Allocate common manufacturing overheads (CZK 2 950 000) to the three products based on direct labour hours. Then calculate the total cost per unit of one vest, one skirt, and one cap.
2. Determine the company's profit or loss if inventories are valued using absorption costing.

Solution:

1. Allocate common overheads (which were CZK 2 950 000) according to hours of work. Find out the total cost per one vest, one skirt and one cap.

Costs per 1 hour of direct wages =

Indirect costs for all vests =

Indirect costs per 1 vest =

Indirect costs for all skirts =

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Indirect costs per 1 skirt =

Indirect costs for all caps =

Indirect costs per 1 cap =

Item	Vest	Skirt	Cap
Direct material (CZK)			
Direct wages (CZK)			
Indirect costs (CZK)			
Total			

2. Find out profit or loss of company if the stocks are calculated by absorption costing.

2.1. Profit or loss based on costs incurred by period

Costs (CZK)		Revenues (CZK)	
Total costs		Total revenues	
Profit (CZK)			

2.2. Profit or loss based on cost of sales volume

Costs (CZK)		Revenues (CZK)	

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Total costs		Total revenues	
Profit (CZK)			

The difference in profit is due to rounding.

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Source of exercises: Šoljaková et al. (2011); Vlčková (2016)

5 Costing system and its use in management, methods of costing

A costing system is an essential part of managerial accounting, as it provides information about the costs of products, services, activities, and processes. By systematically collecting, classifying, and assigning costs, a costing system helps managers understand how resources are consumed and how costs are created. This information is crucial for pricing, cost control, profitability analysis, and decision-making.

This chapter introduces the main costing systems and methods of costing used in management. It explains how different costing approaches assign costs to cost objects and how these methods support various managerial tasks. The chapter also highlights the advantages and limitations of individual costing methods and shows how the choice of a costing system influences cost information, profit measurement, and managerial decisions.



Chapter objectives

The objectives of this chapter are to:

- explain the purpose and structure of costing systems,
- describe how costing systems support managerial planning, control, and decision-making,
- distinguish between preliminary costing and final costing,
- explain target costing, planned costing, operational costing, and final costing,
- analyze how specific production and product conditions influence the choice of costing methods,
- describe methods of evidence and costing in non-joint and joint production,
- explain the principles of activity-based costing and its main components,
- compare traditional costing methods with activity-based costing,
- evaluate the advantages and limitations of different costing methods for management use.

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5.1 Basic terminology according to CIMA (2005)

By-product

Output of some value produced incidentally in manufacturing something else.

Common cost

Cost relating to more than one product or service.

Cost management

The application of managerial accounting concepts, methods of data collection, analysis and presentation in order to provide the information required.

Cost pool

The point of focus for the costs relating to a particular activity in an ABC system.

Cost reduction

The reduction in unit cost of goods or services without impairing suitability for the use intended.

Facility-sustaining activities

Activities undertaken to support the product as a whole and which cannot be logically linked to individual units of output.

Joint costs

The costs of a process which results in more than one main product.

Joint products

Two or more products produced by the same process and separated in processing, each having a sufficiently high saleable value.

Period cost

A cost which relates to a time period rather than to the output of products or services.

5.2 Costing System and Its Use in Management

Costing is one of the most important tools of managerial accounting. It provides information about the cost of products, services, and activities and supports many managerial decisions. Costing is used mainly for:

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- cost control and cost-effectiveness management by comparing planned and actual costs,
- internal (transfer) pricing, where costs are used to value internal products and services and to measure internal revenues and costs of responsibility centres,
- pricing decisions for external customers,
- preparation of plans and budgets, as costing provides key input data,
- decisions about production volume and product mix,
- make-or-buy decisions (whether to produce internally or purchase from external suppliers),
- valuation of internally produced assets.

These managerial tasks cannot be supported by a single cost calculation. Instead, they require a system of cost calculations that are interconnected and used at different stages of the business process. This system of calculations is called a costing system. Costing systems differ in their content, structure, and timing.

Preliminary and Final Costing

Based on the time horizon, costing can be divided into preliminary costing and final costing.

Preliminary costing is prepared before production starts and is mainly used for planning and decision-making. It helps managers estimate future costs and assess whether planned production is economically feasible. Preliminary costing includes target costing, planned costing, and operational costing.

Final costing is prepared during or after production, or after products are sold. It shows the actual costs incurred and is mainly used for cost control and performance evaluation.

Target Costing

Target costing is prepared during the research, development, and preparation phase of a new product, when production and sales have not yet started. The main purpose of target costing is to ensure that the product can be produced at a cost that allows the company to achieve the desired profit at an expected market price.

In target costing, future costs are estimated based on expected product characteristics, functionality, and quality. This costing is usually prepared at the end of the development phase and before technical and technological preparation of production. It serves as a cost limit for design and production departments.

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In custom production, target costing expresses the expected total cost of an individual product and forms the basis for price offers and price negotiations with customers. Because detailed standards and norms are not yet available, target costing uses estimates, experience, and data from similar products. Target costing is usually prepared at full cost, often including selling and administrative expenses, and retrograde calculation is used to check whether the planned price covers all costs and profit.

Planned Costing

Planned costing is prepared for a defined budget period and expresses the level of costs that should be achieved during that period. It is mainly used in repetitive and mass production, where production conditions are relatively stable.

Planned costing is compiled when technological procedures, standards, and norms are already known. It reflects expected production conditions and is based on predetermined unit costs.

Planned costing can take two forms:

- costing for sub-periods, which reflects expected cost changes during the period,
- costing for the entire budget period, calculated as a weighted average of sub-period costs, where production volume is used as the weight.

Planned costing is an important input for preparing the budgeted income statement, cash flow statement, and balance sheet.

Operational Costing

Operational costing is a more detailed form of preliminary costing. It expresses predetermined costs that correspond to specific technical and technological conditions. Compared to planned costing, it provides more precise cost information for a given situation.

Operational costing can also be prepared in two forms:

- operational costing for sub-periods,
- operational costing for the whole period, calculated as a weighted average of sub-period operational costs, using planned or actual production volume as the weight.

Operational costing is used mainly for short-term control and comparison with actual costs.

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Final Costing

Final costing shows the actual costs incurred during a certain period or the actual average cost per unit of output. It is used to evaluate cost efficiency by comparing actual costs with planned or operational costs.

Final costing is especially important in custom production and in production with a long production cycle. In mass and series production with a short production cycle, cost control is usually performed at the level of responsibility centres rather than individual products.

Final costing is most informative for analyzing unit costs and is typically prepared using absorption costing, which allows the determination of the actual full cost of the final product.

Didactic Summary:

- Preliminary costing → planning and decision-making
- Target costing → market and profit-oriented
- Planned and operational costing → budget control
- Final costing → actual performance measurement and evaluation

5.3 Influence of Specific Conditions on Product Management

The choice and use of a costing system depend on the specific conditions under which products are created and sold. Different production processes, product types, and customer relationships require different approaches to cost calculation and product management. Understanding these conditions helps managers select appropriate costing methods and correctly interpret cost information.

Nature of the production process

From the technological point of view, production processes can be divided into organic production and heterogeneous production. In organic production, the production process is continuous and technologically closed. Individual stages cannot be clearly separated, and outputs are created gradually. Typical examples include chemical production or energy generation. In this type of production, costing focuses mainly on the total process rather than on individual products.

In heterogeneous production, the production process consists of separate operations or stages, and different products can be clearly identified. This allows costs to

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be traced or allocated to individual products more easily. Most manufacturing enterprises operate under heterogeneous production conditions.

Type of product

Products can be classified as homogeneous or heterogeneous, which has a direct impact on cost calculation. A homogeneous product is a single, uniform product. All costs, revenues, and balance sheet items relate directly to this product, and costing is relatively simple.

A heterogeneous product portfolio consists of several different products or performances. In this case, it is necessary to distinguish between costs that can be directly attributed to individual products and costs that are common to several products. The allocation of common costs becomes an important managerial issue.

Unitarity of the production process

A non-unitary process is technologically closed and cannot be divided into separate sub-phases. Costs are accumulated for the entire process, and outputs are usually measured only at the end of production.

A unitary process takes place in several phases, in which different volumes of outputs are created. This makes it possible to track costs by phases or departments and supports more detailed cost control.

Relationship between product and customer

The relationship between the product and the customer also influences costing and product management. In mass production, large quantities of standardized products are produced for a broad market. Costing focuses on average unit costs and efficiency.

In series production, products are manufactured in batches. Costing must take into account setup costs and batch-related overheads.

In piece (custom) production, products are made according to specific customer requirements. Costing is usually performed per order or project, and accurate cost tracking is essential for pricing and profitability analysis.

Existence of work in progress

The existence and stability of work in progress significantly affect cost calculation and profit measurement. In some industries, work in progress does not exist, for

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example in energy production. In other industries, work in progress is relatively stable and does not change significantly over time, such as in footwear production.

In industries like heavy engineering or construction, work in progress fluctuates considerably. In these cases, accurate valuation of unfinished production is crucial for correct profit determination.

Joint products

In joint production, two or more products are created simultaneously from a single input, and the ratio between them cannot be easily influenced. A typical example is oil refining. In such cases, joint costs must be allocated to individual products using appropriate allocation methods.

In non-joint production, products are produced independently and costs can be assigned to individual outputs more directly.

Managerial implications

These specific conditions influence how costs are measured, allocated, and interpreted. Managers must consider production technology, product structure, customer requirements, and process organization when designing a costing system. A costing method that is suitable under one set of conditions may provide misleading information under different conditions.

5.4 Methods of Evidence and Costing

The method of evidence and costing depends mainly on the character of the production process. A basic distinction is made between non-joint production and joint production. Each type requires a different approach to cost tracking and product valuation.

5.4.1 Non-joint production

In non-joint production, products are created independently and costs can be assigned to individual outputs. Four basic methods of evidence and costing are used: the basic method, the phase method, the stepped method, and the custom production method. You can see principles of all non-joint production methods in Diagram 6 – 9.

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a) Basic method of management costs

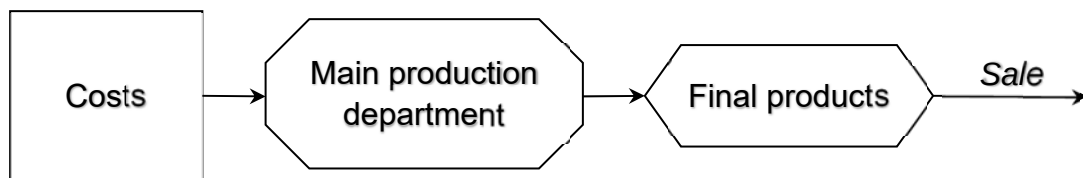
In the basic method, individual production departments produce complete final products. Costs are classified at least into direct and indirect costs, and in more detailed systems also into unit costs and overhead costs.

Costs incurred in service and administrative departments are monitored by departments, and part of these internal costs can be transferred to production departments. Products are valued at predetermined cost levels, and variances between actual and predetermined costs are identified.

Final costing is calculated using simple division, where total actual costs are divided by the volume of finished products:

$$\text{Final costing} = \text{Actual costs} / \text{Volume of finished products}$$

Diagram 6: Basic method



Source: Král (2019), own processing

This method is suitable for simple production with a single type of product.

b) Phase method of management costs

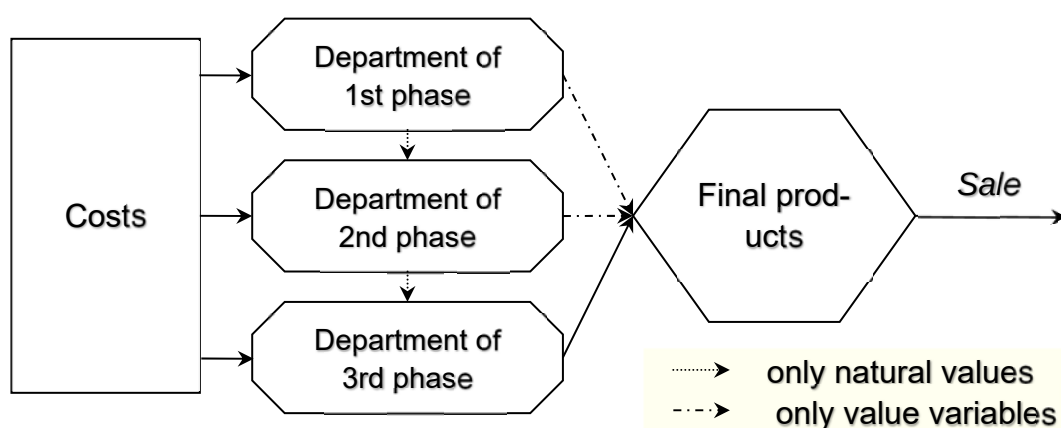
In the phase method, several departments participate in the production of one final product. The production process is divided into phases that differ in character, volume, and place of production. Costs of the main activity are monitored separately for each phase.

Costs of service and administrative activities are monitored by departments in a similar way as in the basic method, and part of these costs may be transferred to production phases as internal costs.

Products transferred between phases are not valued individually. Only completed production and changes in work in progress are recorded in value terms. Cost efficiency is evaluated at each phase. Final costing is determined as a proportion of actual costs incurred in individual phases and the volume of output achieved in each phase.

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Diagram 7: Phase method



Source: Král (2019), own processing

c) Stepped method of management costs

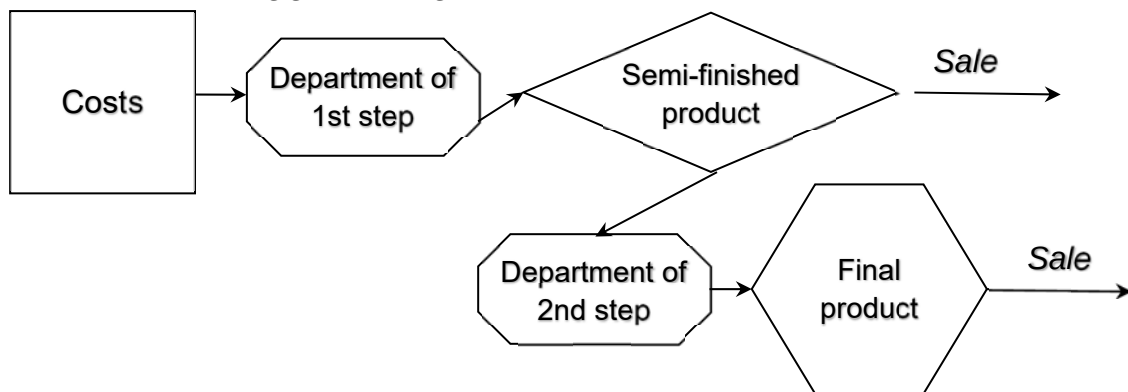
The stepped method is similar to the phase method, but the outputs of individual steps are semi-finished products. These semi-finished products can either be further processed in subsequent steps or sold to external customers.

Costs of the main activity are monitored separately for each step. In addition to primary costs, the costs also include consumed semi-finished products from other departments. Unlike the phase method, these transfers are recorded in value terms between the supplying and receiving departments.

Semi-finished products are valued and treated as separate cost items. This method allows better control of costs and profitability at each production step.

Diagram 8: Stepped method

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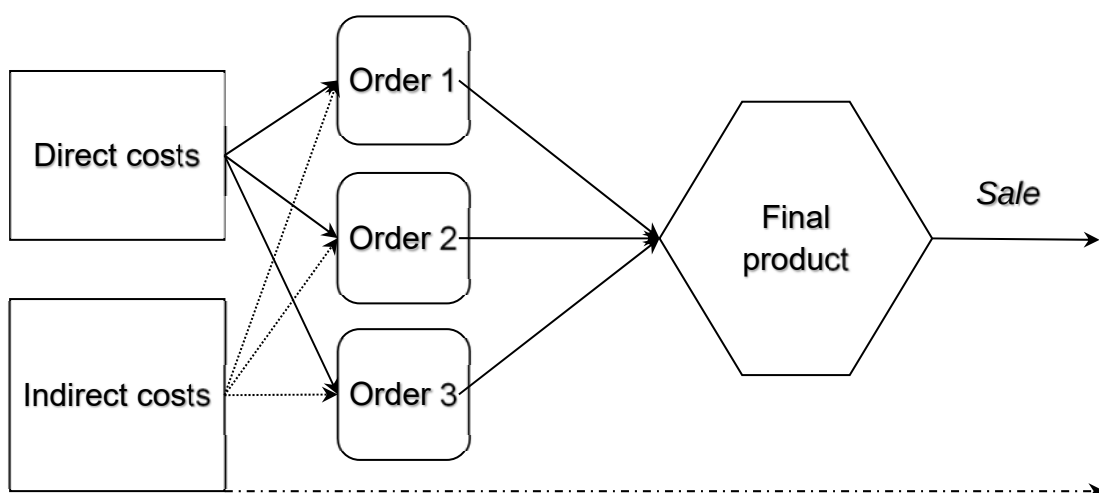
Source: Král (2019), own processing

d) Custom production method of management costs

The custom production method focuses on monitoring the costs of individual orders or projects. It is used in activities where products are tailored to the specific requirements of customers, such as construction, custom manufacturing, or specialized services.

Direct costs are assigned directly to individual orders at the moment they are incurred. Indirect costs are accumulated in cost centres and later allocated to orders using appropriate allocation bases. Final costing is usually prepared after the order is completed and is used to evaluate profitability and cost efficiency.

Diagram 9: Custom production method



Source: Král (2019), own processing

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5.4.2 Joint production

Joint production occurs when one production process generates two or more products simultaneously, and the ratio between these products can be influenced only to a limited extent. Typical examples include agriculture and food processing, oil refining, coal processing, or salt production.

The outputs of joint production are called joint products. These products are usually divided into main products and by-products. Main products are the primary objective of production and represent the core outputs of the company. By-products are produced unavoidably together with main products, have lower value, but can still be sold or further processed.

Costs incurred in joint production are common to all products and are referred to as joint costs. These costs must be allocated to individual products using appropriate methods.

Joint costs can be allocated using two basic approaches. The first approach is based on value bases, such as selling price, sales revenue, or contribution to sales. The second approach is based on natural bases, such as volume, weight, or quantity. In methods based on physical units, a large part of joint costs is usually allocated to the main product.

Evaluation of secondary performance (by-products)

By-products can be evaluated using two basic methods:

1. In the counting method, by-products are treated in a similar way to main products and are allocated a share of joint costs.
2. In the subtraction method, revenue from the sale of by-products is deducted from total joint costs. The remaining costs are then allocated to main products.

5.5 Activity-Based Costing (ABC)

Activity-Based Costing (ABC) is a modern costing method that was developed to overcome the limitations of traditional absorption costing. ABC is based on a different way of thinking about costs, focusing on the real causes of cost creation.

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The basic idea of ABC is that activities consume resources and products consume activities. For this reason, costs are not assigned directly to products, but first to activities that take place in the company.

Activities and Activity Cost Pools

In ABC, activities must first be identified. Activities are specific tasks or processes that generate costs. Typical examples of activities include machine set-ups, purchasing raw materials, inspections, quality control, production planning, or customer service.

The costs related to each activity are collected into an activity cost pool. An activity cost pool represents the total cost of performing a specific activity during a given period, usually one year.

Cost Drivers

Traditional absorption costing usually allocates overhead costs using only one or two allocation bases, such as direct labour hours or machine hours. In contrast, ABC uses multiple cost drivers, which better reflect the actual consumption of resources.

A cost driver is a factor that causes the cost of an activity to increase. Each activity has its own cost driver that explains why costs are incurred.

Examples of activity cost pools and cost drivers include:

Activity cost pool	Cost driver
Purchase of raw materials	The number of purchase orders
Machine set-up costs	The number of set-ups
Cost of machining products	The number of machine hours
Inspection costs	The number of inspections carried out

Cost Driver Rates

For each activity, a cost driver rate is calculated. This rate is used to assign activity costs to products based on how much each product uses the activity.

The cost driver rate is calculated as:

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Costs of the activity cost pool / Number of cost drivers for the activity

Products that require more activities (for example more set-ups or inspections) will be assigned a higher share of overhead costs.

Benefits and Limitations of Activity-Based Costing

Activity-Based Costing provides more accurate cost information than traditional absorption costing, especially in companies with high overhead costs and a wide range of products.

Because overhead costs are assigned using cost drivers based on cause-and-effect relationships, product costs calculated under ABC better reflect actual resource consumption. This makes ABC cost information more useful for managerial decision-making, such as pricing, product mix decisions, cost control, and process improvement.

ABC also supports activity-based management. By understanding which activities generate costs and why, managers can identify inefficient or unnecessary activities and focus on improving processes and maximizing value from available resources.

Although ABC provides detailed and accurate cost information, it is more complex and time-consuming than traditional costing systems. It requires a large amount of data and regular updates. For this reason, ABC is mainly used as a managerial tool and is less suitable for small companies or for external financial reporting.



Chapter summary

This chapter explained the role of costing systems in managerial accounting and their use in management. Costing systems provide structured information about the costs of products, services, activities, and processes and support key managerial tasks such as planning, budgeting, pricing, cost control, and profitability analysis. The chapter showed that no single cost calculation is sufficient and that a system of interconnected cost calculations is required.

The chapter distinguished between preliminary costing and final costing. Preliminary costing is used for planning and decision-making before production starts and includes target costing, planned costing, and operational costing. Final costing reflects actual costs incurred and is used for cost control and performance evaluation. The chapter also emphasized how specific production conditions, product

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characteristics, customer relationships, and the existence of work in progress influence the choice of costing methods.

Different methods of evidence and costing were presented for non-joint and joint production, including basic, phase, stepped, and custom production methods. Special attention was given to joint production and the allocation of joint costs. Finally, the chapter introduced Activity-Based Costing as a modern approach that assigns costs based on activities and cost drivers, providing more accurate cost information and better support for managerial decision-making, while also recognizing its higher complexity and data requirements.



Key terms

Costing system	Target costing	Joint production
Preliminary costing	Planned costing	Joint costs
Final costing	Operational costing	Activity-Based Costing



Questions

1. What is a costing system and why is it important for management?
2. How does a costing system support planning and budgeting?
3. What is the difference between preliminary costing and final costing?
4. What is target costing and when is it used?
5. What is planned costing and how does it differ from operational costing?
6. What is final costing and what is its main purpose?
7. How do specific production conditions influence the choice of costing methods?
8. What is the difference between joint production and non-joint production?
9. What is Activity-Based Costing and how does it differ from traditional costing?
10. What is a cost driver and why is it important in ABC?

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Exercises



Exercise 5.1

The company produces stone desks and mosaic stone cubes. Production takes place in two steps. In the first step, stone desks are produced. In the second step, mosaic stone cubes are produced by cutting stone desks into cubes. Currently, 1 stone desk produces 1.5 m² of mosaic cubes.

During the period, 52 000 stone desks were used for cube production. The company sold 75 000 m² of mosaic cubes at a price of CZK 200 per 1 m² and 7 000 stone desks at a price of CZK 150 per desk.

Additional information is provided in the table below:

Phase	Costs	Volume of production
Stone abrasion (stone desks)	CZK 8 600 000	60 000 pieces
Production of mosaic stone cubes	CZK 1 750 000	78 000 m ²

Tasks:

1. Determine the unit cost of the desk used as an input into cube production and the unit cost per 1 m² of cubes.
2. Determine the economic result (profit or loss) under two approaches:
 - a) using a profit and loss statement based on costs incurred in the period (period costing),
 - b) using a profit and loss statement based on the cost of products sold (cost of sales approach).

Solution:

1. Determine the unit cost of the desk used as an input into cube production and the unit cost per 1 m² of cubes.

Cost per one desk =

Cost per 1 m² of mosaic stone cube:

- a) Cost per 1 m² of mosaic stone cubes from stone desks=

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b) Cost of processing (production) of mosaic stone cubes per 1 m² =

Total cost per 1 m² of mosaic stone cube =

2. Determine the economic result (profit or loss) under two approaches:

a) using a profit and loss statement based on costs incurred in the period

Profit and loss statement	
Cost (in thousand CZK)	Revenues (in thousand CZK)

b) using a profit and loss statement based on the cost of products sold

Profit and loss statement	
Cost (in thousand CZK)	Revenues (in thousand CZK)

Exercise 5.2

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The company determined monthly production costs for the second quarter (April–June) for the production of 10 000 units of a homogeneous dairy product (yogurt milk). Monthly costs are as follows:

- Direct material costs: CZK 50 000
- Direct labour costs: CZK 20 000
- Production overhead costs: CZK 60 000, of which
 - fixed overhead costs are CZK 50 000, and
 - variable overhead costs are CZK 1 per unit.
- The selling price is CZK 20 per unit.

Task:

Determine the profit or loss using absorption costing and marginal costing, assuming production is 10 000 units each month, but sales differ:

- a) In April, all units produced are sold.
- b) In May, only 8 000 units are sold and 2 000 units increase inventory.
- c) In June, 12 000 units are sold and inventory decreases by 2 000 units.

Solution:

Profit or loss under absorption costing (cost of goods sold approach), in CZK:

Month	April	May	June
Production (units)			
Product sold (units)			
Revenues from sales (CZK)			
Cost of units sold (CZK)			
Profit (CZK)			

Profit or loss under marginal costing (cost of goods sold approach), in CZK:

Month	April	May	June
Production (units)			
Product sold (units)			

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Revenues from sales (CZK)			
Variable costs of units sold (CZK)			
Contribution (CZK)			
Fixed costs (CZK)			
Profit (CZK)			

Exercise 5.3

The enterprise purchases whole chickens, which are processed into joint products and a by-product. During processing, the chickens are cut into chicken legs and chicken breasts. The remaining parts are sold as a by-product in the form of a soup mix. From 10 kg of whole chickens, the company obtains 3 kg of chicken legs, 5 kg of chicken breasts, 2 kg of soup mix (by-product).

The selling price is CZK 65 per kg for legs, CZK 90 per kg for breasts, and CZK 20 per kg for the soup mix.

The purchase price of whole chickens is CZK 30 per kg. In the reporting period, the enterprise purchased 2 000 kg of chickens. The total joint processing costs (including purchase and additional processing costs) include secondary processing costs amounting to CZK 37 000.

Tasks:

Determine the cost per 1 kg for each product using:

- allocation of joint costs based on relative selling price,
- allocation of joint costs based on physical output (weight).

Solution:

Total joint costs:	Products:

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a) allocation of joint costs based on relative selling price

Item	Legs	Breast	Mix for soup	Total
Volume	600 kg	1000 kg	400 kg	2000 kg
Price per 1 kg	65 CZK	90 CZK	20 CZK	
Revenues from sales				
The revenue share				
The cost share				
Cost per 1 kg				
Profit per 1 product				

b) allocation of joint costs based on physical output (weight).

Item	Legs	Breast	Mix for soup	Total
Volume	600 kg	1000 kg	400 kg	2000 kg
Price per 1 kg	65 CZK	90 CZK	20 CZK	
The volume share				
The cost share				
Cost per 1 kg				
Profit per 1 product				

Exercise 5.4

The company produce two products and has provided the following information.

Item	Product 1	Product 2	Total
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Production (units)	30 000	5 000	35 000 units
Direct material per unit	EUR 20	EUR 15	EUR 675 000
Direct labour per unit	EUR 10	EUR 5	EUR 325 000
Machine hours per unit	1 h	2 h	40 000 hours
Number of machine settings	8 times	20 times	28 times
Number of material supplies	50 times	80 times	130 times

Item	Overhead costs	Cost driver
Processing of production	800 000 EUR	Number of machine hours
Settings	140 000 EUR	Number of machine settings
Material supply	260 000 EUR	Number of material supplies

Task:

What are the costs per unit of each product? Use the ABC method.

Solution:

Cost for processing =

Cost for machine settings =

Cost for material supply =

Cost for machine settings:

Product 1 =

Product 2 =

Cost for material supply:

Product 1 =

Product 2 =

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Costs	Product 1	Product 2
Direct material per unit		
Direct labour per unit		
Processing cost		
Settings cost		
Supply cost		
Total		

Exercise 5.5 (with results)

The company has a single production centre and has provided the following budgeted information for the next period. Direct labour is paid EUR 8 per hour. Other important data is in the following table.

	Product A	Product B	Product C	Total
Production (units)	40 000	25 000	10 000	75 000
Direct material per unit (EUR)	25	20	18	1 680 000
Direct labour hours per unit (EUR)	3	4	2	240 000
Machine hours per unit (h)	2	4	3	210 000
Number of production runs	5	10	25	40
Number of component receipts	15	25	120	160
Number of production order	15	10	25	50

Overhead costs in the period are expected to be as follows:

	Overhead costs
Set-up	EUR 140 000
Machine	EUR 900 000
Goods inwards	EUR 280 000
Packing	EUR 200 000

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Engineering	EUR 180 000
Total	EUR 1 700 000

Tasks:

What are the unit costs of each product using the traditional approach based on labour hours and using the ABC method?

Solution:

a) A traditional costing approach would cost each product as follows:

	Product A	Product B	Product C
Direct materials (EUR)	25	20	18
Direct labour (EUR)	8 * 3 = 24	8 * 4 = 32	8 * 2 = 16
Overheads (EUR)	7,08 * 3 = 21,24	7,08 * 4 = 28,32	7,08 * 2 = 14,16
Total cost per unit	EUR 70,24	EUR 80,32	EUR 48,16

$$\text{Overhead recovery rate} = \text{Total overheads} / \text{Total direct labour hours} = \\ 1\,700\,000 / 240\,000 = \text{EUR } 7,08 \text{ per direct labour hour}$$

b) An ABC system needs to identify the cost drivers for the overheads. Assume that these are as follows:

Cost	Cost driver
Set-up	Number of production runs
Machine	Number of machine hours
Goods inwards	Number of receipts
Packing	Number of production orders
Engineering	Number of production orders

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The machine overhead of EUR 900 000 is likely to be related primarily to production volume, so it will be recovered on the basis of machine hours used =

$$900\,000 / 210\,000 = \text{EUR } 4,29 \text{ per machine hour.}$$

The cost per activity for each of the other cost centres is as follows:

$$\text{Set-up cost} = 140\,000 / 40 = \text{EUR } 3\,500 \text{ per production run}$$

$$\text{Goods inwards} = 280\,000 / 160 = \text{EUR } 1\,750 \text{ per component receipt}$$

$$\text{Packing} = 200\,000 / 50 = \text{EUR } 4\,000 \text{ per production order}$$

$$\text{Engineering} = 180\,000 / 50 = \text{EUR } 3\,600 \text{ per production order}$$

The ABC approach would allocate overheads to each of the product groups as follows:

	Product A	Product B	Product C
Set-up costs (EUR)	5 * 3 500 = 17 500	10 * 3 500 = 35 000	25 * 3 500 = 87 500
Machine costs (EUR)	2 * 40 000 * 4,29 = 343 200	4 * 25 000 * 4,29 = 429 000	3 * 10 000 * 4,29 = 128 700
Goods inwards costs (EUR)	15 * 1 750 = 26 250	25 * 1 750 = 43 750	120 * 1 750 = 210 000
Packing costs (EUR)	15 * 4 000 = 60 000	10 * 4 000 = 40 000	25 * 4 000 = 100 000
Engineering costs (EUR)	15 * 3 600 = 54 000	10 * 3 600 = 36 000	25 * 3 600 = 90 000
Total overhead cost (EUR)	500 950	583 750	616 200
Average overhead per unit (EUR)	12,52	23,35	61,62
Direct material (EUR)	25	20	18
Direct labour (EUR)	3 * 8 = 24	4 * 8 = 32	2 * 8 = 16

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Total unit cost (EUR)	61,52	75,35	95,62
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When compared to the traditional overhead absorption rate it can be seen that product C is significantly under-costed using the traditional system, while products A and B are over-costed. This situation arises because the large proportion of cost driven by product C are not picked up under the traditional costing system. Since it is the cost-drivers identified in the ABC system which generate the costs in the first place, the ABC system will produce a more accurate final analysis.

Source of exercises: Šoljaková et al. (2011); Vlčková (2016)

6 Budgetary system, type of budgets, management of overheads

A budgetary system is a key tool of managerial accounting that supports planning, coordination, and control within an organization. Budgets translate strategic objectives into concrete financial and quantitative plans for a defined period. They help managers allocate resources, set performance targets, and monitor whether actual results correspond to planned values.

This chapter introduces the structure of the budgetary system and explains the main types of budgets used in management. It also focuses on the management of overhead costs, which represent a significant and often difficult-to-control part of total costs. By understanding budgeting principles and overhead management, managers can improve cost control, enhance efficiency, and support informed decision-making at different levels of the organization.



Chapter objectives

The objectives of this chapter are to:

- explain the role of the budgetary system in managerial accounting,
- define budgeting and its importance for planning and control,
- describe the main stages of the budgeting process,
- identify and explain different types of budgets used in management,
- distinguish between fixed, variably recalculated, and linearly recalculated budgets,
- explain how budgets are used for performance evaluation and control,
- analyze the role of budgets in cost control and overhead management,

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- explain the responsibilities of managers, budget officers, and accounting staff in the budgeting process,
- demonstrate how budget control supports efficiency and effective decision-making.

6.1 Basic terminology according to CIMA (2005)

Planning

The establishment of objectives, and the formulation, evaluation and selection of the policies, strategies, tactics and action required to achieve them. Planning comprises long-term / strategic planning, and short-term / operation planning. The latter is usually for a period of up to one year.

Rolling forecast

A continuously updated forecast whereby each time actual results are reported a further forecast period is added and intermediate period forecasts are updated.

Strategic managerial accounting

A form of managerial accounting in which emphasis is placed on information which relates to factors external to the firm, as well as non-financial information and internally generated information.

Strategic plan

A statement of long-term goals along with a definition of the strategies and policies which will ensure achievement of these goals.

Budget

A quantitative statement, for a defined period of time, which may include planned revenues, expenses, assets, liabilities and cash flows. A budget provides a focus for the organisation aids the co-ordination of activities and facilitates control. Planning is achieved by means of a fixed master budget, whereas control is generally exercised through the comparison of actual costs with a flexible budget.

Budget centre

A section of an entity for which control may be exercised and budgets prepared.

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Budget cost allowance / flexed budget

The budgeted cost ascribed to the level of activity achieved in a budget centre in a control period. It comprises variable costs in direct proportion to volume achieved and fixed costs as a proportion of the annual budget.

Departmental /functional budget

A budget of income and / or expenditure applicable to a particular function. A function may refer to a department or a process. Functional budgets frequently include:

- production cost budget,
- marketing cost budget, sales budget,
- personnel budget,
- purchasing budget,
- research and development budget.

Fixed budget

A budget which is normally set prior to the start of an accounting period and which is not changed in response to subsequent changes in activity or costs / revenues. Fixed budgets are generally used for planning purposes.

Flexible budget

A budget which by recognising different cost behaviour patterns is designed to change as volume of activity changes.

Imposed / top-down budget

A budget allowance which is set without permitting the ultimate budget holder to have the opportunity to participate in the budgeting process.

Master budget

The budget into which all subsidiary budgets are consolidated, normally comprising budgeted profit and loss account, budgeted balance sheet and budgeted cash flow statement. These documents and the supporting subsidiary budgets are used to plan and control activities for the following year.

Participative / bottom-up budgeting

A budgeting system in which all budget holders are given the opportunity to participate in setting their own budgets.

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Relevant range

The activity levels within which assumptions about cost behaviour in breakeven analysis remain valid.

Rolling / continuous budget

A budget continuously updated by adding a further accounting period (month or quarter) when the earliest accounting period has expired. Its use is particularly beneficial where future costs and / or activities cannot be forecast accurately.

Zero-based budgeting

A method of budgeting which requires each cost element to be specifically justified, as though the activities to which the budget relates were being undertaken for the first time. Without approval the budget allowance is zero.

6.2 Budgeting

Budgeting is a fundamental part of the managerial planning and control system. A budget is a formal plan that expresses an organization's financial and operational goals for a future period. It translates strategic intentions into concrete targets for revenues, costs, activities, and resource use.

Budgeting helps managers allocate resources, formulate plans, and evaluate performance. Budgets are prepared in advance and later compared with actual results in order to identify variances and take corrective actions. Poor budgeting and unrealistic planning can lead to serious managerial errors and ineffective decision-making. For this reason, budgeting is an integral part of the long-term planning system of an organization.

Most budgets are prepared for a twelve-month period. This period can be divided into twelve calendar months or into thirteen four-week periods. An alternative approach is rolling (continuous) budgeting, where the budget is updated regularly. In this system, the budget is usually detailed by months for the next three months and by quarters for the remaining nine months. Rolling budgeting ensures that planning is not a one-time annual activity, but a continuous process that reflects expected changes in the business environment. Rolling budgets are typically updated quarterly and require managers to anticipate future developments.

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6.3 Use of Budgeting in Management

Budgeting supports management in many important areas. It helps control income and expenditure and ensures that resources are used efficiently. Budgets establish priorities and objectives and provide direction and coordination across departments. They assign responsibilities to budget holders and communicate management targets to employees.

Budgeting also plays an important motivational role. Clearly defined and achievable targets can motivate employees and improve efficiency. At the same time, budgets are a key tool for monitoring performance and evaluating whether planned objectives have been achieved. Budgets also help management assess whether the company has sufficient resources to implement its plans.

6.4 Budget Administration and Responsibility

For budgeting to function effectively, suitable administrative procedures must be established. Budgets must be realistic, internally consistent, and properly coordinated. If a budget does not reflect a reasonable and achievable level of performance, it will not be approved and must be revised and resubmitted.

Unrealistic budgets do not motivate managers and employees and may lead to dysfunctional behavior. The role of the budget officer is to coordinate individual budgets and ensure consistency across the organization. Accounting staff support managers in preparing budgets by providing data, methods, and advice. However, they do not determine the content of budgets, as responsibility for budget targets lies with management.

A budget manual is often used to describe the objectives, procedures, and responsibilities involved in the budgeting process. It serves as a reference document for managers and may include a timetable specifying the sequence of budget preparation and deadlines for submission.

6.5 Types of Budgets

Budgets can be classified in several ways depending on their purpose, time horizon, and content. In managerial accounting, the most common classification is based on the function the budget performs within the organization. Each type of budget focuses on a different aspect of business activity, but all budgets must be mutually consistent and coordinated.

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The master budget represents a comprehensive summary of all individual budgets prepared within the organization. It includes operating budgets, capital budgets, and financial budgets, and it results in budgeted financial statements.

Operating Budgets

Operating budgets relate to the main operating activities of the company. They are prepared for a short-term period, usually one year, and are relatively detailed. Operating budgets form the basis of the master budget.

The most important operating budgets include the sales budget, which estimates the expected sales volume and revenues. The sales budget is usually the starting point for the entire budgeting process, as many other budgets depend on planned sales.

Other operating budgets include the production budget, material purchases budget, direct labour budget, and overhead budgets. These budgets specify the resources needed to achieve planned sales and production levels.

Capital Budget

The capital budget focuses on long-term investment decisions. It includes planned expenditures on fixed assets such as machinery, equipment, buildings, or technology. Capital budgets usually cover a longer time horizon than operating budgets.

Because capital investments involve large amounts of money and long-term consequences, capital budgets must be carefully evaluated using appropriate investment appraisal methods. The goal of capital budgeting is to ensure that investments contribute to the long-term objectives and value of the company.

Financial Budgets

Financial budgets summarize the financial impact of operating and capital budgets. They focus on the financial position, liquidity, and financing needs of the company.

The most important financial budget is the cash budget, which shows expected cash inflows and outflows and helps identify potential cash shortages or surpluses. Financial budgets also include budgeted financial statements, such as the budgeted income statement, budgeted balance sheet, and budgeted cash flow statement.

Fixed and Flexible Budgets

Budgets can also be classified according to their relationship to activity levels. A fixed budget is prepared for one specific level of activity and does not change if

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actual output differs from the plan. Fixed budgets are suitable when activity levels are stable.

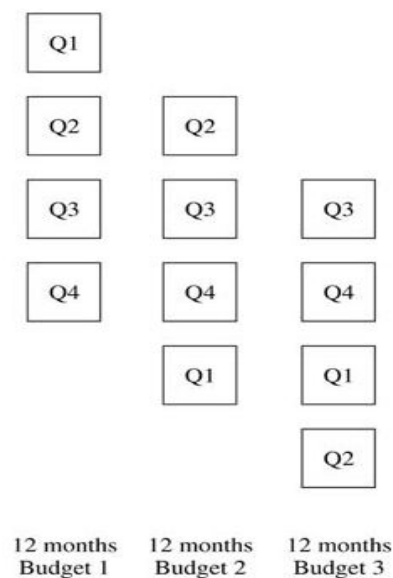
A flexible budget adjusts costs and revenues to different levels of activity. It is particularly useful for performance evaluation, as it allows managers to compare actual results with a budget that reflects the actual volume of activity.

Rolling Budgets

Rolling budgets, also called continuous budgets, are regularly updated by adding a new budget period as the current period ends (see Diagram 10). This ensures that the planning horizon remains constant and that budgets reflect the most recent information.

Rolling budgets improve responsiveness to changes in the business environment and support continuous planning and control.

Diagram 10: Rolling budget



Source: Drury (2023)

6.6 Budgeting Process

The budgeting process consists of several logically connected stages. These stages ensure that budgets are prepared in a structured way, are realistic, and support

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effective planning and control. Budgeting is not a one-time activity, but a continuous managerial process.

Communicating budget policy and guidelines

The first stage of the budgeting process is the communication of budget policy and guidelines to responsible managers. Top management must clearly communicate the objectives and priorities arising from the long-term plan. These guidelines may include expected changes in the sales mix, expansion or reduction of certain activities, cost limits, or investment priorities. Clear communication ensures that all managers prepare their budgets in line with the overall strategy of the company.

Determining the limiting factor

In the next stage, the factor that restricts output for the given period must be identified. This factor is often referred to as the limiting or key factor. In most companies, the main limiting factor is sales demand, but it may also be production capacity, availability of labour, raw materials, or financial resources. Identifying the limiting factor is essential, because all other budgets must be prepared with this restriction in mind.

Preparation of the sales budget

The sales budget is usually the starting point of the budgeting process. It determines the expected sales volume and revenues and therefore sets the level of the company's overall activities. Preparing the sales budget is often the most difficult step, as it depends on market conditions, customer behavior, competition, and economic trends. Once the sales budget is prepared, other budgets can be derived from it.

Initial preparation of individual budgets

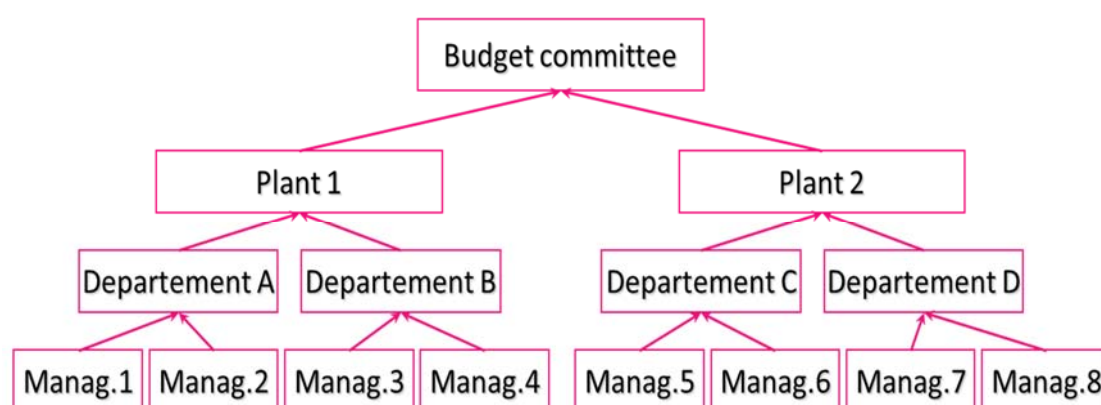
The preparation of budgets should follow a bottom-up approach (see Diagram 11). Budgets should be prepared at the lowest appropriate management level, where the best knowledge of operations exists. These initial budgets are then refined, coordinated, and reviewed at higher management levels. Managers use the guidelines provided by top management when preparing the content of their budgets.

Negotiation of budgets with superiors

After initial preparation, budgets are submitted by managers to their superiors for discussion and approval. This stage involves negotiation, during which budget targets may be adjusted to ensure realism and consistency. The negotiation process helps align individual departmental objectives with overall company goals.

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Diagram 11: Budgeting process



Source: own processing

Coordination and review of budgets

At this stage, individual budgets are coordinated and reviewed to ensure that they are mutually consistent. Some budgets may be out of balance with others, for example when planned production does not match planned sales. Necessary adjustments must be made by the responsible managers. During this process, preliminary budgeted financial statements are prepared to check whether the overall budget is acceptable.

Final acceptance of the budget

Once all budgets are consistent and agreed upon, they are formally approved. The approved budgets are then summarized into a master budget, which includes the budgeted profit and loss statement, balance sheet, and cash flow statement. The finalized budgets are communicated to responsibility centres throughout the organization.

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Ongoing review and control

The budgeting process does not end with budget approval. During the budget period, actual results must be regularly compared with budgeted figures, usually on a monthly basis. Variances are analyzed and corrective actions are taken if necessary. This ongoing review ensures that budgets serve not only as a planning tool, but also as an effective instrument of management control.

6.7 How to Check the Budget

Budget control is the process of comparing actual results with budgeted figures in order to evaluate performance and identify variances. Different types of budgets can be used for budget control, depending on the nature of the responsibility centre and the level of control managers have over costs and capacity utilization.

Fixed budget (absolutely fixed budget)

A fixed budget is a budget that remains unchanged regardless of the actual level of activity. Actual costs are compared directly with the original budgeted costs. No adjustment is made for differences in output volume or activity level.

This type of budget is mainly used to control costs in centres where performance cannot be easily measured or where managers do not influence the level of activity. Typical examples include bookkeeping, financial management, and research and development departments.

Variably recalculated budget (flexible budget with fixed capacity)

A variably recalculated budget adjusts only variable costs to the actual level of output and performance structure. Fixed costs remain at their original budgeted amount.

This type of budget is suitable for responsibility centres that do not decide on capacity utilization and are not expected to increase output. Managers in these centres are responsible mainly for controlling variable costs, while fixed costs are considered given for the period.

Linearly recalculated budget

A linearly recalculated budget recalculates total budgeted costs, including both variable and fixed costs, in proportion to the actual level of activity. In this approach, total costs are adjusted to reflect changes in volume.

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This type of budget is suitable for responsibility centres where managers can influence capacity utilization. It is often used as a motivational tool, as higher utilization of capacity leads to better cost performance and improved evaluation of managerial efficiency.



Chapter summary

This chapter introduced the budgetary system as an essential tool of managerial accounting for planning, coordination, and control. Budgeting was presented as a formal process that translates strategic objectives into financial and operational plans and provides a framework for allocating resources and setting performance targets.

The chapter explained the budgeting process, including the communication of budget guidelines, identification of limiting factors, preparation and negotiation of budgets, coordination, final approval, and ongoing review. Different types of budgets were described, such as operating, capital, and financial budgets, as well as fixed, rolling, and flexible budgets. Special attention was given to budget control and the use of fixed, variably recalculated, and linearly recalculated budgets for performance evaluation.

Overall, the chapter showed how effective budgeting supports cost control, improves efficiency, motivates managers and employees, and helps organizations respond to changes in their business environment. Properly designed and realistically prepared budgets are a key prerequisite for successful management and decision-making.



Key terms

Budgetary system
Operating budget
Master budget

Capital budget
Financial budget
Rolling budget

Fixed budget
Variably recalculated budget
Linearly recalculated budget



Questions

1. What is a budgetary system and why is it important for management?
2. What is budgeting and what is its main purpose?
3. How does budgeting support planning and control in an organization?

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4. What are the main stages of the budgeting process?
5. What is the role of top management in the budgeting process?
6. What is the master budget and what does it include?
7. What is the difference between operating, capital, and financial budgets?
8. What is a rolling budget and why is it used?
9. What is the difference between a fixed budget and a flexible budget?
10. How is budget control performed and why is it important?



Exercises

Exercise 6.1

The company produces umbrellas. Based on operational costing, the company determined that direct costs amount to CZK 150 per umbrella. Variable production overheads are set at a standard rate of CZK 150 per hour. The production of one umbrella takes approximately 30 minutes.

The maximum limit for fixed costs in April is CZK 2 400 000. The company planned to produce 20 000 umbrellas.

In reality, the company produced only 18 000 umbrellas, and the actual costs were as follows:

- Direct costs: CZK 2 610 000
- Variable production overheads: CZK 1 440 000
- Fixed costs: CZK 2 124 000

Tasks:

1. Prepare the budgeted costs for April.
2. Prepare a variably recalculated budget for the actual production volume in April.
3. Prepare a linearly recalculated budget for the actual production volume in April.
4. Determine the efficiency variance and the yield variance for April.

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Solution:

1. Prepare the budgeted costs for April.

Item	CZK
Direct costs	
Variable production overheads	
Fixed costs	
Total	

2. Prepare a variably recalculated budget for the actual production volume in April.

Item	CZK
Direct costs	
Variable production overheads	
Fixed costs	
Total	

3. Prepare a linearly recalculated budget for the actual production volume in April.

Item	CZK
Direct costs	
Variable production overheads	
Fixed costs	
Total	

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4. Determine the efficiency variance and the yield variance for April.

Item	Actual costs	VRB	LRB	Efficiency variance	Yield variance
Direct costs					
Variable overheads					
Fixed costs					
Total					

Exercise 6.2

The transport division of a company delivers carpets to customers. The company expects the division to cover 150 000 km per year. The standard fuel cost is CZK 10 per km. According to the plan, total variable overhead costs are CZK 150 000, and the maximum amount of fixed costs for the period is CZK 910 000.

In reality, the division covered 165 000 km. Actual fuel costs amounted to CZK 1 485 000, actual variable overhead costs were CZK 198 000, and actual fixed costs were CZK 915 000.

Tasks:

1. Prepare an alternative budget for the planned activity levels of 140 000 km, 150 000 km, and 160 000 km.
2. Prepare a variably recalculated budget and a linearly recalculated budget for the actual activity level.

Solution:

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1. Prepare an alternative budget for the planned activity levels of 140 000 km, 150 000 km, and 160 000 km.

	140 000 km	150 000 km	160 000 km
Direct costs			
Variable overheads			
Fixed costs			
Total costs			

2. Prepare a variably recalculated budget and a linearly recalculated budget for the actual activity level.

	Variably recalculated budget	Linearly recalculated budget
Direct costs		
Variable overheads		
Fixed costs		
Total costs		

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Source of exercises: Šoljaková et al. (2011); Vlčková (2016)

7 Responsibility accounting, responsibility departments

Responsibility accounting is a system of managerial accounting that focuses on planning, monitoring, and evaluating performance according to areas of responsibility within an organization. It is based on the idea that managers should be held accountable only for those costs, revenues, and results that they can influence. By clearly defining responsibility, this system supports effective control, motivation, and decision-making.

This chapter introduces the principles of responsibility accounting and explains how organizations are divided into responsibility departments, also known as responsibility centres. It describes different types of responsibility departments and their roles in performance evaluation. The chapter also highlights the importance of linking responsibility accounting with budgeting, controlling, and performance measurement to improve managerial accountability and overall business efficiency.



Chapter objectives

The objectives of this chapter are to:

- explain the concept and purpose of responsibility accounting,
- describe the role of responsibility accounting in managerial control and coordination,
- distinguish between different types of responsibility centres,
- explain the responsibilities and decision-making authority of each type of centre,
- describe how performance of responsibility centres is measured and evaluated,
- explain the impact of decentralization and centralization on responsibility accounting,
- identify controllable and non-controllable factors in performance evaluation,

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- discuss behavioral aspects of responsibility accounting and managerial motivation.

7.1 Basic terminology according to CIMA (2005)

Contribution centre

A profit centre in which marginal or direct costs are matched against revenue.

Cost centre

A production or service location for which costs are accumulated.

Investment centre

A profit centre with additional responsibilities for capital investment and possibly for financing and whose performance is measured by its ROI.

Profit centre

A part of a business accountable for both costs and revenues

Responsibility centre

A department or organizational function whose performance is the direct responsibility of a specific manager.

Revenue centre

A centre devoted to raising revenue with responsibility for costs.

SBU (Strategic business unit)

A section within a larger organization, which is responsible for planning, developing, producing and marketing.

Service cost centre

A cost centre providing services to other cost centres.

Work cell

A group of employees dedicated to performing a specific manufacturing task.

7.2 Responsibility Accounting

The development of responsibility management began in the first half of the 20th century as a response to the growing size and complexity of organizations. As

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companies expanded, it became increasingly difficult for top management to directly control all activities. There was a need to coordinate individual tasks, departments, and employees in a systematic way.

The main objective of responsibility management is to ensure that the actions of every department and every employee contribute to the achievement of the strategic goals of the company as a whole. Responsibility accounting supports this objective by linking accounting information to managerial responsibility. It allows management to evaluate performance not only at the company level, but also at lower organizational levels.

The importance of responsibility accounting increased significantly at the end of the 20th and the beginning of the 21st century. This development was driven by stronger competition, globalization, pressure on efficiency, and the need for better cost control and performance measurement. Modern organizations require transparent information about who is responsible for costs, revenues, and results, and responsibility accounting provides such information.

Responsibility accounting is a system of managerial accounting that focuses on collecting, reporting, and evaluating accounting information according to responsibility for economic outcomes. Its purpose is not only to measure results, but also to support planning, control, and motivation. A key principle of responsibility accounting is that managers should be evaluated only on those factors that they can influence.

The main tasks of responsibility accounting include the classification of accounting information according to responsibility for the development of costs and revenues, assets and liabilities, and cash inflows and outflows. This classification makes it possible to clearly identify where costs arise, where revenues are generated, and how resources are used within the organization.

Another important task of responsibility accounting is to show the relationships between individual organizational units. By analyzing internal relationships, responsibility accounting helps determine the contribution of individual units to the overall profit or loss of the company. This information is essential for performance evaluation and managerial decision-making.

Responsibility accounting also plays a key role in variance analysis. It compares actual results with predetermined or planned values and identifies variances. At the same time, it helps determine which manager or employee is responsible for these variances. This does not serve only as a control mechanism, but also as a tool for learning and improvement. Managers can analyze the causes of variances and take corrective actions to improve future performance.

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Overall, responsibility accounting creates a direct link between accounting information, managerial responsibility, and company objectives. It supports transparency, accountability, and effective management and forms an important foundation for modern controlling and performance management systems.

7.3 Centralization and Decentralization in Responsibility Accounting

Centralization and decentralization describe how decision-making authority is distributed within an organization. They are closely connected with responsibility accounting, because the level of responsibility assigned to a department depends on how much authority it has.

In a centralized organization, most decision-making power is concentrated at the top management level. Key decisions related to costs, prices, investments, and resource allocation are made centrally. Lower-level departments mainly carry out instructions and have limited autonomy. In such organizations, responsibility accounting is usually focused on cost control, and most departments operate as cost or expense centres.

Centralization allows for strong control, uniform policies, and consistency across the organization. However, it may reduce flexibility and slow down decision-making, especially in large or geographically dispersed companies.

In a decentralized organization, decision-making authority is delegated to lower management levels. Departments and managers are given greater autonomy to make decisions related to their activities, such as pricing, cost management, product mix, or investment within defined limits. In this case, responsibility accounting plays a crucial role in evaluating the performance of individual responsibility centres.

Decentralization supports faster decision-making, higher managerial motivation, and better use of local knowledge. It also allows management to focus on strategic issues rather than operational details. On the other hand, decentralization requires well-designed responsibility accounting and performance measurement systems to ensure that local decisions are aligned with the overall objectives of the company.

In practice, most organizations use a combination of centralization and decentralization. Strategic decisions, such as long-term investments or overall pricing policy, are usually centralized, while operational decisions are decentralized.

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Responsibility accounting helps balance these two approaches by clearly defining authority, responsibility, and performance criteria for each organizational unit.

Relationship Between Authority and Responsibility

A fundamental principle of responsibility accounting is that responsibility must correspond to authority. Managers should be evaluated only on results that they can influence. As the level of authority increases from cost centres to investment centres, performance evaluation becomes more complex and focuses not only on costs, but also on profitability and capital efficiency.

7.4 Types of Responsibility Centres

Responsibility centres are organizational units for which managers are held accountable for specific economic results. The classification of responsibility centres depends on the scope of authority, decision-making power, and responsibility assigned to the managers of these centres. The more authority a centre has, the broader its responsibility and the more complex its performance evaluation.

Responsibility centres can be classified into basic and more advanced types. Advanced classification reflects a higher level of managerial autonomy and more detailed performance measurement.

Cost Centre

In a cost centre, managers and employees are responsible only for controlling costs. They can influence the level and structure of costs, but they are not responsible for external revenues and do not decide on selling prices or the utilization of assets.

A key requirement of a cost centre is the clear identification of controllable costs, that is, costs that the centre can influence through its activities or decisions about output volume. The level of authority and responsibility is relatively low.

Performance evaluation is based on comparing actual costs with predetermined or budgeted costs and analyzing cost variances. Cost centres are typically used for production departments, maintenance units, or administrative departments.

Expense Centre

Expense centres are a special type of cost centre. Their activities do not generate immediate economic benefits, but they increase the future potential of the company. Typical examples include training departments, strategic marketing, research and development, or innovation units.

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Managers of expense centres can influence the level of costs, but the benefits of their activities are difficult to measure in the short term. For this reason, performance evaluation is based mainly on qualitative assessment and expert judgment rather than on financial indicators.

If the resources spent are clearly related to future economic benefits, managerial accounting may capitalize these costs and recognize them in profit or loss gradually through depreciation or amortization, once the company starts to realize the economic benefits. This approach is common, for example, in pharmaceutical companies.

Revenue Centre

In a revenue centre, managers are responsible for generating external revenues. They can influence the volume and structure of sales, but they usually cannot influence costs or independently set selling prices.

Selling prices are typically determined by a price list or central pricing policy. Revenue centres often have limited flexibility to adjust prices within a defined range, for example by offering discounts based on sales volume, payment terms, or specific customer conditions. Typical examples are regional sales branches of large corporations.

A potential problem of revenue centres is that they may focus on maximizing revenues rather than profitability. This can lead to a preference for products with high sales volume but low contribution margins. To address this issue, companies often motivate revenue centres to maximize contribution margin, defined as the difference between actual revenues and predetermined transfer prices of sold products.

Profit Centre

In a profit centre, managers are responsible for both costs and external revenues. They have the authority to manage the entire business process, including decisions about the volume and structure of outputs and their sale.

However, profit centres usually do not decide about the level, structure, or utilization of assets. A profit centre often includes several cost and revenue centres that are subordinate to it.

A disadvantage of profit centres is that managers may increase profit in the short term by actions that negatively affect the company's financial position. For example, they may accept long payment periods for customers or use supplier discounts that increase inventories. These decisions may not increase costs, but they increase net working capital and the need for financing.

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Profitability (Return) Centre

Profitability centres address the limitations of profit centres by extending managerial responsibility to selected items of net working capital, such as receivables, inventories, and payables, which the centre can influence.

Managers are evaluated not only on profit, but also on the efficiency of capital use. This approach encourages better balance between profitability and liquidity and leads to more responsible decision-making regarding working capital management.

Investment Centre

Investment centres represent the highest level of responsibility. Managers are responsible for costs, revenues, profit, and investment decisions. They have the authority to decide about the level and use of assets and are evaluated using performance indicators such as return on investment.

Investment centres are typically used only in large companies. In small and medium-sized enterprises, investment decisions are usually centralized and handled by top management. In large organizations, investment centres are often referred to as strategic business units (SBUs).

Table 3: Comparison of responsibility centres

Type of responsibility centre	Respons. for costs	Respons. for revenues	Respons. for profit	Respons. for assets	Typical examples
Cost	Yes	No	No	No	Production dep., maintenance, admin.
Expense	Yes	No	No	No	R&D, training, strategic marketing
Revenue	No	Yes	No	No	Sales departments, regional branches
Profit	Yes	Yes	Yes	No	Divisions, product lines
Profitability (return)	Yes	Yes	Yes	Partly (working capital)	Managing inventories and receivables
Investment	Yes	Yes	Yes	Yes	SBUs

Source: own processing

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The Table 3 shows that responsibility increases gradually from cost centres to investment centres. Cost and expense centres have limited authority and focus mainly on cost control. Revenue centres are responsible for sales performance but do not control costs or assets.

Profit centres combine responsibility for costs and revenues, but they are not responsible for investment decisions. Profitability centres extend responsibility to selected elements of working capital, which improves capital efficiency. Investment centres represent the highest level of decentralization, as managers are responsible not only for profit but also for the use of assets.

This structure clearly illustrates the relationship between decentralization and responsibility accounting. As decision-making authority is decentralized, responsibility accounting must provide more detailed and comprehensive performance measures.

7.5 Performance Measures and Evaluation of Responsibility Centres

The evaluation of responsibility centres is a key part of responsibility accounting. The purpose of performance measurement is to assess whether managers and departments achieve their objectives and use resources efficiently. A fundamental principle is that responsibility centres should be evaluated only on results that they can influence.

Different types of responsibility centres require different performance measures. Using inappropriate indicators may lead to unfair evaluation and dysfunctional behavior. Therefore, the choice of performance measures must correspond to the scope of authority and responsibility assigned to the centre.

Cost centres and expense centres are evaluated mainly on the basis of cost control. The most important performance measures include comparison of actual costs with budgeted or standard costs and analysis of cost variances. Attention is focused on efficiency, economy, and adherence to the budget. In expense centres, evaluation is often supplemented by qualitative assessment, because the benefits of their activities are usually realized in the future and cannot be measured precisely in financial terms.

Revenue centres are evaluated based on their ability to generate revenues. Typical performance measures include sales volume, sales growth, and contribution margin. Evaluation should not be based solely on revenues, as this may encourage

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managers to increase sales without regard to profitability. For this reason, contribution margin is often used as a more appropriate indicator of performance.

Profit centres combine responsibility for both costs and revenues. Their performance is usually measured by profit, contribution margin, or return on sales. These indicators reflect the centre's ability to manage its operations efficiently and profitably. However, profit alone does not consider the amount of capital used to achieve the result.

Investment centres are evaluated using indicators that relate profit to the assets employed. Typical performance measures include return on investment (ROI) or similar profitability ratios. These indicators assess not only operational efficiency, but also the effectiveness of investment decisions and the use of capital.

Overall, performance evaluation in responsibility accounting must be transparent, fair, and consistent. Properly selected performance measures support motivation, accountability, and alignment of individual objectives with the overall goals of the organization.

7.6 Behavioral Aspects of Responsibility Accounting

Responsibility accounting does not influence only financial results, but also the behavior of managers and employees. Performance measurement systems affect how people make decisions, set priorities, and act in everyday operations. For this reason, behavioral aspects play an important role in responsibility accounting.

If performance measures are poorly designed or perceived as unfair, managers may focus on short-term results at the expense of long-term company objectives. They may try to improve reported performance by actions that are not beneficial for the organization as a whole, such as postponing necessary costs, rejecting profitable long-term projects, or shifting problems to other departments.

Another behavioral risk is excessive focus on individual responsibility centres rather than on cooperation. Managers may optimize the performance of their own centre even if this negatively affects other centres or the company overall. This problem is more likely in decentralized organizations and highlights the need for coordination and clear performance criteria.

Motivation is a key positive effect of responsibility accounting when it is properly implemented. Clearly defined responsibilities, achievable targets, and transparent evaluation can increase managerial motivation and accountability. Managers are more likely to take responsibility for results when they understand how their performance is measured and how it relates to rewards and career development.

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An important principle in responsibility accounting is controllability. Managers should be held responsible only for those results that they can influence. Holding managers accountable for uncontrollable factors, such as economic conditions or decisions made by higher management, reduces motivation and may lead to frustration and resistance.

In conclusion, responsibility accounting should be designed not only as a technical accounting system, but also as a managerial and behavioral tool. When performance measures are aligned with authority, responsibility, and company objectives, responsibility accounting supports effective management, cooperation, and long-term success.



Chapter summary

This chapter introduced responsibility accounting as an important system of managerial accounting that links accounting information with managerial responsibility. Responsibility accounting supports planning, control, and performance evaluation by assigning costs, revenues, and results to specific organizational units and managers who can influence them.

The chapter explained different types of responsibility centres and showed how responsibility and authority increase from cost and expense centres to profit, profitability, and investment centres. Special attention was given to the relationship between responsibility accounting and organizational structure, including the role of centralization and decentralization in distributing decision-making authority.

The chapter also discussed performance measurement and evaluation of responsibility centres. It highlighted the importance of selecting appropriate performance measures that correspond to the scope of responsibility of each centre. Finally, the behavioral aspects of responsibility accounting were examined, emphasizing the impact of performance measurement on managerial behavior, motivation, cooperation, and long-term decision-making.

Overall, the chapter demonstrated that responsibility accounting is not only a technical accounting system, but also a key managerial tool that supports accountability, motivation, and alignment of individual actions with the strategic objectives of the organization.

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Key terms

Responsibility accounting	Expense centre	Profitability (return) centre
Responsibility centre	Revenue centre	Investment centre
Cost centre	Profit centre	Centralization and Decentralization



Questions

1. What is responsibility accounting and what is its main purpose?
2. Why did responsibility accounting develop in modern organizations?
3. What is a responsibility centre?
4. What is the difference between a cost centre and an expense centre?
5. How does a revenue centre differ from a profit centre?
6. What is an investment centre and when is it used?
7. How are responsibility centres evaluated and why must performance measures match authority?
8. What is the difference between centralization and decentralization?
9. How does responsibility accounting influence managerial behavior and motivation?
10. Why is the controllability principle important in responsibility accounting?



Exercises

Exercise 7.1

The company ALPHA produces household appliances and is organized into responsibility centres. For April, the following responsibility centres are defined: Production Department (cost centre); Sales Department (revenue centre); Product Division A (profit centre). The planned and actual data for April are shown below.

Production Department:

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	Planned data	Actual data
Production volume	12 000 units	11 500 units
Direct costs	CZK 1 560 000	CZK 1 575 000
Variable overhead costs	CZK 60 per unit	CZK 690 000
Fixed overhead costs	CZK 420 000	CZK 435 000

Sales Department:

	Planned data	Actual data
Planned sales volume	12 000 units	11 800 units
Selling price	CZK 320 per unit	CZK 315 per unit

Tasks:

1. Evaluate the performance of the Production Department as a cost centre. Compare actual costs with planned costs and determine cost variances.
2. Evaluate the performance of the Sales Department as a revenue centre. Analyze the difference between planned and actual revenues.
3. Determine the profit of Product Division A as a profit centre based on actual data.

Solution:

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Exercise 7.2

The company BETA sells office chairs. The Regional Branch North is evaluated as a profitability (return) centre. This means the branch is responsible not only for profit, but also for selected items of net working capital that it can influence (trade receivables, inventories, and trade payables). For April, the following planned and actual data are available:

	Planned data	Actual data
Sales revenue	CZK 6 000 000	CZK 6 300 000
Variable costs	60% of sales revenue	62% of sales revenue
Fixed costs	CZK 1 800 000	CZK 1 760 000
Net working capital items:		
Trade receivables	CZK 900 000	CZK 1 400 000
Inventories	CZK 600 000	CZK 800 000
Trade payables	CZK 500 000	CZK 520 000

Assume that the branch is evaluated using: Profit (P); Net working capital (NWC)
 $\text{NWC} = \text{Receivables} + \text{Inventories} - \text{Payables}$; Profitability of working capital = P / NWC

Tasks:

1. Calculate planned profit and actual profit for April.
2. Calculate planned and actual net working capital (NWC).
3. Calculate planned and actual profitability of working capital (P / NWC).

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Solution:

8 Pricing Decisions, Price Formation, Transfer Pricing

Pricing decisions are among the most important managerial decisions in an organization. Prices influence revenues, profit, competitiveness, and the long-term sustainability of the company. A well-chosen price must reflect both market conditions and the internal cost structure of the enterprise.

This chapter introduces the basic principles of pricing decisions, price formation, and internal pricing through transfer prices. It explains how prices are used as a managerial tool for decision-making, performance evaluation, and coordination between responsibility centres. The chapter also highlights the relationship between prices, costs, demand, and capacity utilization, and shows how pricing decisions support value creation and effective management.



Chapter objectives

The objectives of this chapter are to:

- explain the importance of pricing decisions in managerial accounting,
- describe the relationship between prices, costs, demand, and capacity utilization,
- distinguish between demand-oriented and cost-oriented pricing methods,
- explain the role and functions of transfer prices in responsibility accounting,
- identify different types of transfer prices and their use in decentralized organizations,
- explain how pricing decisions influence revenues, profit, and performance evaluation,
- introduce implicit price elasticity of demand as a tool for pricing decisions,
- analyze the impact of price changes on sales volume and profitability.

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8.1 Basic Terminology According to CIMA (2005)

Cost-based pricing

A pricing method where the selling price is determined by adding a markup to the cost of a product or service.

Contribution margin

The difference between sales revenue and variable costs, used to cover fixed costs and generate profit.

Demand-based pricing

A pricing approach that sets prices according to customer demand and willingness to pay rather than costs.

Implicit price elasticity of demand

A measure used in managerial decision-making to estimate how much sales volume must change after a price change to maintain the same level of profit.

Market-based transfer price

A transfer price based on the external market price of a product or service.

Negotiated transfer price

A transfer price agreed upon between supplying and receiving responsibility centres.

Price discrimination

The practice of charging different prices to different customers for the same product or service.

Pricing policy

The overall strategy and principles used by an organization to set and manage prices.

Transfer price

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An internal price charged for goods or services transferred between responsibility centres within the same organization.

Value-based pricing

A pricing method where prices are set based on the perceived value of the product or service to the customer.

8.2 Pricing Decisions

Pricing decisions belong among the most important managerial decisions in a company. Prices influence revenues, profit, competitiveness, and the long-term survival of the enterprise. Pricing is not only an external issue related to customers and markets, but also an internal issue related to cooperation between departments and responsibility centres.

In managerial accounting, prices play a key role both in external pricing (prices for customers) and internal pricing, which is realized through transfer prices. This chapter focuses on the basic principles of pricing decisions, price formation, and the role of transfer prices in responsibility accounting.

8.3 Transfer Prices (Internal Prices)

Transfer prices are internal prices used to value goods and services transferred between responsibility centres within the same company. They represent a tool for evaluating the performance of centres and for coordinating internal relationships.

The output of a responsibility centre valued at a transfer price represents only partial recognition of the usefulness of its performance. The main purpose of transfer prices is not to determine market value, but to support responsibility management and ensure coordination of internal activities so that overall company objectives are achieved.

Transfer prices are especially sensitive in decentralized organizations, where individual centres have a higher degree of autonomy and responsibility. Incorrectly set transfer prices may lead to conflicts between centres or decisions that are optimal for one centre but not for the company as a whole.

Functions of Transfer Prices

Transfer prices serve several important functions in managerial accounting:

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1. They motivate managers to make efficient decisions and to use resources responsibly.
2. They provide a measure of the activity and performance of responsibility centres.
3. They reflect the level of authority and responsibility of centres in both vertical and horizontal relationships within the organization.
4. They support coordination and cooperation between centres.

8.4 Types of Transfer Prices

Transfer prices can be classified according to the basis on which they are determined.

8.4.1 Cost-Based Transfer Prices

Cost-based transfer prices are derived from the costs incurred by the supplying centre. Several variants exist:

1. Transfer prices based on variable costs are typically used for cost centres that are managed by directive, physically expressed tasks. The main focus is on economical and efficient fulfilment of assigned tasks. In this case, efficiency of unit costs and overhead costs is evaluated separately.
2. Transfer prices based on full costs (including fixed costs) motivate centres to increase the volume of output and improve capacity utilization. The supplying centre can achieve a volume variance resulting from better use of capacity. This type of transfer price is suitable where the centre can influence output volume but does not have full profit responsibility.
3. Transfer prices with a profit markup are set above full costs. They are mainly used for valuing final outputs and are appropriate for profit, profitability, and investment centres. These centres can influence both output volume and product assortment. This type of transfer price is not suitable for centres with limited authority, such as production departments involved in horizontal internal cooperation.

8.4.2 Market-Based Transfer Prices

Market-based transfer prices are derived from external market prices. They allow comparison between internal performance and external suppliers or competitors. This type of transfer price supports realistic performance evaluation and promotes efficiency.

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However, a limitation of market-based transfer prices is that the difference between market-based revenues and controllable costs is not fully under the control of the supplying centre. For example, an internal transport department may face higher external market prices or unused capacity, which affects its results without being fully controllable.

8.4.3 Negotiated Transfer Prices

Negotiated transfer prices are determined through agreement between supplying and receiving centres. They are often used when no clear market price exists and when centres operate as profit centres.

This approach supports managerial autonomy and negotiation skills, but it may be time-consuming and can lead to conflicts if centres have unequal bargaining power.

8.5 Pricing Policy and External Pricing Decisions

Pricing policy is one of the most important areas of value management. It directly affects profitability, market position, and competitiveness. Pricing decisions are usually made at the top management level, although in some cases limited pricing authority may be delegated to lower management levels.

The quality of pricing decisions depends on the availability, accuracy, and relevance of information. Pricing decisions are influenced by several factors:

- market conditions and competition,
- customer demand and willingness to pay,
- cost structure and cost behavior.

For effective pricing decisions, two types of information are essential. Marketing provides information about acceptable market prices and customer behavior, while controlling provides information about costs and profitability.

8.6 Relationship Between Price, Costs, and Capacity Utilization

The market price represents the maximum price customers are willing to pay for a product or service. Determining this price is the task of marketing and is based on market research and analysis of consumer behavior.

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Cost-based pricing focuses on whether the price covers costs and contributes to profit. Cost calculations are prepared by controlling and support managerial decision-making.

An important criterion for setting prices is the relationship between sales volume and capacity utilization. When sales volume and capacity utilization are balanced, prices tend to stabilize and approach an equilibrium price. At this level, customer demand matches supply, costs are covered, and neither surplus nor shortage arises.

A high price allows higher profit per unit but reduces demand, which may lead to excess supply and price reductions. A low price stimulates demand but may lead to capacity constraints and shortages, which put upward pressure on prices. Effective pricing decisions therefore require balancing price, volume, and capacity utilization.

8.7 Implicit Price Elasticity of Demand as a Tool for Pricing Decisions

An important tool for pricing decisions is the calculation of implicit price elasticity of demand. This concept helps managers assess how changes in price affect the quantity sold and whether a price change will maintain the same level of profit as before.

Implicit price elasticity does not measure actual market behavior, but it provides a decision-oriented estimate. It answers two practical managerial questions:

- How much must sales volume increase if the price is reduced?
- How much can sales volume decrease if the price is increased?

The key criterion is that profit after the price change remains the same as before the price change.

The calculation is based on information about:

- the considered percentage change in price,
- the level of variable costs,
- the original selling price,
- the expected or planned sales volume.

The result is expressed as a percentage change in quantity sold (or sales revenue).

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Price Reduction

When the company considers reducing the selling price, the contribution margin per unit decreases. To achieve the same profit as before, the company must sell a higher quantity of products.

The required percentage increase in quantity sold (or sales revenue) is calculated as:

$$\text{Required increase in quantity (in \%)} = (X / (c/p - X)) * 100$$

Where:

- X is the considered percentage reduction in price,
- c/p is the contribution to sales ratio expressed in percentage terms.

This formula shows how sensitive sales volume must be to compensate for the lower price. If the required increase in quantity is unrealistic, the price reduction may not be economically justified.

Price Increase

When the company considers increasing the selling price, the contribution margin per unit increases. In this case, sales volume may decrease, but profit can remain unchanged as long as the decrease is not too large.

The maximum allowable percentage decrease in quantity sold (or sales revenue) is calculated as:

$$\text{Maximum decrease in quantity (in \%)} = (X / (c/p + X)) * 100$$

Where:

- X is the considered percentage increase in price,
- c/p is the contribution to sales ratio expressed in percentage terms.

This calculation shows how much demand can fall before the price increase becomes unprofitable.

Interpretation and Use in Management

Implicit price elasticity of demand is a practical tool for short-term pricing decisions. It helps managers quickly evaluate whether a planned price change is economically reasonable under given cost conditions.

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This method assumes that variable costs remain unchanged and that fixed costs are constant. It is therefore most suitable for short-term decisions, where capacity and cost structure do not change significantly.

The results should always be compared with market expectations and customer behavior. If the required change in quantity is not realistic given market conditions, the price change should be reconsidered.

8.8 Demand-Oriented and Cost-Oriented Pricing Methods

Demand-Oriented Pricing Methods

Demand-oriented pricing methods focus primarily on customers and the market. The main goal is to set a price that reflects customers' willingness to pay and market conditions. These methods are based on the idea that the value perceived by the customer is more important than the cost of production.

Prices are influenced by factors such as customer preferences, price sensitivity, competition, and overall market demand. Typical demand-oriented approaches include value-based pricing, price differentiation, and psychological pricing.

Demand-oriented pricing is especially suitable in competitive markets where customers have many alternatives and where demand reacts strongly to price changes. A key limitation of these methods is that prices based only on demand may not cover costs if cost information is not carefully considered.

Cost-Oriented Pricing Methods

Cost-oriented pricing methods focus on internal cost information. Prices are determined by adding a markup to costs in order to cover expenses and generate profit. These methods are widely used because they are simple and easy to apply.

Typical cost-oriented approaches include pricing based on variable costs, full costs, or full costs with a profit markup. Cost-oriented pricing ensures that costs are covered, but it does not always reflect market conditions or customer willingness to pay.

These methods are suitable in situations where demand is stable, competition is limited, or when prices must be justified internally, for example in regulated industries or internal pricing decisions. The main disadvantage is that cost-oriented pricing may lead to prices that are too high or too low compared to market conditions.



Chapter summary

This chapter focused on pricing decisions as a key area of managerial decision-making. It explained how prices influence revenues, profit, demand, and capacity utilization, and why correct pricing is essential for the competitiveness and long-term sustainability of an organization.

The chapter introduced demand-oriented and cost-oriented pricing methods and highlighted their advantages and limitations. Demand-oriented pricing focuses on customer willingness to pay and market conditions, while cost-oriented pricing ensures cost coverage and profit generation. The chapter also explained the role of transfer prices as an important tool of responsibility accounting, especially in decentralized organizations, where they support performance evaluation, motivation, and coordination between responsibility centres.

Special attention was given to implicit price elasticity of demand as a practical tool for evaluating price changes. This method helps managers estimate how changes in price affect sales volume while maintaining the same level of profit. Overall, the chapter showed that effective pricing decisions require a balance between market factors, cost information, and internal coordination to support value creation and managerial control.



Key terms

Pricing decisions	Cost-oriented pricing	Market-based transfer price
Price formation	Transfer price	Negotiated transfer price
Demand-oriented pricing	Cost-based transfer price	Implicit price elasticity of demand

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Questions

1. Why are pricing decisions important for managerial accounting?
2. What is the relationship between price, costs, demand, and capacity utilization?
3. What is the difference between demand-oriented and cost-oriented pricing methods?
4. What are the main advantages and limitations of demand-oriented pricing?
5. When is cost-oriented pricing most suitable?
6. What is a transfer price and why is it used in responsibility accounting?
7. What functions do transfer prices perform in decentralized organizations?
8. What are the main types of transfer prices and how do they differ?
9. What is implicit price elasticity of demand and how is it used in pricing decisions?
10. How can incorrect pricing decisions affect company performance and coordination?



Exercises

Exercise 8.1

The transport department provides transport services using one type of vehicle. For the first quarter of 2026, it was expected to drive 55 000 km for other departments. An additional 5 000 km was planned to be sold to external customers at a price of CZK 15 per 1 km, which represents the usual market price.

The standard fuel consumption is 35 litres of diesel per 100 km, and the anticipated purchase price of diesel is CZK 23 per litre. Budgeted overhead costs are set at CZK 237 000, of which CZK 117 000 are variable costs and CZK 120 000 are fixed costs. The company expects to achieve a return on costs (ROC) of 30 %.

Tasks:

Determine the transfer price at the level of:

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1. variable costs,
2. full costs,
3. full costs with a profit margin,
4. market price.

Solution:

Item	Calculation	Cost per 1 km
Direct material		
Variable overhead		
Total variable cost		
Fixed cost		
Full cost		
Profit		
Full cost with profit		

Exercise 8.2

The enterprise is considering pricing decisions based on implicit price elasticity of demand. The objective is to evaluate different combinations of sales volume and price changes while maintaining the same level of profit. The contribution to sales ratio is 0,25. The enterprise is considering price reductions of 5 %, 10 %, 15 %, and 20 %.

Task:

Determine the required percentage increase in sales volume to achieve the same budgeted profit.

Solution:

Price reduction	Increased volume
5 %	
10 %	
15 %	
20 %	

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Exercise 8.3

BOOM enterprise is engaged in buying, selling, and transporting explosive materials. The transport department provides transportation using a special type of vehicle. For the first quarter of 2026, the planned level of activity for the department was 80 000 km.

The standard fuel consumption of diesel is 34 litres per 100 km, and the estimated purchase price of diesel is CZK 25 per litre. The overhead budget is set at CZK 360 000, of which CZK 160 000 are variable overhead costs and CZK 200 000 are fixed costs.

In reality, the transport department travelled 83 000 km. It consumed 28 100 litres of diesel. The total costs incurred were CZK 1 117 000, of which diesel costs amounted to CZK 746 000.

Tasks:

1. Determine the transfer price per 1 km.
2. Determine the profit or loss of the department using an internal price at the level of variable costs.

Solution:

1. Determine the transfer price per 1 km.

Item	Calculation	CZK/km
Direct material - diesel		
Variable overhead cost		
Fixed cost		
Total		

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2. Determine the profit or loss of the department using an internal price at the level of variable costs.

Item	Actual cost	Predetermined costs	Difference
Fuel			
Overhead cost			
Profit or loss			
Price valuation of fuel			
Cost overruns			

Source of exercises: Šoljaková et al. (2011); Vlčková (2016)

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9 Standard costing, variance analysis

Standard costing and variance analysis are important tools of managerial accounting that support planning, control, and performance evaluation. They help managers compare planned (standard) costs with actual costs and identify differences that require attention.

This chapter introduces the basic principles of standard costing and explains how variances are calculated and analyzed. It shows how variance analysis helps managers understand the reasons for variances from planned performance, improve cost control, and support decision-making. The chapter focuses on the practical use of standards and variances in managing costs, efficiency, and responsibility centres.



Chapter objectives

The objectives of this chapter are to:

- explain the purpose and principles of standard costing in managerial accounting,
- describe the role of standards in planning, budgeting, and cost control,
- explain the concept of variance and variance analysis,
- describe the system of management based on variances,
- distinguish between different types of standards and their use in practice,
- identify and explain the main types of variances,
- distinguish between controllable and non-controllable variances,
- explain how variance analysis supports responsibility accounting and managerial decision-making.

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9.1 Basic Terminology According to CIMA (2005)

Standard cost

A predetermined cost that is calculated for a product or service under normal operating conditions.

Standard costing

A costing system that uses standard costs to measure performance and control costs by comparing them with actual results.

Actual cost

The real cost incurred during a period for producing goods or providing services.

Variance

The difference between a standard cost or revenue and the actual cost or revenue.

Variance analysis

The process of analyzing variances to identify their causes and assign responsibility.

Cost variance

The difference between standard cost and actual cost for a given level of output.

Material variance

A variance that arises from differences in material price or material usage compared to standards.

Labour variance

A variance caused by differences in labour rates or labour efficiency compared to standards.

Overhead variance

A variance resulting from differences between budgeted and actual overhead costs.

Favourable variance

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A variance that occurs when actual costs are lower than standard costs or actual revenues are higher than planned.

Adverse (unfavourable) variance

A variance that occurs when actual costs are higher than standard costs or actual revenues are lower than planned.

9.2 Standard Costing and Revenue Standards and Variance Analysis

One of the main objectives of managerial accounting is to work with planned (predetermined) values and compare them with actual results. Managers need to know what results should be achieved, what results were actually achieved, and why differences occurred. This approach supports better planning, control, and decision-making.

In practice, this comparison happens in three closely connected areas:

Costing and calculations

In costing, companies prepare preliminary (standard or planned) cost calculations before production starts. Later, they determine actual (final) cost calculations after production or sale. By comparing planned and actual costs, managers can see whether production was efficient and whether the product cost was higher or lower than expected.

Budgeting

In budgeting, the company prepares budgets for revenues, costs, and activities for a future period. After the period ends, actual results are compared with the budget. This helps managers evaluate performance and find variances, for example higher costs, lower revenues, or inefficient use of resources.

Responsibility accounting

In responsibility management, tasks and targets are assigned to managers and departments. Performance is later evaluated by comparing planned targets with actual results. The goal is to identify who is responsible for variances and whether the department met its responsibilities.

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9.3 Standards and Variances

A key element of this approach is variance analysis, which focuses on the differences between predetermined values and actual results. Predetermined values are usually called standards.

A standard is a predetermined value that represents what should happen under expected conditions. Standards can be set for costs, revenues, quantities, prices, and efficiency. For example, a company can set a standard material consumption per unit, a standard wage rate, a standard production time, or a standard selling price.

The main benefit of variance analysis is that it helps measure the impact of key factors that influence actual profit compared to planned profit. It supports management by showing which changes were caused by prices, which by quantities, and which by efficiency or capacity utilization. Variance analysis therefore improves transparency and helps managers focus on the most important problems.

9.3.1 Types of Standards

Standards can be set in different ways depending on the purpose of control and management style. Choosing the right type of standard is important, because standards influence motivation, performance evaluation, and the usefulness of variance analysis. The most common types of standards used in managerial accounting are the following.

Ideal standards

Ideal standards represent the best possible performance under perfect conditions. They assume no waste, no machine breakdowns, no idle time, and maximum efficiency. Ideal standards are very strict and difficult to achieve in real operating conditions.

These standards are useful mainly as a long-term goal or benchmark. However, they are usually not suitable for day-to-day control, because they can demotivate employees and lead to large unfavourable variances that do not reflect poor performance but unrealistic expectations.

Attainable standards

Attainable standards (sometimes called practical or achievable standards) represent efficient performance under normal operating conditions. They allow for normal waste, machine downtime, rest breaks, and other unavoidable inefficiencies.

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Attainable standards are the most commonly used in practice. They motivate employees, support realistic planning, and provide meaningful information for variance analysis. Variances based on attainable standards usually reflect real performance problems or improvements.

Current standards

Current standards are based on current conditions, prices, and technology. They are regularly updated to reflect recent changes in input prices, wage rates, production methods, or market conditions.

The advantage of current standards is that they reflect the present situation and provide up-to-date information. However, frequent changes in standards may reduce comparability over time and make trend analysis more difficult.

Basic standards

Basic standards are fixed standards that are set for a long period and are not regularly revised. They are mainly used for long-term comparison and trend analysis.

Basic standards are not suitable for short-term control, because they quickly become outdated. Their main purpose is to show how performance changes over time rather than to control daily operations.

9.4 A Management System Based on Variances

A management system based on variances is a structured process. It usually consists of five steps.

1. Setting standards

The first step is to set standards for the key values that management wants to control. Standards must be realistic, clear, and measurable. If standards are too strict, employees may feel they are unfair and impossible to achieve. If standards are too loose, they do not motivate improvement and do not help control costs.

Standards are often based on:

- technical norms and consumption standards (for materials and time),
- expected purchase prices and wage rates,
- planned production volume and capacity,
- historical data adjusted for expected changes,
- benchmarking (comparison with similar processes or competitors).

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Standards are usually set for a specific period and should reflect normal operating conditions. They must be communicated clearly to the responsible managers and employees.

2. Measuring actual results

The second step is to collect and measure actual results. This requires reliable accounting records and good data collection. Actual results may include:

- actual material consumption and material prices,
- actual labour hours and wage rates,
- actual overhead costs,
- actual output volume and sales volume,
- actual revenues and selling prices.

Actual data must be recorded in a timely and accurate way. If actual data are delayed or incorrect, variance analysis loses its value and managers cannot react quickly.

3. Calculating the variance

The third step is to calculate the variance between the standard value and the actual value. A variance is simply the difference between what was planned and what actually happened.

Variances can be expressed in money terms or in quantity terms. They are often classified as:

- favourable (actual cost is lower than standard, or actual revenue is higher than standard),
- unfavourable (actual cost is higher than standard, or actual revenue is lower than standard).

At this stage, the goal is not yet to explain the variance, but to identify its size and direction.

4. Analyzing the variance

The fourth step is to analyze the causes of the variance. This is the most important part of the system, because it explains why the difference occurred.

Variance analysis usually separates the variance into meaningful components. For example:

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- a price variance (change in price or rate),
- a quantity or usage variance (change in consumption),
- an efficiency variance (change in productivity),
- a volume or capacity variance (change in utilization).

The analysis should focus on significant variances. Small variances may be normal and do not always require action. Managers must also consider whether a variance was controllable or caused by external factors such as market price changes, supply problems, or unexpected demand shocks.

Variance analysis is also closely linked to responsibility accounting, because it helps identify who can influence the variance and who should take corrective action.

5. Taking corrective action

The fifth step is to take action based on the results of the analysis. Variance analysis is useful only if it leads to better management decisions.

Corrective actions may include:

- improving production methods or reducing waste,
- renegotiating purchase prices or selecting new suppliers,
- improving labour training and productivity,
- adjusting capacity or production planning,
- revising standards if they are outdated or unrealistic.

It is also important to use variance information for learning and continuous improvement, not only for control and punishment. A well-designed variance system supports better communication, motivation, and long-term performance improvement.

9.5 Types of Variances – Basic Overview

Variance analysis focuses on identifying and explaining differences between standard (planned) values and actual results. Variances can arise in different areas of business activity. For effective control, it is important to classify variances into basic categories and understand their meaning.

Material variances

Material variances arise when there is a difference between the standard and actual cost of materials. These variances are usually divided into two parts.

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Material price variance occurs when the actual purchase price of material differs from the standard price. It reflects changes in supplier prices, discounts, transport costs, or purchasing efficiency.

Material usage variance occurs when the actual quantity of material consumed differs from the standard quantity for the actual level of output. It reflects efficiency of material usage, waste, scrap, or quality of input materials.

Labour variances

Labour variances relate to differences between planned and actual labour costs.

Labour rate variance arises when the actual wage rate differs from the standard wage rate. This may be caused by changes in wage agreements, overtime payments, or differences in employee skill levels.

Labour efficiency variance occurs when the actual labour time used differs from the standard labour time required for the actual output. It reflects productivity, employee performance, training, and work organization.

Overhead variances

Overhead variances arise from differences between planned and actual overhead costs. They are usually analysed separately for variable and fixed overheads.

Variable overhead variances are influenced by efficiency and activity levels. They reflect how well indirect resources are used in relation to output.

Fixed overhead variances are mainly related to capacity utilization and spending control. They reflect whether fixed resources were under- or over-utilized and whether fixed costs were controlled as planned.

Sales variances

Sales variances arise when actual sales revenue differs from planned sales revenue.

Sales price variance occurs when the actual selling price differs from the standard or budgeted price. It reflects pricing decisions, discounts, and market conditions.

Sales volume variance occurs when the actual quantity sold differs from the planned quantity. It reflects demand, market share, and capacity utilization.

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9.6 Controllable and Non-Controllable Variances

Not all variances can be influenced by managers to the same extent. For effective and fair performance evaluation, it is important to distinguish between controllable and non-controllable variances.

Controllable variances are those that managers can influence through their decisions and actions. Examples include material waste, labour efficiency, scheduling, and internal cost control.

Non-controllable variances are caused by external factors that managers cannot influence in the short term. Examples include changes in market prices, inflation, exchange rates, or unexpected supply disruptions.

Variance analysis should focus mainly on controllable variances. Non-controllable variances should be identified and explained, but they should not be used to unfairly evaluate managerial performance.



Chapter summary

This chapter introduced standard costing and variance analysis as important tools of managerial accounting. These methods help managers compare planned (standard) values with actual results and identify differences that require attention. Standard costing supports planning, budgeting, and responsibility accounting by providing clear targets for costs, revenues, and efficiency.

The chapter explained the concept of standards and the system of management based on variances, including setting standards, measuring actual results, calculating variances, analyzing their causes, and taking corrective action. Different types of standards were described, such as ideal, attainable, current, and basic standards, and their role in motivation and control was explained.

The chapter also provided an overview of the main types of variances, including material, labour, overhead, and sales variances. Special attention was given to the distinction between controllable and non-controllable variances, which is essential for fair performance evaluation. Overall, the chapter showed how variance analysis helps managers improve efficiency, control costs, and support informed managerial decision-making.

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Key terms

Standard costing	Variance analysis	Material variance
Actual cost	Favourable variance	Labour variance
Standard	Unfavourable (adverse) variance	Overhead variance
		Sales variance



Questions

1. What is the purpose of standard costing in managerial accounting?
2. What is the difference between a standard cost and an actual cost?
3. What is a variance and why is variance analysis important?
4. What are the main steps in a management system based on variances?
5. What types of standards are used in practice and how do they differ?
6. What is the difference between ideal standards and attainable standards?
7. What are material variances and what causes them?
8. What are labour variances and what factors influence them?
9. What are overhead variances and how are they related to capacity utilization?
10. Why is it important to distinguish between controllable and non-controllable variances?



Exercises

Exercise 9.1

Enterprise Everest manufactures ski jackets. The standard material consumption per jacket is 1.1 metres. The standard material price is CZK 420 per metre. The standard labour time per jacket is 2 hours, and the standard labour rate is CZK 80 per hour.

In May, 1 000 ski jackets were produced. The actual material consumption was 1 135 metres, and the actual material price was CZK 405 per metre. The actual labour time required was 2 015 hours, and the average actual labour rate was CZK 84 per hour.

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Tasks:

1. Determine the standard cost per one ski jacket.
2. Calculate and analyse the variances, and qualify their quantitative and qualitative part.

Solution:

1. Determine the standard cost per one ski jacket.

2. Calculate and analyse the variances, and qualify their quantitative and qualitative part.

Material cost:

Item	Variances	CZK
Actual cost		
Standard cost		
Total variance		
Quantitative part	$(Q_{st} - Q_{act}) * p_{st} =$	
Qualitative part	$(p_{st} - p_{act}) * Q_{act} =$	

st ... standard

act ... actual

p ... price

Q ... volume

Labour cost:

Item	Variances	CZK
Actual cost		
Standard cost		
Total variance		
Quantitative part	$(Q_{st} - Q_{act}) * p_{st} =$	
Qualitative part	$(p_{st} - p_{act}) * Q_{act} =$	

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Exercise 9.2

Enterprise POLAR produces thermal bottles. For June, the following standards and budgets were prepared:

Planned production volume: 25 000 units

Standard machine time per unit: 0,4 hours

Standard variable production overhead rate: CZK 120 per machine hour

Budgeted fixed production overheads for June: CZK 900 000

In reality, the company produced 23 000 units in June. Actual machine hours worked were 9 600 hours. Actual variable production overheads amounted to CZK 1 140 000 and actual fixed production overheads were CZK 930 000.

Assume that variable overheads are applied based on machine hours, and fixed overheads are controlled using the fixed budget and volume (capacity) analysis.

Tasks:

1. Calculate the standard (planned) variable overhead cost per unit.
2. Prepare the variably recalculated budget (flexible budget) for the actual output volume and standard machine hours.
3. Determine the variable overhead spending variance and variable overhead efficiency variance.
4. Prepare the linearly recalculated budget for total overheads and determine the yield (capacity/volume) variance for fixed overheads.
5. Determine the fixed overhead spending variance.
6. Summarize total overhead variance (variable + fixed) and briefly interpret the results.

Solution:

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Source of exercises: Šoljaková et al. (2011); Vlčková (2016)

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10 Decision making on existing capacities. Decision making on future capacities

Capacity decisions are an important part of managerial decision-making. Managers must decide how to use existing capacities efficiently and whether it is necessary to change capacity levels in the future. These decisions directly influence costs, revenues, profit, and long-term competitiveness.

This chapter focuses on decision making related to the use of existing capacities in the short term and decisions about future capacities in the long term. It explains how managers evaluate capacity utilization, idle capacity, and bottlenecks, and how cost and revenue information supports decisions such as accepting special orders, outsourcing, expanding production, or investing in new capacity. The chapter highlights the role of relevant costs and benefits in making rational and economically sound capacity decisions.



Chapter objectives

The objectives of this chapter are to:

- explain the importance of capacity decisions in managerial accounting,
- distinguish between short-term decisions on existing capacities and long-term decisions on future capacities,
- identify relevant and irrelevant costs for capacity-related decision making,
- explain how capacity utilization and idle capacity affect costs and profit,
- analyze decisions such as accepting special orders, outsourcing, or changing production volume,
- explain the role of bottlenecks and limiting factors in capacity decisions,
- describe how investment decisions influence future capacity and cost structure.

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10.1 Basic Terminology According to CIMA (2005)

Capacity

The maximum level of output that an organization can produce using its available resources.

Capacity utilization

The extent to which available capacity is actually used, usually expressed as a percentage.

Idle capacity

The portion of capacity that is not used in a given period.

Relevant cost

A future cost that will change as a result of a decision and is therefore relevant for decision-making.

Irrelevant cost

A cost that will not change as a result of a decision and should not influence the decision.

Opportunity cost

The benefit that is lost when one alternative is chosen instead of another.

Sunk cost

A cost that has already been incurred and cannot be changed by any future decision.

Limiting factor (bottleneck)

A resource that restricts the level of output and limits the ability to increase production.

Contribution margin per unit

The difference between selling price and variable cost per unit, used to evaluate capacity usage.

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Contribution margin per limiting factor

Contribution margin related to the scarce resource, used to prioritize products when capacity is limited.

Make-or-buy decision

A decision whether to produce a component internally or purchase it from an external supplier.

10.2 Decision Making on Existing Capacities (Short-Term Decisions)

Decision making on existing capacities focuses on short-term managerial decisions, where the current production capacity cannot be changed. In the short run, capacity is considered fixed, and management must decide how to use available resources in the most efficient way.

Typical short-term capacity decisions include accepting or rejecting special orders, choosing the optimal product mix, deciding whether to produce internally or out-source part of production, and managing idle or underutilized capacity. These decisions directly affect profit, but they do not usually change fixed costs in the short term.

Relevant and Irrelevant Costs in Capacity Decisions

A key principle in short-term decision making is the distinction between relevant and irrelevant costs.

Relevant costs are future costs that differ between alternatives and therefore influence the decision. In capacity decisions, relevant costs usually include variable costs and any additional costs caused by the decision.

Irrelevant costs are costs that do not change as a result of the decision. Typical examples are sunk costs and fixed costs that remain unchanged regardless of the decision. These costs should not influence short-term capacity decisions.

Managers should focus only on costs and revenues that will change as a result of the decision.

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Use of Contribution Margin

The most important indicator for decision making on existing capacities is the contribution margin. Contribution margin shows how much each unit of output contributes to covering fixed costs and generating profit.

If spare capacity exists, a decision is usually profitable if the contribution margin is positive, even if the selling price is lower than the full cost. Fixed costs are already incurred and will not increase in the short term.

Contribution margin is therefore the main criterion for evaluating special orders and alternative uses of existing capacity.

Special Orders and Spare Capacity

A special order is an additional order offered at a price different from the normal selling price. Special orders are often considered when the company has unused capacity.

A special order should be accepted if:

- the selling price covers variable costs,
- the order does not displace regular sales,
- no additional fixed costs are incurred,
- there are no negative long-term effects (for example on market prices or customer relationships).

If capacity is fully utilized, accepting a special order may require rejecting regular orders, which introduces opportunity costs.

Idle Capacity and Its Impact

Idle capacity occurs when available capacity is not fully used. Idle capacity leads to lower capacity utilization and higher fixed costs per unit, which reduces profitability.

From a short-term perspective, idle capacity represents an opportunity. As long as variable costs are covered, additional production can improve profit by contributing to fixed costs. However, management must also consider quality, delivery reliability, and strategic factors.

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Limiting Factors and Bottlenecks

When capacity is limited by a bottleneck, management must decide how to allocate scarce resources. In such cases, decisions should be based on contribution margin per unit of the limiting factor, not per unit of product.

This approach helps maximize total contribution and profit under capacity constraints. Identifying and managing bottlenecks is therefore essential for effective short-term capacity decisions.

10.3 Decision Making on Future Capacities (Long-Term Decisions)

Decision making on future capacities focuses on long-term strategic decisions that change the level or structure of production capacity. Unlike short-term decisions, long-term capacity decisions usually require significant investments and have lasting effects on costs, revenues, and competitiveness.

Future capacity decisions influence not only production volume but also technology, cost structure, flexibility, and risk. Because these decisions are difficult or expensive to reverse, they require careful analysis and reliable information.

Nature of Long-Term Capacity Decisions

Long-term capacity decisions typically involve:

- expanding or reducing production capacity,
- investing in new machinery or technology,
- replacing existing assets,
- entering new markets or product lines,
- outsourcing or insourcing production activities.

These decisions affect both fixed costs and variable costs, and they change the cost behavior of the company. Fixed costs usually increase with capacity expansion, while unit variable costs may decrease due to efficiency and economies of scale.

Relevant Costs and Benefits in Long-Term Decisions

In long-term capacity decisions, both costs and benefits must be considered over several periods. Relevant costs include:

- initial investment expenditures,

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- operating costs related to the new capacity,
- maintenance and operating savings,
- additional revenues generated by increased capacity,
- disposal or resale value of replaced assets.

Opportunity costs are also important. For example, using financial resources for one investment means they cannot be used for another project. Sunk costs, on the other hand, should not influence the decision, even though they are often mistakenly considered.

Role of Investment Appraisal

Long-term capacity decisions are closely linked to capital budgeting and investment appraisal. Managers must evaluate whether expected future cash flows justify the investment.

Common methods include:

- payback period,
- net present value (NPV),
- internal rate of return (IRR).

Although detailed financial calculations may be performed at a higher management level, managerial accounting provides the cost and revenue data needed for these analyses.

Capacity, Demand, and Risk

Future capacity decisions must be aligned with expected demand. Overestimating demand may lead to excess capacity and high fixed costs, while underestimating demand may result in lost sales and customer dissatisfaction.

Managers must consider uncertainty and risk, including:

- changes in market demand,
- technological developments,
- price volatility,
- competitive behavior.

Scenario analysis and sensitivity analysis are often used to evaluate how changes in assumptions affect results.

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Flexibility and Strategic Considerations

Capacity decisions should not be based only on short-term profitability. Flexibility is an important strategic factor. Flexible capacity allows companies to adapt to demand changes, introduce new products, or adjust production levels.

Strategic considerations may include:

- long-term competitive advantage,
- quality and reliability,
- environmental and regulatory requirements,
- workforce skills and availability.

These factors may justify higher costs if they support long-term objectives.

Link Between Short-Term and Long-Term Capacity Decisions

Short-term capacity decisions and long-term capacity decisions are closely connected. Repeated use of overtime, frequent bottlenecks, or constant rejection of orders may signal the need for capacity expansion.

Variance analysis and performance data from existing capacities provide valuable information for evaluating future capacity investments. In this way, managerial accounting supports both operational and strategic capacity decisions.

10.4 Short-Term vs. Long-Term Capacity Decisions

Capacity decisions can be divided into short-term and long-term decisions based on their time horizon and impact on the cost structure.

Short-term capacity decisions focus on the use of existing capacity. In the short run, capacity is fixed and managers cannot easily change the level of fixed costs. Decisions are mainly operational and include accepting special orders, adjusting production volume, managing idle capacity, and choosing the optimal product mix. The main decision criterion is contribution margin and relevant costs.

Long-term capacity decisions focus on changing the level or structure of capacity. These decisions are strategic and usually involve investments in new equipment, technology, or facilities. Fixed costs change significantly, and decisions are based on long-term profitability, expected cash flows, risk, and strategic objectives.

Short-term decisions are typically reversible and involve lower risk, while long-term decisions are difficult to reverse and involve higher uncertainty.

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10.5 Capacity Utilization and Idle Capacity

Capacity utilization measures how much of the available capacity is actually used. It is usually expressed as a percentage.

$$\text{Capacity utilization} = \text{Actual output} / \text{Maximum available capacity} * 100$$

High capacity utilization means that resources are used efficiently. Low capacity utilization indicates idle capacity, which increases fixed cost per unit and reduces profitability.

Idle capacity represents unused potential. In the short term, idle capacity creates an opportunity to increase output without increasing fixed costs. In the long term, persistent idle capacity may indicate overinvestment or declining demand and may require capacity reduction or restructuring.

Managers must monitor capacity utilization regularly, because it directly affects cost behavior, pricing decisions, and investment planning.



Chapter summary

This chapter focused on managerial decision-making related to existing and future production capacities. It explained how capacity decisions influence costs, revenues, profit, and long-term competitiveness. A clear distinction was made between short-term decisions on existing capacities and long-term decisions on future capacities.

The chapter described short-term capacity decisions, such as accepting special orders, managing idle capacity, and allocating limited resources under bottlenecks. These decisions are based on relevant costs and contribution margin, while fixed costs are usually irrelevant in the short term. Long-term capacity decisions were presented as strategic decisions that involve investments, changes in cost structure, and higher levels of risk and uncertainty.

The chapter also explained the importance of capacity utilization and idle capacity, showed how capacity indicators support managerial control, and highlighted common decision-making pitfalls in capacity management. Overall, the chapter demonstrated how managerial accounting provides essential information for efficient use of capacity and informed capacity planning in both the short and long term.

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Key terms

Capacity
Capacity utilization
Idle capacity

Make-or-buy decision
Short-term decision
Long-term decision
Investment decision

Sunk cost
Contribution margin
Limiting factor



Questions

1. What is capacity and why is it important in managerial decision-making?
2. What is the difference between short-term and long-term capacity decisions?
3. What costs are relevant for short-term capacity decisions and why?
4. Why are fixed costs usually irrelevant in short-term decisions?
5. What is idle capacity and how does it affect profitability?
6. When should a special order be accepted or rejected?
7. What is a limiting factor (bottleneck) and how does it influence decisions?
8. What is opportunity cost and why is it important in capacity management?
9. What risks are connected with long-term capacity expansion?
10. How does capacity utilization information support investment decisions?



Exercises

Exercise 10.1

The company NORDIC produces two products: A and B. The company has enough demand to sell all production. However, the company is limited by one bottleneck resource: machine hours. Available machine hours per month are 4 800 hours. The following data apply:

Product A	Product B
Selling price: CZK 520 per unit	Selling price: CZK 430 per unit
Variable costs: CZK 340 per unit	Variable costs: CZK 250 per unit

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Machine hours required: 1.5 hours per unit	Machine hours required: 1.0 hour per unit
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Fixed costs per month are CZK 650 000 (fixed and unchanged). The company plans to use all available machine hours.

Tasks:

1. Calculate the contribution margin per unit for product A and product B.
2. Calculate the contribution margin per machine hour for each product.
3. Determine the optimal production mix to maximize profit.
4. Calculate the expected monthly profit.

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Variant: Limited Demand for Product B

Assume the same data as in the previous example. However, due to market conditions, the maximum demand for Product B is limited to 3 500 units per month. Available machine hours remain 4 800 hours.

Task:

Determine the optimal production mix and calculate the expected monthly profit.

Exercise 10.2

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The company ROCK currently produces outdoor equipment. Due to increasing demand, the management is considering expanding production capacity by purchasing a new machine.

Current situation • Current production capacity: 50 000 units per year • Current contribution margin: CZK 420 per unit • All current capacity is fully utilized.	Option: Purchase of a new machine • Additional capacity: 20 000 units per year • Purchase price of the machine: CZK 6 000 000 • Expected useful life: 5 years • Residual value: CZK 0 • Annual fixed operating costs of the machine: CZK 500 000 • Variable cost per additional unit: already included in the contribution margin • Expected demand: the company can sell all additional units
---	---

Assume straight-line depreciation, no changes in the selling price, and that the required rate of return is not explicitly given, so the decision is based on profit comparison.

Tasks:

1. Calculate the annual depreciation of the new machine.
2. Calculate the annual incremental profit from the capacity expansion and decide whether the company should invest in the new machine.

Solution:

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Extension of the exercise

The company ROCK currently produces outdoor equipment. Demand is growing, and the company needs additional capacity. Management is considering two alternatives for the next 5 years. The contribution margin (before any capacity-related fixed costs) is CZK 420 per unit.

Option 1: Purchase a new machine (own capacity) • Additional capacity: 20 000 units per year • Purchase price: CZK 6 000 000 • Useful life: 5 years • Residual value: CZK 0 • Annual fixed operating costs: CZK 500 000 • Straight-line depreciation	Option 2: Outsourcing • The company can outsource up to 20 000 units per year • Outsourcing fee: CZK 160 per unit • No additional fixed costs
---	--

Risk and uncertainty (demand scenarios)

Management expects one of the following demand levels for the additional units:

- Scenario A (high demand): 20 000 units per year (probability 30 %)
- Scenario B (medium demand): 15 000 units per year (probability 50 %)
- Scenario C (low demand): 10 000 units per year (probability 20 %)

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Assume that the selling price and unit variable costs (other than outsourcing) remain unchanged; and the company can sell all units produced or outsourced in each scenario; and ignore taxes and discounting (simple profit comparison).

Tasks:

1. Calculate annual profit impact of Option 1 (own machine) in each scenario.
2. Calculate annual profit impact of Option 2 (outsourcing) in each scenario.
3. Calculate expected annual profit (weighted by probabilities) for both options.
4. Decide which option is better and briefly explain the risk aspect.

Solution:

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11 Controlling

Controlling is an important part of modern management. Its main purpose is to support managers in planning, monitoring, and evaluating business activities. Controlling connects accounting information with decision-making and helps ensure that company goals are achieved in an effective and efficient way.

Controlling is not only about checking results after they occur. It is a continuous process that includes setting targets, comparing actual performance with plans, analysing variances, and proposing corrective actions. A controller provides managers with relevant, timely, and understandable information so they can react quickly to problems and improve performance.

In practice, controlling links budgeting, variance analysis, responsibility accounting, performance measurement, and strategic planning into one coordinated system. The goal is not only to control costs, but also to support long-term value creation and financial stability of the company.



Chapter objectives

The objectives of this chapter are to:

- explain the concept and role of controlling in modern management,
- distinguish between controlling and traditional financial control,
- describe the main tasks and functions of a controller,
- understand the relationship between controlling, budgeting, and performance measurement,
- differentiate between operational and strategic controlling,
- explain how controlling supports managerial decision-making,
- identify the tools used in controlling (budgets, variance analysis, KPIs, reports),
- understand how controlling contributes to achieving company objectives and long-term value creation.

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11.1 Basic Terminology According to CIMA (2005)

Controller

A person responsible for providing financial and managerial information to support planning, control, and decision-making within an organization.

Controlling

A management function focused on planning, monitoring, analysing, and supporting decision-making to ensure that organizational objectives are achieved.

Budgetary control

The process of comparing actual results with budgeted figures and analysing variances in order to take corrective action.

Variance analysis

The investigation of differences between planned (standard or budgeted) figures and actual results.

Key performance indicators (KPIs)

Quantitative measures used to evaluate the performance of an organization, department, or specific activity.

Performance measurement

The process of assessing efficiency and effectiveness using financial and non-financial indicators.

Rolling budget

A continuously updated budget that adds a new budget period as the current period ends.

Responsibility accounting

A system that collects and reports financial information according to areas of responsibility within an organization.

Strategic control

Monitoring and evaluation of long-term objectives and strategic plans.

Operational control

Control focused on short-term activities and day-to-day operations.

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11.2 Functions and Tasks of Controlling

Controlling supports management in achieving company goals. It does not replace management, but provides information, analysis, and recommendations that help managers make better decisions.

The main functions of controlling can be divided into several areas.

Planning support

Controlling participates in the preparation of plans and budgets. Controllers help define targets, estimate costs and revenues, and evaluate different scenarios. They ensure that plans are realistic, internally consistent, and aligned with the company's strategy.

Monitoring and comparison

Controlling regularly compares actual results with planned values. This includes financial indicators such as revenues, costs, profit, and cash flow, but also non-financial indicators such as productivity, quality, or customer satisfaction. The goal is to identify variances early.

Variance analysis

When differences between planned and actual results occur, controlling analyses their causes. It distinguishes between favourable and unfavourable variances and identifies responsible departments or factors. This analysis supports corrective actions.

Reporting

Controllers prepare regular management reports. These reports summarize key information in a clear and understandable form. Reports may include financial statements, performance indicators, trend analyses, and risk information. The aim is to provide managers with relevant and timely information.

Decision support

Controlling evaluates different alternatives before important decisions are made. This may include investment evaluation, pricing decisions, make-or-buy decisions, or capacity planning. Controllers use data from managerial accounting to calculate expected impacts on profit and cash flow.

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Coordination

Controlling ensures that different departments work toward common goals. It coordinates budgets and plans across departments and checks whether they are consistent. This helps avoid conflicts and improves cooperation within the company.

11.3 Operational and Strategic Controlling

Controlling can be divided into operational controlling and strategic controlling (you can see the tools in the Table).

Operational controlling focuses on short-term management. It deals with daily operations and short planning periods, usually one year or less. It includes budgeting, cost control, variance analysis, and monitoring of short-term performance indicators. The main goal is efficiency – using resources in the best possible way.

Strategic controlling focuses on long-term development. It supports strategic planning and evaluates whether the company is moving in the right direction. Strategic controlling analyses market trends, competition, investment decisions, and long-term profitability. The main goal is effectiveness – achieving the right long-term objectives.

Operational controlling answers the question: Are we doing things right?

Strategic controlling answers the question: Are we doing the right things?

Both types of controlling are closely connected. Short-term results must support long-term strategy, and strategic goals must be translated into operational plans.

Table 4: Operational and strategic controlling tools

Operational Controlling Tools	Strategic Controlling Tools
Budgeting	Strategic planning
Budget control	SWOT analysis
Variance analysis	PEST analysis
Standard costing	Portfolio analysis (e.g., product portfolio)
Cost-volume-profit analysis	Balanced Scorecard
Responsibility accounting	Benchmarking
KPI monitoring (short-term)	Long-term performance indicators
Cash flow control	Investment appraisal

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Most operational controlling tools have already been explained in the previous parts of these materials. In this section, we will therefore focus only on the strategic tools of controlling.

11.3.1 Strategic Tools of Controlling

Strategic controlling uses analytical tools that help management evaluate the long-term position of the company and support strategic decision-making. These tools focus on both the internal environment of the company and the external market environment. Their goal is to reduce uncertainty and support sustainable growth and long-term value creation.

SWOT Analysis

SWOT analysis is a simple but powerful tool for strategic evaluation. It examines four areas:

- Strengths – internal advantages of the company (for example strong brand, skilled employees, efficient production).
- Weaknesses – internal limitations (for example high costs, outdated technology, weak marketing).
- Opportunities – external possibilities for growth (for example new markets, technological innovation, increasing demand).
- Threats – external risks (for example strong competition, economic crisis, regulatory changes).

Strengths and weaknesses are internal factors that the company can influence. Opportunities and threats are external factors that the company usually cannot control but must react to.

SWOT analysis helps management understand the company's competitive position and supports strategic planning. It is often used at the beginning of strategic discussions.

PEST Analysis

PEST analysis focuses on the external macro-environment. It examines four main groups of factors:

- Political factors – laws, government policies, taxation, regulation.
- Economic factors – inflation, interest rates, economic growth, unemployment.

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- Social factors – demographic trends, lifestyle changes, consumer preferences.
- Technological factors – innovation, automation, digitalization.

Some companies extend this model to PESTEL by adding Environmental and Legal factors.

PEST analysis helps managers understand long-term external influences and anticipate risks or opportunities that may affect the company's strategy.

Porter's Five Forces Model

Porter's Five Forces model analyses the competitive structure of an industry. It examines five forces that influence profitability:

1. Threat of new entrants – how easy it is for new competitors to enter the market.
2. Bargaining power of suppliers – whether suppliers can increase prices or reduce quality.
3. Bargaining power of customers – whether customers can demand lower prices.
4. Threat of substitute products – availability of alternative products.
5. Rivalry among existing competitors – intensity of competition within the industry.

This model helps management understand competitive pressure and assess the attractiveness of an industry. It supports decisions about market entry, pricing, and long-term positioning.

Portfolio Analysis

Portfolio analysis evaluates products, services, or business units based on their strategic importance. One common model is the growth-share matrix (often associated with BCG).

Products are classified according to:

- Market growth rate
- Market share

Typical categories are:

- Stars – high growth and high market share
- Cash cows – low growth but high market share

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- Question marks – high growth but low market share
- Dogs – low growth and low market share

Portfolio analysis helps management decide where to invest, which products to develop, and which activities to reduce or eliminate.

Balanced Scorecard

The Balanced Scorecard (BSC) is a strategic performance management system. It combines financial and non-financial indicators to ensure that strategy is translated into measurable objectives.

The traditional Balanced Scorecard includes four perspectives:

- Financial perspective – profit, return on investment, cost control.
- Customer perspective – customer satisfaction, market share.
- Internal process perspective – efficiency, quality, innovation.
- Learning and growth perspective – employee skills, training, organizational development.

The Balanced Scorecard helps align operational activities with long-term strategy. It ensures that performance is evaluated from multiple dimensions, not only financial results.

Benchmarking

Benchmarking is the process of comparing the company's performance with competitors or best practices in the industry.

There are several types of benchmarking:

- Internal benchmarking – comparison between departments within the company.
- Competitive benchmarking – comparison with direct competitors.
- Functional benchmarking – comparison with best practices from other industries.

The goal is to identify performance gaps and implement improvements. Benchmarking supports continuous improvement and increases competitiveness.

Investment Appraisal

Investment appraisal is a key strategic tool used to evaluate long-term projects and capital expenditures.

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Common evaluation methods include:

- Payback period – measures how long it takes to recover the initial investment.
- Net present value (NPV) – calculates the present value of future cash flows minus the investment cost.
- Internal rate of return (IRR) – the discount rate at which NPV equals zero.
- Return on investment (ROI) – measures profitability relative to investment.

Investment appraisal helps determine whether a project creates value for the company and supports long-term strategy.

Strategic tools of controlling help managers understand the company's position, evaluate risks, and make informed long-term decisions. Unlike operational tools, which focus on short-term control, strategic tools focus on competitiveness, sustainability, and future development.

11.4 Controlling and Performance Measurement

A key part of controlling is performance measurement. This means evaluating how well the company or its departments achieve their objectives.

Performance is measured using financial indicators such as profit, return on investment, cost per unit, or cash flow. However, modern controlling also uses non-financial indicators, for example delivery time, product quality, innovation rate, or employee satisfaction.

Many companies use key performance indicators (KPIs) to monitor performance regularly. KPIs help managers focus on the most important areas and identify problems early.

Effective performance measurement requires:

- clearly defined objectives,
- measurable indicators,
- regular monitoring,
- and clear responsibility for results.

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Chapter summary

Controlling is an important management function that supports planning, monitoring, and decision-making. Its main purpose is to help managers achieve company objectives in an effective and efficient way. Controlling connects managerial accounting, budgeting, performance measurement, and strategic management into one coordinated system.

Operational controlling focuses on short-term management. It includes budgeting, budget control, variance analysis, standard costing, and monitoring of key performance indicators. Its main goal is efficiency and the proper use of resources.

Strategic controlling focuses on long-term development and competitiveness. It supports strategic planning and evaluates whether the company is moving in the right direction. Strategic tools include SWOT analysis, PEST analysis, Porter's Five Forces model, portfolio analysis, Balanced Scorecard, benchmarking, and investment appraisal.

The controller plays an important role as a business partner for management. The controller prepares reports, analyses data, identifies risks, and supports strategic and operational decisions.

Effective controlling improves transparency, coordination between departments, and overall business performance. It helps ensure that short-term actions are consistent with long-term strategy and contributes to sustainable value creation.



Key terms

Controller	Performance measurement	Porter's Five Forces
Operational controlling	Key performance indicators	Portfolio analysis
Strategic controlling	SWOT analysis	Balanced Scorecard
	PEST analysis	Benchmarking

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Questions

1. What is controlling and why is it important in modern management?
2. What is the difference between controlling and traditional financial control?
3. What are the main tasks of a controller in an organization?
4. What is the difference between operational and strategic controlling?
5. How does controlling support the budgeting process?
6. Why is variance analysis an important tool in controlling?
7. What are key performance indicators (KPIs) and why are they used?
8. Explain the purpose of SWOT analysis in strategic controlling.
9. What is the main idea of Porter's Five Forces model?
10. Why is investment appraisal important for strategic controlling?



Exercises

Exercise 11.1

The company ECOBIKE produces electric bicycles. The management wants to prepare a new five-year strategy.

The following information is available:

- The company has strong brand recognition in the local market.
- Production costs are higher than competitors' costs.
- Demand for eco-friendly transport is increasing.
- New foreign competitors are entering the market.
- The company has experienced engineers and designers.
- The company depends heavily on one key supplier of batteries.
- Government subsidies support electric mobility.
- Inflation is increasing material prices.

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Task:

Classify the factors into SWOT categories and briefly suggest one strategic recommendation.

Solution:

Strengths:	Weaknesses:
Opportunities:	Threats:

Exercise 11.2

The company HEALTHFOOD produces organic snacks and plans to enter a new foreign market.

The following external factors are identified:

- The government is introducing stricter food safety regulations.
- The economy is growing at 4% annually.
- Consumers prefer healthy and organic food.
- New food production technologies reduce waste.
- The country has high import tariffs.
- Digital marketing usage is rapidly increasing.

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Task:

Classify the factors according to PEST analysis and briefly explain whether the market entry seems attractive.

Solution:

Political:	Economic:
Social:	Technological:

Exercise 11.3

The company SPORTGEAR produces four product lines: A, B, C and D.

Current data:

Product	Sales (CZK mil.)	Contribution Margin (%)	Market Growth	Market Share
A	120	35 %	High	High
B	150	28 %	Low	High
C	90	18 %	High	Low
D	60	12 %	Low	Low

Total fixed costs: CZK 70 mil.

Management is considering discontinuing Product D because it is classified as a “Dog” in the BCG matrix.

However:

- If Product D is discontinued, total fixed costs will decrease only by CZK 4 mil.

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- Sales of Product B will decrease by CZK 20 mil., because some customers buy both B and D together.

Tasks:

1. Classify the products according to the BCG matrix.
2. Calculate current total contribution and profit.
3. Calculate new total contribution and profit if Product D is discontinued.
4. Should Product D be discontinued? Explain.

Solution:

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12 Exercise Solutions

Exercise 12.1

1-M, 2-M, 3-F, 4- F, 5-M, 6-M, 7-F, 8-F, 9-M, 10-M, 11-M, 12-M

Exercise 1.2

Production - main activity department; Logistics - main activity department; Canteen - service department; Education - service department; Financial management - administration and management department; IT Centre - service department; Marketing - main activity department; Controlling - administration and management department; Recreation Centre - special department; Distribution and sale - main activity department; Supply - main activity department; Secretariat of the CEO - administration and management department.

Exercise 1.3

Financial accounting

$$(180 \cdot 130 + 820 + 50 \cdot 160 + 610) / 230 = 142,74 \text{ CZK/kg}$$

$$(50 \cdot 142,74) / 10 = 713,70 \text{ K CZK/product}$$

$$713,70 \cdot 25 = 17\,842,50 \text{ CZK/month}$$

Consumption of material	Material in stock
17 842,50	17 842,50

Managerial accounting

$$125 \cdot 50 / 10 = 625 \text{ CZK/1 product}$$

$$625 \cdot 25 = 15\,625 \text{ CZK/month}$$

Connecting accounts	Consumption of material	Difference account
17 842,50	15 625	2 217,50

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Exercise 1.4

a) $80\,000 / 10 = 8\,000$ CZK/year

Cost - depreciation	Accumulated depreciation
8 000	8 000

b) $(80\,000 / 40\,000) * 4\,150 = 8\,300$ CZK/year

Connecting accounts	Cost - depreciation	Difference account
8 000	8 300	300

c) $90\,000 / 10 = 9\,000$ CZK/year

Connecting accounts	Cost - depreciation	Difference account
8 000	9 000	1 000

d) depreciation in total for years 2014-2018 = $8\,000 * 5 = 40\,000$ CZK

rest for depreciation = $90\,000 - 40\,000 = 50\,000$ CZK

annual depreciation = $50\,000 / 5 = 10\,000$ CZK/year

Connecting accounts	Cost - depreciation	Difference account
8 000	10 000	2 000

Exercise 2.1

The available hours of all employees = $1\,600 * 5 = 8\,000$ hours

Idle fixed cost = $(Q_{\max} - Q_{\text{act}}) * (FC / Q_{\max}) = 1\,000 * 350 = \text{CZK } 350\,000$

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Idle fixed cost is CZK 350 000. It means how much of the paid wages have not been used to make a profit.

Exercise 2.2

$$\text{Idle fixed cost} = (Q_{\max} - Q_{\text{act}}) * (FC / Q_{\max}) = (680 * 3 - 1\,950) * (1\,224\,000 / 680 * 3) = \text{CZK } 54\,000$$

Idle fixed cost is CZK 54 000. It means how much of the paid rent have not been used to make a profit.

Exercise 2.3

$$\text{Planned cost} = 1\,500 * 300 = \text{EUR } 450\,000$$

$$\text{Real cost} = \text{EUR } 420\,000$$

$$\text{Economy of variable costs is better } (450\,000 - 420\,000 = \text{EUR } 30\,000)$$

$$\text{Economy of variable costs per one product} = 1\,500 - (420\,000 / 300) = 100 \text{ EUR/unit}$$

$$\text{Planned fixed cost per unit} = 10\,000 / 1\,000 = 10 \text{ EUR/unit}$$

$$\text{Actual fixed cost per unit} = 10\,000 / 1\,250 = 8 \text{ EUR/unit}$$

$$\text{Economy of fixed cost per unit is better} = 10 - 8 = 2 \text{ EUR/unit}$$

Exercise 2.4

1. Effectiveness

$$\text{ROA} = (\text{EBIT} / \text{Assets}) * 100 = ((\text{EBIT} / \text{Cost}) * 100) * ((\text{Cost} / \text{Assets}) * 100) =$$

$$= \text{cost profitability} * \text{asset turnover}$$

$$\text{ROA}_{\text{pl}} = (144\,000 / 108\,000) * 100 * (108\,000 / 1020\,000) = 133,33 \% * 0,1059 = 14,12\%$$

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$$ROA_{act} = (190000 / 95000) * 100 * (95000 / 1130000) = 200 \% * 0,0841 = 16,82\%$$

Efficiency improved by 2,7%. The reason for this is higher cost profitability (66,67%), which outweighed the decrease of asset turnover (0,0218).

2. Cost economy

$$\text{Unit cost} = \text{Cost} / Q$$

$$\text{Unit cost planned} = 108\,000 / 18\,000 = 6 \text{ CZK / unit}$$

$$\text{Unit cost actual} = 95\,000 / 19\,000 = 5 \text{ CZK / unit}$$

Cost economy per unit improved by 1 CZK.

$$\text{Total cost difference} = C_{pl} - C_{act}$$

$$\text{Total cost difference} = 108\,000 - 95\,000 = 13\,000 \text{ CZK.}$$

Cost economy in total improved by 13 000 CZK.

3. Efficiency

$$\text{Profit difference} = P_{act} - P_{pl} = 190\,000 - 144\,000 = \text{CZK } 46\,000$$

$$\text{Cost profitability difference} = \text{Cost profitability actual} - \text{Cost profitability planned} =$$

$$= P_{act} / C_{act} - P_{pl} / C_{pl} = 200 \% - 133 \% = 67 \%$$

Each crown of cost generated CZK 0,67 more profit.

Profit per unit:

$$\text{Planned profit per unit} = P_{pl} / Q_{pl} = 144000 / 18000 = \text{CZK } 8$$

$$\text{Actual profit per unit} = P_{act} / Q_{act} = 190000 / 19000 = \text{CZK } 10$$

Impact of the sale price:

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Planned revenues per unit = $R_{pl} / Q_{pl} = 252000 / 18000 = \text{CZK } 14$

Actual revenues per unit = $R_{act} / Q_{act} = 285000 / 19000 = \text{CZK } 15$

Efficiency of profit per unit increased by CZK 2 (10-8), of which CZK 1 (6-5) is due to an increase in cost economy and CZK 1 (15-14) is due to an increase in the sale price.

Exercise 3.1

1. Contribution margin = $p - v = 1000 - 600 = \text{CZK } 400$ (per one product)

Contribution to sales ratio = $c / m = 400 / 1000 = 0,4$

2. Profit = total revenues – total costs = $(30\,000 * 1\,000) - (30\,000 * 600 + 9\,000\,000) = \text{CZK } 3\,000\,000$

or

Profit = total contribution margin – fixed costs = $(400 * 30\,000) - 9\,000\,000 = \text{CZK } 3\,000\,000$

3. Natural BEP = fixed cost / contribution margin = $9\,000\,000 / 400 = 22\,500$ pieces

BEP as total revenues = fixed cost / contribution to sales ratio = $9\,000\,000 / 0,4 = \text{CZK } 22\,500\,000$

4. ROS (return on sales) = Profit / Revenues = $3\,000\,000 / 30\,000\,000 = 0,10$ (10%)

Profit in 2027 = ROS * Revenues = $0,1 * (35\,000 * 1\,000) = 3\,500\,000 \text{ CZK}$

Total costs + cost for advertising + profit = total revenues

$9\,000\,000 + 35\,000 * 600 + \text{cost for advertising} + 3\,500\,000 = 1\,000 * 35\,000$

Cost for advertising = $1\,500\,000 \text{ CZK}$

Exercise 3.2

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1. $TR = TC$

$$16500 * Q = 4000 * Q + 24\,000\,000$$

$$12500 * Q = 24\,000\,000$$

$$Q_{BEP} = 1920 \text{ jackets}$$

$$\text{or } Q_{BEP} = FC / c = 24\,000\,000 / (16500 - 4000) = 1920 \text{ jackets}$$

2. $TR = TC + \text{profit}$

$$16500 * Q = 4000 * Q + 24\,000\,000 + 4\,000\,000$$

$$Q_{BEP} = 2240 \text{ jackets or}$$

$$Q_{BEP} = (FC + \text{profit}) / c = (24\,000\,000 + 4\,000\,000) / (16500 - 4000) = 2240 \text{ jackets}$$

Exercise 3.3

Total revenues = total costs + profit

$$12 * 99 * 100\,000 + 4,5 * Q = 325\,000\,000 + 0,5 * Q + 35\,000\,000$$

$$Q = 60\,300\,000 \text{ kWh or}$$

$$Q_{BEP} = (FC - FR + P) / c$$

$$Q_{BEP} = (325\,000\,000 - 118\,800\,000 + 35\,000\,000) / (4,50 - 0,50)$$

$$Q_{BEP} = 60\,300\,000 \text{ kWh}$$

Exercise 3.4

$$DC = 100 * (28\,000\,000 / 2\,000) + 4\,000\,000 * 0,10 = \text{CZK } 1\,800\,000$$

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$$DR = 100 * 20\ 000 = \text{CZK } 2\ 000\ 000$$

$$DP = DR - DC = 2\ 000\ 000 - 1\ 800\ 000 = \text{CZK } 200\ 000$$

Enterprise should accept the contract.

Exercise 3.5

$$v = 6 + 2 + 2 = 10 \text{ CZK}$$

$$FC = 4\ 000\ 000 - 1\ 000\ 000 = 3\ 000\ 000 \text{ CZK}$$

$$TC = FC + VC = FC + v * Q = 3\ 000\ 000 + 10 * 300\ 000 = 6\ 000\ 000$$

No, it is not true. The difference in costs is EUR 1 200 000. It is given by lower quantity of production, so the fixed cost per unit is higher.

Exercise 4.1

(a) the method of indirect costs allocation by simply dividing

Item	B1	B2	B3
Direct material (in CZK)	954000/5300= 180	624000/4800= 130	1281000/6100= 210
Indirect cost (in CZK)	150	150	150
Total cost	330	280	360

$$\text{Indirect cost per one book} = 2\ 430\ 000 / 16\ 200 = 150 \text{ CZK}$$

(b) the method of dividing by ratio numbers based on the number of pages

Item	B1	B2	B3
Production volume (in units)	5 300	4 800	6 100
Direct material (in CZK)	954 000	624 000	1 281 000
Number of pages in one book	150	180	230
Ratio number	1	180/150=1,2	230/150=1,53

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Converted unit	5300	5760	9333
Indirect cost per 1 book	119,16*1=	119,16*1,2=	119,16*1,53=
	119,16	142,99	182,31

Indirect cost on converted unit = 2430000 / (5300+5760+9333) = 119,16 CZK

Item	B1	B2	B3
Direct material (in CZK)	180	130	210
Indirect cost (in CZK)	119,16	142,99	182,31
Total cost	299,16	272,99	392,31

Exercise 4.2

Common costs per one lesson = 589 600 / 268 = 2200 CZK

Jumping 165 000; Fitbox 154 000; Pilates 143 000; Yoga 127 600

Exercise 4.3

a) Common costs per 1 m² of leased area $\frac{232\,000}{290} = 800$ CZK

b) Common costs per 1 CZK of rent = $\frac{232\,000}{476\,500} = 0,4868835257$ CZK

	Tenant A	Tenant B	Tenant C	Total
a)	72 000 (90*800)	104 000 (130*800)	56 000 (70*800)	232 000
b)	73 616,79 (0,49*151 200)	98 739,98 (0,49* 202 800)	59 643,23 (0,49*122 500)	232 000

Exercise 4.4

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1.

$$\text{Costs per 1 hour of direct wages} = \frac{\text{Total common costs } 2\,950\,000}{\text{Total hours of work } 4\,500} = 655,56 \text{ CZK}$$

$$\text{Indirect costs for all vests} = 2\,100 * 655,56 = 1\,376\,676 \text{ CZK}$$

$$\text{Indirect costs per 1 vest} = \frac{1\,376\,676}{1400} = 983,34 \text{ CZK}$$

$$\text{Indirect costs for all skirts} = 1\,500 * 655,56 = 983\,340 \text{ CZK}$$

$$\text{Indirect costs per 1 skirt} = \frac{983\,340}{1200} = 819,45 \text{ CZK}$$

$$\text{Indirect costs for all caps} = 900 * 655,56 = 590\,004 \text{ CZK}$$

$$\text{Indirect costs per 1 cap} = \frac{590\,004}{1150} = 513,05 \text{ CZK}$$

Item	Vest	Skirt	Cap
Direct material (CZK)	200	216,67	82,61
Direct wages (CZK)	195	150	110
Indirect costs (CZK)	983,34	819,45	513,05
Total	1 378,34	1 186,12	705,66

2. Find out profit or loss of company if the stocks are calculated by absorption costing.

2.1. Profit or loss based on costs incurred by period

Costs (CZK)		Revenues (CZK)	
Actual total costs (635000+579500+2950000)	4 164 500	Revenues from sales	5 750 000
The increase in finished products (200*1378,34+ 100*1186,12+30*705,66)	-415 449,8	(1200*1800+1100*2500 +1120*750)	
Total costs	3 749 050,2	Total revenues	5 750 000
Profit (CZK)	2 000 949,8		

2.2. Profit or loss based on cost of sales volume

Costs (CZK)	Revenues (CZK)
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Cost of sales volume (1200*1378,34+ 1100*1186,12+ 1120*705,66)	3 749 079,2	Revenues from sales (1200*1800+1100*2500 +1120*750)	5 750 000
Total costs	3 749 079,2	Total revenues	5 750 000
Profit (CZK)	2 000 920,8		

Exercise 5.1

1. Determine the unit cost of the desk used as an input into cube production and the unit cost per 1 m² of cubes.

Cost per one desk = 8 600 000 / 60 000 = 143,33 CZK

Cost per 1 m² of mosaic stone cube:

- a) Cost per 1 m² of mosaic stone cubes from stone desks=

$$143,33 / 1,5 = 95,55 \text{ CZK}$$

- b) Cost of processing (production) of mosaic stone cubes per 1 m² =

$$1\,750\,000 / 78\,000 = 22,44 \text{ CZK}$$

Total cost per 1 m² of mosaic stone cube = 117,99 CZK

3. Determine the economic result (profit or loss) under two approaches:

1. using a profit and loss statement based on costs incurred in the period

Profit and loss statement

Cost (in thousand CZK)	Revenues (in thousand CZK)
Total costs: 8 600 + 1 750 = 10 350	Revenues from sale:
Work in progress:	75 000 * 200 + 7 000 * 150 = 16 050
a) desk (60-52-7)*143,33 = -143,33	

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b) mosaic cube (78 – 75) * 117,99 =			
	-353,97		
Total costs	9 852,56	Total revenues	16 050
Profit	6 197,44		

2. The profit and loss account is prepared on the basis of the cost of the product sold:

Profit and loss statement

Cost (in thousand CZK)		Revenues (in thousand CZK)	
Cost of the product sold:		Revenues from sale:	
75000*117,99 + 7000*143,33=		75 000 * 200 + 7 000 * 150	
	9 852,56		16 050
Total costs	9 852,56	Total revenues	16 050
Profit	6 197,44		

Exercise 5.2

Profit or loss under absorption costing (cost of goods sold approach), in CZK:

Month	April	May	June
Production (units)	10 000	10 000	10 000
Product sold (units)	10 000	8 000	12 000
Revenues from sales (CZK)	200 000	160 000	240 000
Cost of units sold (CZK)	10 000 * 13 = 130 000	8 000 * 13 = 104 000	12 000 * 13 = 156 000
Profit (CZK)	70 000	56 000	84 000

Profit or loss under marginal costing (cost of goods sold approach), in CZK:

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Month	April	May	June
Production (units)	10 000	10 000	10 000
Product sold (units)	10 000	8 000	12 000
Revenues from sales (CZK)	200 000	160 000	240 000
Variable costs of units sold (CZK)	10 000 * 8 = 80 000	8 000 * 8 = 64 000	12 000 * 8 = 96 000
Contribution (CZK)	200 000 – 80 000 = 120 000	160 000 – 64 000 = 96 000	240 000 – 96 000 = 144 000
Fixed costs (CZK)	50 000	50 000	50 000
Profit (CZK)	70 000	46 000	94 000

Total profit is 210 000 CZK.

Exercise 5.3

Total joint costs:	Products:
Cost for chickens 30 * 2000 = 60 000 CZK	Legs 0,3 * 2000 = 600 kg
<u>The secondary costs 37 000 CZK</u>	Breast 0,5 * 2000 = 1000 kg
	<u>Mix for soup 0,2 * 2000 = 400 kg</u>
Total costs 97 000 CZK	Total 2000 kg

a) allocation of joint costs based on relative selling price

Item	Legs	Breast	Mix for soup	Total
Volume	600 kg	1000 kg	400 kg	2000 kg
Price per 1 kg	65 CZK	90 CZK	20 CZK	
Revenues from sales	39000	90000	8000	137000
The Revenue Share	0,2847	0,6569	0,0584	
The cost share	27616 CZK	63719 CZK	5665 CZK	
Cost per 1 kg	46,03 CZK	63,72 CZK	14,16 CZK	
Profit per 1 product	18,97 CZK	26,28 CZK	5,84 CZK	

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b) allocation of joint costs based on physical output (weight)

Item	Legs	Breast	Mix for soup	Total
Volume	600 kg	1000 kg	400 kg	2000 kg
Price per 1 kg	65 CZK	90 CZK	20 CZK	
The volume share	0,3	0,5	0,2	
The cost share	29100 CZK	48500 CZK	19400 CZK	97000 CZK
Cost per 1 kg	48,5 CZK	48,5 CZK	48,5 CZK	
Profit per 1 product	16,5 CZK	41,5 CZK	-28,5 CZK	

Exercise 5.4

Cost for processing = $800\ 000 / 40\ 000 = 20$ EUR per one machine hour

Cost for machine settings = $140\ 000 / 28 = 5\ 000$ EUR per 1 setting

Cost for material supply = $260\ 000 / 130 = 2\ 000$ EUR per 1 supply

Cost for machine settings:

Product 1 = $(5\ 000 * 8) / 30\ 000 = 1,33$ EUR

Product 2 = $(5\ 000 * 20) / 5\ 000 = 20$ EUR

Cost for material supply:

Product 1 = $(2\ 000 * 50) / 30\ 000 = 3,33$ EUR

Product 2 = $(2\ 000 * 80) / 5\ 000 = 32$ EUR

Item	Product 1	Product 2
Direct material per unit	EUR 20	EUR 15
Direct labour per unit	EUR 10	EUR 5
Processing cost	EUR 20	EUR 40
Settings cost	EUR 1,33	EUR 20
Supply cost	EUR 3,33	EUR 32
Total	EUR 54,66	EUR 112

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Exercise 6.1

Item	Task 1	Task 2	Task 3
Direct costs	150*20 000 = 3 000 000	150*18 000 = 2 700 000	2 700 000
Variable production overheads	150*0,5*20 000 = 1 500 000	150*0,5*18 000 = 1 350 000	1 350 000
Fixed costs	2 400 000	2 400 000	(2 400 000/20 000)*18 000= 2 160 000
Total	6 900 000	6 450 000	6 210 000

Task 4	Actual costs	Variably recalculated budget	Linearly recalculated budget	Efficiency variance (VRB-AC)	Yield variance (LRB-VCB)
Direct costs	2 610 000	2 700 000	2 700 000	90 000	0
Variable overheads	1 440 000	1 350 000	1 350 000	-90 000	0
Fixed costs	2 124 000	2 400 000	2 160 000	276 000	-240 000
Total	6 174 000	6 450 000	6 210 000	276 000	-240 000

Exercise 6.2

Task 1	140 000 km	150 000 km	160 000 km
Direct costs	10*140 000= 1 400 000	1 500 000	1 600 000
Variable production overheads	(150 000/150 000)*140 000 = 140 000	150 000	160 000
Fixed costs	910 000	910 000	910 000

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Total costs	2 450 000	2 560 000	2 670 000
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Task 2	Variably recalculated budget	Linearly recalculated budget
Direct costs	1 650 000	1 650 000
Variable overheads	165 000	165 000
Fixed costs	910 000	1 001 000
Total costs	2 725 000	2 816 000

Exercise 7.1

1. Evaluate the performance of the Production Department as a cost centre.

Planned total costs = 1 560 000 + 60 * 12 000 + 420 000 = CZK 2 700 000

Actual total costs = 1 575 000 + 690 000 + 435 000 = CZK 2 700 000

Static variance = Actual total costs – Planned total costs = 2 700 000 – 2 700 000 = CZK 0

Variably recalculated budget (flexible budget for 11 500 units):

Planned direct cost per unit = 1 560 000 / 12 000 = CZK 130 / unit

Flexible (variably recalculated) costs for 11 500 units:

Direct costs (flexible) = 130 * 11 500 = 1 495 000

Variable overhead (flexible) = 60 * 11 500 = 690 000

Fixed overhead (flexible) = 420 000 (fixed stays unchanged)

Flexible budget total = 1 495 000 + 690 000 + 420 000 = CZK 2 605 000

Total variance = Actual total costs – Flexible budget total = 2 700 000 – 2 605 000 = CZK 95 000 Unfavourable

Breakdown of variances:

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Direct cost variance = 1 575 000 – 1 495 000 = CZK 80 000 U

Variable overhead variance = 690 000 – 690 000 = CZK 0

Fixed overhead variance = 435 000 – 420 000 = CZK 15 000 U

2. Evaluate the performance of the Sales Department as a revenue centre.

Planned revenue = 12 000 * 320 = CZK 3 840 000

Actual revenue = 11 800 * 315 = CZK 3 717 000

Revenue variance = Actual revenue – Planned revenue = 3 717 000 – 3 840 000 = CZK 123 000 Unfavourable

Breakdown (price and volume effect):

Volume variance = (11 800 – 12 000) * 320 = (–200) * 320 = CZK 64 000 U

Price variance = (315 – 320) * 11 800 = (–5) * 11 800 = CZK 59 000 U

3. Determine the profit of Product Division A as a profit centre based on actual data.

Profit = Actual revenue – Actual costs (incurred in April) = 3 717 000 – 2 700 000 = CZK 1 017 000

Exercise 7.2

1. Calculate planned profit and actual profit for April.

Planned profit:

Planned variable costs = 0.60 * 6 000 000 = 3 600 000

Planned profit = Sales – Variable costs – Fixed costs = 6 000 000 – 3 600 000 – 1 800 000 = CZK 600 000

Actual profit:

Actual variable costs = 0.62 * 6 300 000 = 3 906 000

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Actual profit = 6 300 000 – 3 906 000 – 1 760 000 = CZK 634 000

Profit increased by: 634 000 – 600 000 = CZK 34 000

2. Calculate planned and actual net working capital (NWC).

Planned NWC = 900 000 + 600 000 – 500 000 = CZK 1 000 000

Actual NWC = 1 400 000 + 800 000 – 520 000 = CZK 1 680 000

NWC increased by: 1 680 000 – 1 000 000 = CZK 680 000

3. Calculate planned and actual profitability of working capital (P / NWC).

Planned P / NWC = 600 000 / 1 000 000 = 0.60

Actual P / NWC = 634 000 / 1 680 000 = 0.3774 (approximately 0.38)

Change: 0.38 – 0.60 = –0.22

Exercise 8.1

1. variable costs = CZK 10
2. full costs = CZK 12
3. full costs with a profit margin = CZK 15,60
4. market price = CZK 15

Exercise 8.2

Price reduction	Increased volume
5 %	5 / (25 – 5) = 25 %
10 %	10 / (25 – 10) = 66 %
15%	15 / (25 – 15) = 150 %
20 %	20 / (25 – 20) = 400 %

Exercise 8.3

1. Determine the transfer price per 1 km.

Item	Calculation	CZK/km
Direct material - diesel	34/100*25	8,50
Variable overhead cost	160 000 / 80 000	2
Fixed cost	200 000 / 80 000	2,50

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Total		13
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- Determine the profit or loss of the department using an internal price at the level of variable costs.

Item	Actual cost	Predetermined costs	Difference
Fuel	$28\,100 * 25 = 702\,500$	$8,50 * 83\,000 =$	3 000
Overhead cost	$1\,117\,000 - 746\,000 = 371\,000$	$2 * 83\,000 + 200\,000 = 366\,000$	-5 000
Profit or loss	1 073 500	1 071 500	-2 000
Price valuation of	$702\,500 - 746\,000 = -43\,500$		
Cost overruns			-45 500

Exercise 9.1

- Determine the standard cost per one ski jacket.

Direct material = $1,1 * 420 = 462$ CZK

Labour cost = $80 * 2 = 160$ CZK

Standard cost per one jacket = 622 CZK

- Calculate and analyse the variances, and qualify their quantitative and qualitative part.

Material cost:

Item	Variances	CZK
Actual cost	$1135 * 405$	459 675
Standard cost	$462 * 1000$	462 000
Total variance	462000 - 459675	2 325
Quantitative part	$(Q_{st} - Q_{act}) * p_{st} = (1,1 * 1\,000 - 1\,135) * 420$	-14 700
Qualitative part	$(p_{st} - p_{act}) * Q_{act} = (420 - 405) * 1\,135$	17 025

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Labour cost:

Item	Variances	CZK
Actual cost	2015 * 84	169 260
Standard cost	160 * 1000	160 000
Total variance	160 000 - 169 260	-9 260
Quantitative part	$(Q_{st} - Q_{act}) * p_{st} = (1\,000 * 2 - 2015) * 80$	-1 200
Qualitative part	$(p_{st} - p_{act}) * Q_{act} = (80 - 84) * 2015$	-8 060

Exercise 9.2

1. Calculate the standard (planned) variable overhead cost per unit.

Standard variable overhead per unit = $0,4 * 120 = \text{CZK } 48$ per unit

2. Prepare the variably recalculated budget (flexible budget) for the actual output volume and standard machine hours.

Standard hours allowed for actual output = $23\,000 * 0,4 = 9\,200$ hours

Variable overhead (flexible) = $9\,200 * 120 = \text{CZK } 1\,104\,000$

Fixed overhead (flexible) = $\text{CZK } 900\,000$

Total flexible budget overheads = $1\,104\,000 + 900\,000 = \text{CZK } 2\,004\,000$

3. Determine the variable overhead spending variance and variable overhead efficiency variance.

Variable overhead spending variance = Actual VOH – (Actual hours * standard rate) = $1\,140\,000 - (9\,600 * 120) = 1\,140\,000 - 1\,152\,000 = \text{CZK } 12\,000$ Favourable

Variable overhead efficiency variance = (Actual hours – Standard hours allowed) * standard rate = $(9\,600 - 9\,200) * 120 = 400 * 120 = \text{CZK } 48\,000$ Unfavourable

Check (total variable overhead variance) = Actual VOH – (Standard hours allowed * standard rate) = $1\,140\,000 - 1\,104\,000 = \text{CZK } 36\,000$ Unfavourable

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and 48 000 U – 12 000 F = 36 000 U (correct)

4. Prepare the linearly recalculated budget for total overheads and determine the yield (capacity/volume) variance for fixed overheads.

Planned variable overheads

Planned hours = 25 000 * 0.4 = 10 000 hours

Planned VOH = 10 000 * 120 = 1 200 000

Planned total overheads = Planned VOH + Fixed overhead budget = 1 200 000 + 900 000 = 2 100 000

Linearly recalculated budget (total overheads) for 23 000 units = 2 100 000 * (23 000 / 25 000) = 2 100 000 * 0,92 = CZK 1 932 000

Fixed overhead yield (volume/capacity) variance

Fixed overhead “allowed” at actual volume (linear) = 900 000 * (23 000 / 25 000)

= 900 000 * 0.92 = 828 000

Yield variance (fixed) = Fixed budget – Fixed allowed at actual volume = 900 000 – 828 000 = CZK 72 000 Unfavourable

5. Determine the fixed overhead spending variance.

Fixed overhead spending variance = Actual fixed overhead – Budgeted fixed overhead = 930 000 – 900 000 = CZK 30 000 Unfavourable

6. Summarize total overhead variance (variable + fixed) and briefly interpret the results.

Actual total overheads = Actual variable overheads + Actual fixed overheads

= 1 140 000 + 930 000 = CZK 2 070 000

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Total overhead variance (compared to the linearly recalculated budget) = Actual total overheads – Linearly recalculated budget = 2 070 000 – 1 932 000 = CZK 138 000 Unfavourable

Breakdown (all components)

- Variable OH spending variance: 12 000 F
- Variable OH efficiency variance: 48 000 U
- Fixed OH spending variance: 30 000 U
- Fixed OH yield (volume/capacity) variance: 72 000 U

Net variance = –12 000 + 48 000 + 30 000 + 72 000 = 138 000 U (correct)

Exercise 10.1

1. $CM(A) = 520 - 340 = \text{CZK } 180 \text{ per unit}$

$CM(B) = 430 - 250 = \text{CZK } 180 \text{ per unit}$

2. $CM \text{ per hour}(A) = 180 / 1.5 = \text{CZK } 120 \text{ per hour}$

$CM \text{ per hour}(B) = 180 / 1.0 = \text{CZK } 180 \text{ per hour}$

3. Therefore, the company should use all machine hours for Product B, because it gives CZK 180 per hour and Product A gives only CZK 120 per hour.

Optimal production of B = $4\,800 / 1.0 = 4\,800$ units

Optimal production of A = 0 units (if demand for B is unlimited)

4. Total contribution = $4\,800 * 180 = \text{CZK } 864\,000$

Profit = $864\,000 - 650\,000 = \text{CZK } 214\,000$

Variant: Limited Demand for Product B

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Machine hours used for B = $3\,500 \times 1.0 = 3\,500$ hours

Remaining machine hours = $4\,800 - 3\,500 = 1\,300$ hours

Machine hours per unit of A: 1.5 hours

Units of A = $1\,300 / 1.5 = 866$ units (rounded down to full units)

Total contribution from B = $3\,500 \times 180 = \text{CZK } 630\,000$

Total contribution from A = $866 \times 180 = \text{CZK } 155\,880$

Total contribution = $630\,000 + 155\,880 = \text{CZK } 785\,880$

Profit = $785\,880 - 650\,000 = \text{CZK } 135\,880$

Exercise 10.2

1. Annual depreciation = $6\,000\,000 / 5 = \text{CZK } 1\,200\,000$
2. Total contribution from additional capacity: $20\,000 \times 420 = \text{CZK } 8\,400\,000$

Total incremental fixed costs = $500\,000 + 1\,200\,000 = \text{CZK } 1\,700\,000$

Incremental profit = $8\,400\,000 - 1\,700\,000 = \text{CZK } 6\,700\,000$ per year

Extention of the exercise 10.2

1. Total annual fixed costs for Opt. 1 = $6\,000\,000 / 5 + 500\,000 = \text{CZK } 1\,700\,000$

Annual profit (Option 1) = $Q \times 420 - 1\,700\,000$

Scenario A: $Q = 20\,000$

Profit = $20\,000 \times 420 - 1\,700\,000 = \text{CZK } 6\,700\,000$

Scenario B: $Q = 15\,000$

Profit = $15\,000 \times 420 - 1\,700\,000 = \text{CZK } 4\,600\,000$

Scenario C: $Q = 10\,000$

Profit = $10\,000 \times 420 - 1\,700\,000 = \text{CZK } 2\,500\,000$

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2. Contribution margin after outsourcing = $420 - 160 = \text{CZK } 260$ per unit

Annual profit (Option 2) = $Q * 260$

Scenario A: $Q = 20\,000$

Profit = $20\,000 * 260 = \text{CZK } 5\,200\,000$

Scenario B: $Q = 15\,000$

Profit = $15\,000 * 260 = \text{CZK } 3\,900\,000$

Scenario C: $Q = 10\,000$

Profit = $10\,000 * 260 = \text{CZK } 2\,600\,000$

3. Option 1: Own machine: Expected profit = $0.30 * 6\,700\,000 + 0.50 * 4\,600\,000 + 0.20 * 2\,500\,000 = \text{CZK } 4\,810\,000$

Option 2: Outsourcing: Expected profit = $0.30 * 5\,200\,000 + 0.50 * 3\,900\,000 + 0.20 * 2\,600\,000 = \text{CZK } 4\,030\,000$

4. Step 4: Decision and risk comment

Option 1 has a higher expected annual profit by: $4\,810\,000 - 4\,030\,000 = \text{CZK } 780\,000$

Exercise 11.1

Strengths • Strong brand recognition • Experienced engineers and designers	Weaknesses • Higher production costs • Dependence on one key supplier
Opportunities • Growing demand for eco-friendly transport • Government subsidies	Threats • New foreign competitors • Inflation increasing material prices

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Exercise 11.2

Political • Stricter food safety regulations • High import tariffs	Economic • 4% economic growth
Social • Preference for healthy food	Technological • New production technologies • Growth of digital marketing

Exercise 11.3

1. Product A → Star; Product B → Cash Cow; Product C → Question Mark; Product D → Dog

2. Contribution: $120 * 35 \% + 150 * 28 \% + 90 * 18 \% + 60 * 12 \% = 107,4$ mil.

Profit = $107,4 - 70 = 37,4$ mil.

3. First, remove D contribution: Lost contribution from D = 7,2 mil.

Now adjust Product B sales: New sales of B = $150 - 20 = 130$ mil.

New contribution of B = $130 * 28 \% = 36,4$ mil.

Total contribution = $42 + 36,4 + 16,2 = 94,6$ mil.

New fixed costs = $70 - 4 = 66$ mil.

New profit = $94,6 - 66 = 28,6$ mil.

4. Profit decreases by = $37,4 - 28,6 = 8,8$ mil.

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Summary

This book has introduced the main principles and tools of managerial accounting and explained how they support management in decision-making.

Managerial accounting provides information for internal users and helps managers plan, control, and evaluate business activities. We examined cost classification, cost behaviour, contribution margin, and break-even analysis as key tools for understanding profitability. The book also presented different costing systems, budgeting, variance analysis, responsibility accounting, and performance measurement. These tools help monitor results and assign responsibility within the organization. Short-term and long-term decision-making were discussed in relation to capacity management and investment evaluation. Pricing decisions and transfer pricing showed how financial information supports both external and internal coordination. Finally, controlling was presented as a system that integrates planning, analysis, and strategy. Strategic tools such as SWOT, PEST, portfolio analysis, and Balanced Scorecard help companies remain competitive and create long-term value.

Managerial accounting is not only about numbers. It is a practical management tool that supports rational decisions, improves efficiency, and contributes to sustainable business success.

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