

# Modern Management Accounting

Study Guide  
and  
Key Concepts

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## Study Guide and Key Concepts

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## PREFACE

Briefly stated, the goal of the present course material in “Modern Management Accounting” is to present rational *economic thinking*. In order to do so we use a thoroughly developed pedagogical technique which can be used in a teacher led situation as well as in self-studies. The material is used in the training of business managers at the Uppsala University, Sweden.

The course that we are hereby offering current and future actors in the new east European market economies provides managers with the knowledge needed to control and develop a company in a positive direction. The material is comparatively extensive and requires a dedicated effort by the student in order to achieve expected results. This is, however, an effort that will give ample return in the long term.

The present study guide gives an overview of the goals and contents for the course as well as detailed reading instructions. It also contains a dictionary of the economic concepts most commonly used in the course.

Many people have been of great help in the production of the Russian version of “Modern Management Accounting”. The authors should, of course, be mentioned first of all: Rune Lönnqvist, Dag Smith and Bengt Öström, teachers and researchers at the Department of Business Study, Uppsala University.

The translation work has been excellently performed by Igor Ryzhenkov and Stella Sevander, teachers of Russian at the Umeå University. Among other collaborators we would especially like to mention Galina Krupina, Oleg Andreev and Olga Andreeva.

The course material has been thoroughly studied by teachers at the Department of Industrial Economics and Innovation of the St. Petersburg University of Economics and Finance. They have provided many constructive comments on the contents of the course.

Students using this course material are welcome to submit their comments in order to improve the contents of the course. Since this is the first Russian edition of the course it is expected that improvements with regard to contents as well as form will be necessary.

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# **I. STUDY GUIDE**

# INTRODUCTION

This study guide demonstrates the goals and contents of the course “Modern Management Accounting”. It also provides detailed reading instructions, and a dictionary of concepts used in the course.

The course is intended for internal training in companies as well as for students of business administration at institutions of higher education.

In company training programmes the course is primarily designed for decision-makers in the top and middle management in large companies who need basic knowledge about economic concepts. Naturally, people who are starting their own new businesses or who are already established businessmen will also benefit from this knowledge.

## **The goals of the course**

The course deals with general economic principles as they are expressed in a company operating in a market economy. This means that the economic reasoning and methods of analysis that are presented in the course are useful even for a company that does not have a market type management accounting system today. Thus, the course primarily deals with acquiring an *economic way of thinking* rather than mechanically learning specific techniques.

Detailed knowledge of business economics is no doubt necessary, but if basic economic reasoning has not been properly understood, it is difficult to learn the details which lead to success. A mechanical study of details without understanding basic relations generally results in an inability to correctly use the economic tools.

The goal of the course is *to provide people in managing positions with the economic knowledge required to actively control and develop a modern company operating in a market economy.*

## **The structure of the course**

The self-study course “Modern Management Accounting” consists of three parts, each one based on the same pedagogical structure. In terms of contents the three parts are cumulative so that part 2 presupposes knowledge contained in part 1 and part 3 presupposes knowledge contained in part 1 and part 2. The course is completely self-instructive.

The course consists of the following parts:

*Part 1* Financial Accounting

*Part 2* Product Costing and Capital Budgeting

*Part 3* Accounting for Cost Flows

The course design is based on experiences from pedagogical research showing that it is easier to learn and use knowledge which

is logically structured,  
has been presented both orally and in writing,  
has been actively processed by the reader,  
is related to the reader's own experience.

Each part of the course is therefore based on the following building blocks:

- A **textbook** with all the theoretical knowledge required in order to understand the topic.
- An **exercise book** filled with practical examples and exercises of varying degree of difficulty.
- **Solutions to the exercises** with step-by-step explanations so that your own work can easily be verified.
- A number of **audio cassettes** with explanations and comments on certain key exercises.
- A **computer program** for accounting to the third part of the course.

### **Study methods**

All parts of the course follow the same pedagogical logic; initially, the problems are treated theoretically, then follows an oral discussion of one of the key exercises with detailed comments on how to solve and analyse a specific problem. When you have studied a certain section of the textbook and listened to the comments on the audio cassettes belonging to this section it is time for a practical application of your knowledge on one or more exercises. Finally, after each exercise you are given an opportunity to verify if your solution is correct.

READ – LISTEN – PRACTICE – VERIFY
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By consequently observing the work cycle “read-listen-practice-verify”, proceed to the following section according to the same work cycle. During the course it has been found useful to repeat earlier sections to counteract forgetfulness and



aid learning for life. In this way “Modern Management Accounting” becomes the efficient tool it is design to be.

As should be immediately realised from what has been said above the training should not be considered complete merely with reading the textbook. With that it has, in fact, only started. Not until you completely master and are able to use the newly acquired knowledge yourself should training be considered completed. It is application, the concrete use of knowledge, which gives skill, competence, and understanding. The contents of the course will then be an integrated part of your self and your views on reality will change and develop.

The whole course will require at least two months full time study for most students to adequately master its contents. However, it is advisable to study the course on part time for a period of four to eight months. Study at your own speed but schedule your studies carefully. The best result is reached with short but regular working spells. Remember that self-study requires discipline. Whether or not the studies will be successful is primarily dependent on motivation – on the fact that you are really interested in learning, that you understand the reasons for the studies and realise what use you will have of your new knowledge.

## CONTENTS OF THE COURSE

Knowledge of modern management accounting is critically lacking in all Russian speaking countries as these are currently undergoing a transition to market economies. This material is well suited for university courses in business administration and management as well as for retraining of company personnel. The course gives a basic understanding of the relations between concepts used in business economics and of the economic effects of company decision-making about current and future business activities. The course is primarily devoted to accounting methods and techniques to be used in the management and the analysis of the economic situation of individual companies. More practically oriented techniques are only dealt with if these serve to explain general relationships.

In order for a company to survive in a market economy it should both maintain a sufficient liquidity to meet its financial obligations and be able to reach a level of profitability which satisfies the owners' demand for return on invested capital. It is the task of the company management and its managers with economic responsibility on all levels to make sure that these two basic requirements are met. In this context issues such as the following have to be analysed:

- What line of products are most profitable?
- How are sales revenues affected by changed selling prices and how are costs affected by volume changes and by changes in purchase prices?
- What connections are there between increased terms of credit, sales revenues and the liquidity of the company?
- What are the connections between the size of capital formation and the company's profitability?
- What capital investments satisfy the required profitability?
- How can different fields of activity be managed and evaluated?

Analysing such issues requires knowledge of the three topics covered in the course:

□ *Financial Accounting* dealing with basic economic concepts such as costs, revenues, assets, liabilities, stockholder equity and liquidity and the interrelations between these concepts.

□ *Product Costing and Capital Budgeting* dealing with cost allocation in price calculation, pooling of costs in specific decision situations and methods for evaluation of capital expenditures.

□ *Accounting for Cost Flows* dealing with information technology models for job-order and process accounting as well as methods for expected effects of cost distribution between different spheres of responsibility in the company.

The course material includes three parts. Each part consists of a textbook, an exercise book with complete solutions and 4-6 audio cassette tapes with recorded teacher comments on the exercises. Furthermore, to the third part of the course there is a computer program for accounting. This study guide, containing a glossary (in Russian and English), is also part of the course material.

# OVERVIEW OF THE THREE PARTS OF THE COURSE

## *Part 1* **Financial Accounting**

by Dag Smith and Rune Lönnqvist

The basic concepts in management accounting and the company's situation in terms of income, balance and liquidity.

### **Income and balance statements**

- the income concept
- the relationship between income and balance statements
- the valuation of assets and its impact on income
- shareholders equity

### **Accounting**

- double entry bookkeeping
- annual accounts

### **Statements of changes in financial position**

### **Financial ratios**

### **Course material:**

- Textbook (102 pp.)
- Twenty-seven exercises with solutions
- Four cassette tapes with approx. 5.5 hours of comments on the exercises.

## *Part 2* **Product Costing and Capital Budgeting**

by Rune Lönnqvist, Ulf E. Olsson and Bengt Öström

Economic models for the calculation of products and investments to support decision-making in business activities.

### **Profit planning**

- cost-volume-profit charts
- variable and fixed costs
- differential and common costs
- opportunity costs

### **Calculation according to the absorption costing concept**

- direct and indirect production costs
- average cost calculation
- calculation with overhead allocations

- activity-based costing

#### **Calculation according to the variable costing concept**

- contribution margin, contribution margin ratio
- calculation with relevant costs in situations with idle capacity or bottleneck problems

#### **Product pricing**

- target-return pricing
- influence from competitors and customers on pricing
- price elasticity of demand
- prices and inflation

#### **Capital budgeting**

- evaluation of capital expenditures
- different methods of evaluation, e.g. the present value method and the payback method
- capital budgeting and inflation

#### **Course material:**

- textbook (163 pp.)
- fifty-two exercises with solutions
- six cassette tapes with approx. 6.5 hours of comments on the exercises.

### ***Part 3* Accounting for Cost Flows**

by Rune Lönnqvist

Accounting for cost flows and feedback information to support the evaluation of business activities.

#### **Accounts and codes - a new accounting technique**

#### **The need for information and the structure of the accounting system**

#### **Responsibility accounting**

- direct and indirect departmental costs
- cost allocation between departments
- cost allocation by transfer prices

#### **Product cost accounting systems**

- product-costing systems in trading companies
- product-costing systems in service companies
- product-costing systems in manufacturing companies - a basic model
- job-order costing
- process costing
- standard-costing

#### **Accounting for cost of capital**

- cost of capital in accounting
- calculation of cost of capital

**Accounting for price-level changes**

- measuring income
- depreciation under inflation
- replacement cost depreciation and cost of capital

**Course material:**

- textbook (120 pp.)
- twenty-nine exercises with solutions
- five cassette tapes with approx. 6.0 hours of comments on the exercises.
- a computer program for accounting.

# READING INSTRUCTIONS

## Part 1 Financial Accounting

### **The concept of income**

Of all commonly used economic concepts the concept of *profit* is outstanding. This special position depends on the fact that the company must show positive profits in order to survive. During shorter periods a company might manage despite negative profits, but in the longer term the company will be squeezed out from the capital markets if it cannot show positive profits. Neither banks nor owners will want to invest in a company showing negative profits.

All workers in a company need a deeper understanding of the concept of income. This is especially important for managers and other decision-makers. The purpose of this course material is to provide a broad and comprehensive economic knowledge for managers and others who read yearly reports and who design and use various economic reports themselves.

1. Study Chapter 1 in order to get an overview of the contents of the textbook. Then read Chapters 2 and 3.

In Chapter 2 the meaning of the concept of income is defined and explained. The definition takes the company's relation to its owners as a point of departure and shows that the profit is equal to the dividends to the owners plus the change in the owners wealth in the company.

### **The relation between income and balance statements**

Chapter 3 illustrates the differences between payments and *revenue and cost*. Payments designate changes in liquid assets which are *one* type of the company's assets, while revenue and cost designate changes in the company's *total* assets, i.e. changes in the difference between the company's total assets and liabilities.

Revenues are defined as an increase in the difference between assets and liabilities, that is, an increase of the company's net assets. Costs are defined as a decrease of the difference between the company's assets and liabilities, that is, a decrease of the company's net assets. Since income is equal to the change of the owners' wealth in the company – the net assets – income can also be defined as revenues minus costs.

2. Listen to lecture 1, where comments are given on exercises no. 1 and 4.
3. Solve exercises no. 2, 5, 8 and 9 on your own and check your answers.
4. Repeat if necessary by solving exercises no. 3, 6 and 7.

### **Different methods for valuation of assets**

How assets should be valued is one of the most discussed issues in accounting. The problem is important since the valuation of assets also decides the company's income for the period. A short summary of alternative evaluation methods is given in the book (p. 18 ff.). In legislation and practice it has been decided that the valuation of assets should be based on the principle of purchase value and the principle of conservatism, that is, not to account for any increase of value until it has been confirmed through a sale, but acknowledge a decrease of value as soon as it has occurred.

5. Listen to lecture 1, where comments are given on exercise no. 13
6. Solve exercise no. 14 on your own.

### **Income and balance statements**

An income statement is a systematic report of the company's revenues and costs, and the balance statement is a report of the company's assets and debts. Various countries have different practices when it comes to the order of the posting and what subtotals should be calculated. In this course we present a model that is common in western companies.

7. Read sections 4.1 and 4.2.
8. Listen to lecture 1, where comments are given on exercise no. 11.
9. Solve exercise no. 10 on your own.



## **Shareholders' equity**

The *shareholders' equity* is a concept that is often misinterpreted. Concepts like capital stock, retained earnings etc. make you think of resources that exist somewhere in the company. Surely, the owners' equity is equal in sum to assets minus debts and therefore measures the owners' wealth in the company. The misinterpretation that is sometimes made is that one and the same wealth is accounted for twice. It happens that people see the wealth in the company assets and in addition believe that there is a wealth in the owners' equity which is wrong. The owners' equity is simply the mirror image of the specific assets and debts that exist in the company.

Extensive explanations are given in the textbook to the fact that owners' equity should be included in the balance statement and the reasons for making a new division of the difference between the company's assets and debts through the owners' equity are stressed. As already mentioned, in a stock company the difference between assets and debts shows the size of the owners' wealth in the company. The owners' equity, on the other hand, shows a division of the same amount according to whether or not the owners might take out parts of the company assets as dividends.

10. Read section 4.3.
11. Listen to lecture 2, where comments are given on exercises no. 16 and 17.
12. Solve exercise no. 15 on your own.

## **Basic principles for double entry bookkeeping and balancing of books**

The section on bookkeeping on accounts is focused on the principles for double entry bookkeeping and shows how business transactions can be accounted for in a system of accounts for assets, debts, revenues and costs. The textbook does *not* deal with practical bookkeeping issues such as setting up of a debtors ledger, the detailed design of charts of accounts, formal rules for keeping books or the design of computerised accounting programs. The purpose is not to train bookkeeping personnel, but rather to give managers and other personnel an understanding of accountancy on a higher and more principle-related level. In order to facilitate the overview the bookkeeping is done on so-called T-accounts. In real-world companies more elaborated techniques is required.

As an increasing number of companies are using computers for their accounting closures of the books through the so-called *scanning method* have become more common. This means that no entries are done on the accounts at closure of the books. Instead, the balance found on an account at the end of the period is entered into the balance or income statements.

13. Read Chapter 5.
14. Listen to lecture 3, where comments are given on exercise no. 21, but skip the financial analysis.
15. Solve exercises no. 22 and 23 on your own, but skip the financial analysis.
16. Repeat if necessary by solving exercises no. 24, 25 and 26, but skip the financial analysis.

### **Statement of changes in financial position**

In addition to income and balance statements the annual reports from large companies also often contain a *funds statement* which basically describes the company's payments during the past year. Funds statements might be organised in a variety of ways. In the textbook a model has been chosen that closely corresponds to international recommendations with the following basic structure:

- +/- The net payments which should have been created by the business activity if the working capital had been constant. (Sales minus wages, materials, etc.)
- +/- Changed payment flows caused by changes in the working capital. (Increased receivables decreases the inflow from customers, etc.)
- Payments for investments during the period. (Payments for purchased machines, etc.)
- + Payments from the capital market. (New loans, new funds from the owners, instalments, etc.)
- = Changes in the company's liquid assets.

Funds statements provide important information for banks and other financial institutes about the company's ability to avoid insolvency threats and they might also give a picture of the company's strength. A company in which the activity generates a positive cash flow covering the investment needs is strong and

independent in its relation to banks, while a company where the activity creates a negative cash flow is totally dependent upon decisions on the capital market.

The management of a company often finds it necessary to obtain a picture of the economic situation of its customers, its suppliers and competitors and to do this it then needs to be able to read and interpret a funds statement.

17. Read section 6.1.
18. Listen to lecture 2, where comments are given on exercise no. 20.
19. Listen to lecture 4, where comments are given on exercise no. 24.
20. Solve exercises no. 18 and 19 on your own.
21. Repeat if necessary by making the funds statements in exercises no. 21-26.

### **Financial ratios**

By compiling economic information about the company in the form of financial ratios an assessment of the company's economic situation is facilitated and comparisons with previous activity or other companies are made possible. The textbook discusses three types of key figures:

*Return on equity* shows what profitability the owners are getting on their wealth in the company.

*Return on capital employed* which in principle shows what rate of return the company has created on its borrowed capital and on the owners' equity.

*Equity ratio* shows the company's ability to survive for a number of years when working at a loss.

In order to be able to interpret such key figures an understanding is required of how the calculations are made. In addition to the study of the textbook it is advisable to work through the exercises in accordance with the following order:

22. Read section 6.2.
23. Listen to the end of lecture 4, where comments are given on exercise no. 27, the task relating to the industrial company Atlas Copco.
24. Solve one of the tasks in exercise no. 27 on your own.
25. Repeat if necessary by solving the rest of the tasks in exercise no. 27.

## Part 2 Product Costing and Capital Budgeting

In part 1 of the course – *Financial Accounting* – we studied the economy of the whole company. In this part – *Product Costing and Capital Budgeting* – we change perspective and concentrate on economic issues relating to the company's various products as well as the economic consequences of single investment projects. The purpose of costing is to establish support for decisions, but it is important to state at the outset that costing is only a part of the decision making. A number of other factors which are difficult to capture in economic terms might have strong influences in the actual decision situation. Working environment considerations, possibilities for a more advanced collaboration with other companies and other more long term, strategic factors are examples of factors influencing decisions.

There are often specially trained personnel in companies who draw up the calculations that the company management uses as decision support. The purpose of the textbook and the exercises is to train those persons who need to establish the prerequisites for calculations and who need to be able to interpret calculations rather than to train calculation specialists. In order to correctly realise weaknesses and deficiencies in calculations knowledge is needed about how calculations are made and upon what conditions ordinary calculation models are based.

1. Read Chapter 1 in order to get an overview of the contents of the textbook.

### **Profit analysis**

Decisions entailing volume changes in the company affect revenues as well as costs and thereby the company's profits. Revenues are here supposed to vary proportionally with volume. A bit further on in the book (in Chapter 6) more detailed relations between sales prices and volumes are discussed. Costs are grouped in fixed and variable costs depending on whether or not they are affected by volume changes.

Under certain simplifying assumptions the following basic model might be used to analyse the effect of volume on profits:

$$\text{Income} = (\text{sales price} - \text{variable unit cost}) \cdot \text{volume} - \text{fixed cost}$$

One application of income analysis is to calculate the volume at which the company's profit is zero in order to establish a measure of how close to this point

the company can operate, that is, to calculate the company's safety margin. It is important that all managers in the company have a clear comprehension of the possible consequences of a sales reduction so that they are able to rapidly take counter-measures.

Before deciding about an advertising campaign comparisons should be made between the costs of the campaign and the income rise that the expected volume increase might produce. This is another application of income analysis.

2. Read Chapter 2.

#### **Traditional profit analysis**

3. Listen to part 1 of lecture 1, where comments are given on exercises no. 1 and 3.
4. Solve exercises no. 2 and 4 on your own.
5. Repeat if necessary by solving exercise no. 6.

#### **Profit and liquidity analysis**

6. Listen to part 2 of lecture 1, where comments are given on exercise no. 5.

#### **Profit analysis with several products**

7. Listen to part 2 of lecture 1, where comments are given on exercises no. 8 and 10.
8. Solve exercise no. 9 on your own.
9. Repeat if necessary by solving exercises no. 7 and 11.

### **A theoretical model for costing**

10. Read through Chapter 3 and repeat the chapter after you have studied both Chapter 4 and Chapter 5.

With the help of examples Chapter 3 illustrates some important principles for calculations, on the one hand, the principle that "what is done is done" and thus

that only future effects should be included and, on the other hand, the principle that current capacity should be assessed according to its opportunity cost, that is, according to what revenues an alternative use of the factory capacity would have produced. The example leads up to the theoretically correct model:

Changed revenues - changed costs - opportunity costs

Unfortunately, opportunity costs are difficult (and often expensive) to measure. In practice, therefore, calculation models have to be simplified. In the short term there are no significant opportunities to find an alternative way of using or adapting capacities. Then it might be appropriate in absorption costing to approximate the opportunity cost by the distributed cost of purchased capacity.

### **Absorption costing**

#### 11. Read Chapter 4 (except Appendix)

Full costing is frequently used in companies for a number of different decisions. It is important that salesmen, purchasers and management have knowledge about the conditions and limitations of calculations. Full costing is sometimes used as an argument in price negotiations. A profound insight into the weaknesses in your opponents calculations, for example, might often be essential to achieve a good negotiations result.

In full costing all costs are allocated between the company's products. Certain costs, the direct costs, can be measured per product while other costs, the indirect costs, cannot be measured per product, but must be allocated in the same proportion by a suitably chosen *index for distributing overheads*.

The basic criterion for the choice of index for distributing overheads is that the index should reflect a cause-effect relation between products and costs. Products that require much machine time for their production should, for instance, carry more of the costs for machine capacity, repair and maintenance etc. In order to more easily find good cause-effect relations the indirect costs are often ordered according to functions such as purchase, production etc. or according to the company's organisational structure. For each and every one of these groups a cost allocation is then made on to the products.

### **Costing for companies with one product**

12. Listen to lecture 2, where comments are given on exercise no. 12.
13. Solve exercise no. 13 on your own.
14. Repeat if necessary by solving exercise no. 15 and read through exercise no. 14.

### **Costing for companies with several products**

15. Listen to lecture 2, where comments are given on exercises no. 16 and 17.
16. Solve exercise no. 18 on your own.
17. Repeat if necessary by solving exercises no. 19 and 20.

### **Costing in manufacturing companies**

18. Read the Appendix to Chapter 4.
19. Listen to lecture 2, where comments are given on exercise no. 25.
20. Solve exercises no. 22 and 26 on your own.
21. Repeat if necessary by solving exercises no. 23, 24, 27 and 28.

### **The variable costing concept**

Many good businesses have been lost because management did not understand when the variable costing concept would give a better picture of the economic reality than would full costing. In situations when free capacity cannot be used in any alternative way only those costs that are affected by the decision should be included. The calculations are often seen as paradoxical, selling a good at a price that is lower than its full cost might lead to a higher profit. The explanation to this paradox lies in the fact that parts of the full cost have to be paid whether or not the business is really done.



The chapter describes two situations where variable costing gives a more correct picture of reality than does full costing:

- Situations where parts of the company's capacity are idle and cannot be used in other profitable ways.
- Situations in which there has occurred "bottlenecks" in the activity.

In the latter situation variable costing might be used in order to find the optimal use of the limited capacity. This is a model which, i.a., might be used for production planning.

22. Read Chapter 5.

#### **Variable costing in situations with free capacity**

23. Listen to lecture 3, where comments are given on exercises no. 29 and 30.

24. Solve exercise no. 31 on your own.

#### **Variable costing in situations with "bottlenecks".**

25. Listen to lecture 3, where comments are given on exercise no. 32.

26. Solve exercise no. 34 on your own.

27. Repeat if necessary by solving exercises no. 33, 35 and 36.

Sections 5.4 and exercise no. 37 contain a special variant that might be regarded as part of an advanced course.

### **Product pricing**

28. Read Chapter 6.

In the two previous chapters costs have been at the centre of attention, but revenues, that is, sales prices and volumes, are equally important for the company's profitability. A calculation of the costs for producing and selling a product is an important point of departure for pricing, but every company

operating in a market economy must also consider the reactions of its customers and competitors.

A number of factors influence how customers and competitors react on price changes:

- Type of product, for example, standard products or customised products, etc.
- The market type, the number of sellers and buyers as well as the size of their demand and supply.
- The development of demand, for example, a new, fast growing product or a mature one, the business cycle situation, etc.

In Chapter 6, furthermore, a number of pricing strategies are discussed which are common in market driven companies, such as *penetration strategy*, *price skimming strategy*, *price discrimination*. Pricing under inflation is discussed as well.

In an Appendix to Chapter 6 the so-called *DuPont analysis* is described, in which different methods for improving the company's profitability are illustrated. It is easy to realise that profits will improve if prices are raised or if costs are reduced, but, in addition to this, every decision-maker in a leading positions needs a clear picture of the relation between capital employed and profitability.

### **Capital budgeting**

Investments are projects that give economic consequences during a number of years in the future. In order to be able to evaluate such projects, methods are needed that take "the time value of money" into account, that is, the fact that payments in a near future have a higher value than payments further away in time.

The importance of capital budgeting varies. Sometimes future consequences are so difficult to predict that a mathematical solution becomes meaningless. In other cases investments are necessary, that is, the company has no other alternatives if it wants to survive in its branch. Examples of investment decisions for which calculations have a great significance are the choice between buying or renting equipment, the choice between different alternative solutions of a problem, cost-saving investments, etc.

Mathematical experts and computers should handle the sometimes advanced mathematical calculations required. In the textbook we focus on the principles on which these calculations are based and the conditions that have to be met in order to make the calculation valid. As a decision-maker it is important to realise the

weaknesses of the calculation as well as its benefits. Furthermore, it is the task of the management to establish the discount rate to be used in the assessment of investment projects.

29. Read Chapter 7.
30. Use exercises no. 38-40 to repeat the interest mathematics described in Chapter 7.

### **Methods for capital budgeting**

The chapter deals with the pros and cons of the following four methods for investment calculations:

*The net present value method*, where all payments are discounted to their present value and compared.

*The pay-back method* where the project's payments are compared from a liquidity perspective.

*The annuity method* where the project's payments are transformed into equally sized yearly payments which are then compared.

*The internal rate of return* where the project's percentage yield is calculated and compared to the established discount rate.

31. Read Chapter 8.
  32. Listen to part 1 and the beginning of part 2 of lecture 3, where comments are given on exercises no. 41 and 42.
  33. Solve exercise no. 44 on your own.
  34. Repeat if necessary by solving exercises no. 43 and 45.
  35. Listen to the end of part 2, lecture 4, where comments are given on exercise no. 46.
  36. Solve exercise no. 48 on your own.
  37. Repeat if necessary by solving exercises no. 47, 49 and 50.
- Skip exercises no. 51 and 52 unless you have access to a computer.

## Part 3     Accounting for Cost Flows

The title *Accounting for Cost Flows* should not be interpreted as if the textbook contains a lot of accounting techniques. Surely there are sections that deal with technical aspects, but the main part of the technical material is radically simplified in order to enhance principles and theories. The main part of the book does not, however, contain any accounting techniques but is devoted to illustrating different ways of controlling an organisation by the help of economic information and economic measures. It contains a discussion as to how cost redistributions between various departments and internal prices might affect the activity of the company, how various ways of including capital costs in reports might affect the capital used within the company and how the assessment of costs at current prices might help the company to maintain its capacity in times of inflation. The book also contains a few sections which are valuable for the company accountant and other bookkeeping personnel, but most of the text is intended for purchasers, salesmen, production managers and all senior managers in the company.

1. Read Chapter 1 in order to get an overview of the contents of the book.

### **Accounting with codes**

Chapter 2 shows in principle how you might use codes in order to store information about what happens in the company. In general, codes mean nothing new compared to accounts. The benefits are rather psychological since coding allows the information to be structured in way that is easier to handle and, thereby, the risk for misdesignations is diminished.

2. Read Chapter 2.
3. Listen to lecture 1, where comments are given on exercise no. 2.
4. Repeat if necessary by solving exercise no. 1.

## **From reports to accounts plans**

Chapter 3 describes how an information system for the company might be designed. It is the task of the company management to design a suitable system that offers relevant information to various officials. Simultaneously, information management is an important means of control for the company management. By charging the sales manager with the costs for capital employed in the stock of finished goods management could balance the demands from the sales department for short delivery time to the customers. Such demands on short delivery times usually will lead to large stocks of finished goods.

The basic idea of the chapter is to show how the company management can start its work with the formulation of a number of specific economic reports which are subsequently analysed and thus provide the foundations for the design of the company accounting system.

5. Read Chapter 3.
6. Listen to lecture 1, where comments are given on exercise no. 4
7. Repeat if necessary by solving exercise no. 3.

## **Cost centres and transfer pricing**

How costs should be allocated between the various departments of the company is an issue that often causes intensive discussions. It is important that the company management is engaged in these issues and is able to design a system that works for the benefit of the entire company. An example will show what effects a well-designed cost distribution can achieve. Let us imagine a company with one computer department that is providing services for other departments. One possible model for cost distribution would be to calculate an hourly price based on the budget of the computer department and that other departments are charged with this hourly price in accordance with actual use of the service. Thereby the consuming departments will get signals about the costs caused by the computer department and they might assess the relative benefits of the computers. Via the distributed costs the computer department will get signals about what volumes various departments will use. Simultaneously, there will be a pressure on the department to hold down its actual costs, since only budgeted costs are being distributed. Chapter 4 gives an example on other possible solutions and discusses pros and cons with internal pricing systems.

8. Read Chapter 4.
9. Listen to lecture 1, where comments are given on exercise no. 5.
10. Listen to lecture 2, where comments are given on exercises no. 6, 7 and 8.
11. Solve exercises no. 9 and 10 on your own.
12. Repeat if necessary by solving exercise no. 11.

### **Product costing in trading and service companies**

Obviously, the activity of the company is decisive for what kind of information system that is most suitable to use. In the introductory section of Chapter 5 an example is given on problems which are typical for non-manufacturing companies. Here it is shown how the information system might be designed in order to provide a profitability measure for the company's various products.

13. Read sections 5.1 and 5.2.
14. Solve exercises no. 12 and 13 on your own.

### **Product costing in manufacturing companies**

In a manufacturing enterprise there is a gradual transformation of resources going on from raw materials to finished products in which various resources, such as labour, energy, machine time, are used as inputs. The detailed process is suitably handled by separate information systems but the accounting system should also be adapted to the physical resource flow in order to give relevant profitability measures for different parts of the company's activities.

### **Actual costing**

Here the basic model for accounting in manufacturing companies is presented. Technically speaking, accounting might be designed in many different ways. We emphasise the principal design in terms of assets, liabilities and costs. Do not

read sections 5.4 and 5.5 as technical advice, but try to understand the design structure of the model.

15. Read sections 5.3 and 5.4.
16. Listen to part 1 of lecture 3, where comments are given on exercise no. 14.
17. Repeat if necessary by solving exercises no. 15 and 16.

### **Standard costing**

A recurring critique against information systems in companies is that reports tend to come too late. The effects of a report dealing with events that are two months old are significantly weaker than reports from just a week ago. Unfortunately, the demand for fast reporting is in conflict with the demands for exact and correct data in the reports. A compromise solution is to speed up accounting and reporting by partly using budget prices and overhead rates. This sometimes means that reports are based on the indirect costs according to the budget rather than waiting for actual payments of all invoices relating to indirect costs. That way it is possible to report the manufacturing costs as soon as the order is effectuated.

18. Read section 5.5.
19. Listen to part 1 and the start of part 2 of lecture 3, where comments are given on exercise no. 17.
20. Repeat if necessary by solving exercises no. 18, 19 and 20.

### **Process costing**

The accounting models described above should be used in situations where it is possible to identify specific production orders or customer orders. For companies engaged in process production other accounting models are required. Examples of such companies are breweries, refineries, etc.

21. Read sections 5.6 and 5.7.
22. Listen to part 2 of lecture 3, where comments are given on exercises no. 23. and 24.
23. Repeat if necessary by solving exercise no. 25.

## **Cost of capital**

The financial problems of the firm might be summarised through the following questions:

- How much capital does the company need?
- What should be the relationship between owners' equity and borrowed capital?
- What type of loans and stock issues should the company use?

Questions about capital inputs by the owners are often handled by the top management, which, together with the company board, decides about prices of stock issues and other conditions. Thus, the balance between owners' equity and borrowed capital is a question for the top management.

The type of loans, securities, interest conditions etc., are issues that in large companies are dealt with by special financial departments and in smaller companies often are handled by the managing director or financial manager.

The responsibility for the amount of capital needed by the company ultimately rests with the company management, but the actual capital employment arises in the various departments of the company. One of the means of control available to the company management for influencing the various heads of departments is to charge them with a cost for the capital employed in their respective departments. In Chapter 6 various possible effects of different ways of calculating capital costs are discussed.

24. Read Chapter 6.
25. Listen to lecture 4, where comments are given on exercise no. 26.
26. Repeat if necessary by solving exercise no. 27.



## **Inflation adjusted costing**

Inflation means increasing prices, which affects the company in a number of ways. To give a comprehensive picture of the effects of inflation is beyond the scope of this book. Here we only discuss a partial solution where depreciation of fixed assets are adjusted so that they cover the company's costs for acquiring similar equipment in the future.

27. Read Chapter 7.
28. Listen to lecture 4, where comments are given on exercise no. 28.
29. Repeat if necessary by solving exercise no. 29.

## **Diabas – a computer program for accounting**

The computer program *Diabas* was made to meet the special requirements put on an accounting program to be used for educational purposes. This means that the program is designed to make use of the computer as an active assistance in the study of economics in contrast to other common accounting programs which no doubt will give valuable experiences of how to use the computer, but rarely will add any knowledge of economics. The fact that income and balance accounting in *Diabas* is performed after each transaction might be mentioned as an example. To do the accounting with a continuous reminder of its effects may contribute to a more general understanding of economic relationships. Another illustration is that when a conventional computer program offers e.g. income accounting it is indeed possible to produce it rapidly, but that does not contribute to the development of the skill to compile such reports. In the *Diabas* menu you find, of course, standard reports, but there is also a report generator. This device allows the creation of reports based on your present information needs and leaves the mechanical calculations to be handled by the computer.

The program will show anyone using economic information in their work how it is possible to create customized accounts and reports in order to rapidly be able to direct the activities of the enterprise towards its planned goals. Decision makers with a need for knowledge of internal accounting are nowadays working on all levels and in all departments of the enterprise. The present computer program contributes to a better understanding of the fundamentals of creating economic accounting systems.

Access to an IBM compatible computer running MS DOS or MS Windows is the only requirement for using the program.

30. Read Chapter 1-2 in the manual.
31. Solve the exercises in Chapter 3.
32. Solve the exercises in Chapter 4:  
exercise no. 1 (continuation of exercise no. 11)  
exercise no. 2 (continuation of exercise no. 14)  
exercise no. 3 (continuation of exercise no. 20).

# Lectures and Exercises on the Audio Cassette Tapes

## **Part 1 Financial Accounting**

Lecture 1 Exercises no. 1, 4, 11 and 13

Lecture 2 Exercises no. 16, 17 and 20

Lecture 3 Exercise no. 21

Lecture 4 Exercises no. 24 and 27

## **Part 2 Product and Capital Budgeting**

Lecture 1 Part 1 Exercises no. 1 and 3  
Part 2 Exercises no. 5, 8 and 10

Lecture 2 Exercises no. 12, 16, 17 and 25

Lecture 3 Exercises no. 29, 30 and 32

Lecture 4 Part 1 Exercise no. 41  
Part 2 Exercise no. 41 (cont.), 42 and 46

## **Part 3 Accounting for Cost Flows**

Lecture 1 Exercises no. 2, 4 and 5

Lecture 2 Exercises no. 6, 7 and 8

Lecture 3 Part 1 Exercises no. 14 and 17  
Part 2 Exercises no. 17 (cont.), 23 and 24

Lecture 4 Exercises no. 26 and 28

## **II. EXPLANATION OF CONCEPTS**

# English - Russian Dictionary

(The Russian version of the Study Guide also contains short explanations of the concepts listed.)

English	Russian
Absorption costing, full costing,	Калькуляция себестоимости
Account	Счёт
Accounting	Учёт
Accounting equation	Балансовое уравнение
Accounting transaction	Бухгалтерская запись, проводка
Accounting with codes	Учёт посредством кодирования
Accounts payable, trade creditors	Задолженность поставщикам, кредиторы
Accounts receivable, trade debtors	Задолженность покупателей, дебиторы
Activity Based Costing	ABC-калькуляция
Allocation base	Основа распределения (база надбавки)
Allocation rate	Ставка накладных расходов
Amortization	Погашение ссуды
Annuity method	Метод аннуитета
Asset turnover ratio	Скорость оборота капитала
Assets side	Сторона активов
Average cost calculation	Калькуляция удельных издержек
Balance	Сальдо
Balance sheet	Баланс, балансовый отчёт
Bank loan	Банковский заём
Bottleneck	„Узкое место“
Break-even point	Точка нулевой прибыли
Business transaction	Хозяйственная операция
Calculation	Калькуляция
Calculation with overhead rates	Калькуляция надбавок
Capital intensive technology	Капиталоёмкая технология
Capital investment calculation	Калькуляция капиталовложений
Capital rationalization	Рационализация капитала
Capital tied up	Связанность капитала
Cartel	Картель
Cash acquisition, - sales	Закупка-, продажа при наличной оплате
Cash flow after investments	Движение денежных средств после капиталовложений
Cash flow before investments	Движение денежных средств до капиталовложений
Cash flow from operating activities	Собственные источники финансирования
Changes in liquid assets	Движение ликвидных средств
Closing entry	Операция закрытия счетов
Closure of the books	Закрытие счетов
Code/account plan	План счетов/кодов
Common cost	Общие издержки
Contribution margin	Покрытие затрат
Contribution margin calculation	Калькуляция покрытия
Contribution margin ratio	Степень покрытия
Cost centre	Центр затрат
Cost chart	График затрат
Cost object	Носитель затрат
Cost of capacity	Затраты на производственные мощности

Cost of capital	Затраты на капитал
Cost plus pricing, markup pricing	Ценовая надбавка на закупочную стоимость
Costing on actual outcome	Последующая калькуляция
Costs for goods sold	Затраты на проданные товары
Costs, expenses	Расходы, затраты, издержки
Cost-volume-profit chart	График результата
Credit	Кредит
Credit acquisition, - sales	Закупка-, продажа в кредит
Current assets	Оборотные средства
Current liabilities	Краткосрочные долговые обязательства
Debit	Дебет
Debt/Equity ratio	Коэффициент задолженности
Degree of investments financed by cash flow from operating activities	Степень самофинансирования
Depreciation	Амортизационные отчисления начисление износа
Differential cash inflow	Чистые поступления
Differential cost	Дифференциальные издержки
Differential revenue	Дифференциальные доходы
Direct cost	Прямые издержки
Direct department costs	Прямые издержки отделов
Discount rate	Учётный процент (ставка дисконта)
Dividend	Изъятие средств владельцами, дивиденд
Double entry accounting	Учёт на счетах
Double entry bookkeeping	Двойная запись учёта
Du Pont chart	Схема дю Понта
Economic life	Экономический срок службы
Economies of scale	Преимущества крупномасштабного производства („эффект масштаба“)
Economies of scope	Эффект охвата (преимущества охвата)
Equity capital ratio	Устойчивость
Estimated costs	Предварительная калькуляция
Excess demand	Избыточный спрос
Excess supply	Избыточное предложение
Financial accounting	Внешняя форма учёта (финансовый учёт)
Financial analysis	Анализ счетов
Financial position	Экономическое положение предприятия
Financing	Заёмные средства
Fixed assets	Основные средства
Fixed cost	Постоянные затраты
Flow value	Параметры движения
Forecast method	Прогнозирование
General meeting	Общее собрание
Gross income (profit/loss)	Валовой результат (прибылью/убыток)
Idle capacity	Свободные мощности
Income (profit/loss)	Результат (прибыль/убыток)
Income budget	Смета результата
Income statement	Расчёт результата
Income, profit/loss	Годовая прибыль/убыток
Indirect cost	Косвенные издержки
Indirect department costs	Косвенные издержки отделов
Inflation	Инфляция
Initial investment	Основное капиталовложение
Interest expenses	Процентные расходы

Interest income	Процентные доходы
Internal financing	Самофинансирование
Internal rate of return method	Метод с применением внутренней процентной ставки
Inventory at acquisition price	Оценка запаса по закупочной стоимости
Inventory at sales (market) price	Оценка запаса по продажной стоимости
Investment	Капиталовложение (инвестиция)
Investment calculation in nominal terms	Номинальная калькуляция капиталовложений
Investment calculation in real terms	Реальная калькуляция капиталовложений
Investment in financial assets	Финансовые инвестиции
Investment in intangible assets	Нематериальные вложения
Invoice	Счёт-фактура
Job-order costing	Учёт при позаказном производстве
Just-in-time production	Производство по принципу „своевременности“
Key ratio, financial ratio	Ключевые показатели
Legal reserve, restricted reserve	Резервный фонд
Leverage	Эффект рычага
Liabilities side	Сторона пассивов
Limited company, incorporated company	Акционерное общество
Liquid funds	Ликвидные средства
Long-term debts	Долгосрочные обязательства
Long-term fixed cost	Затраты бездействия
Make or buy decision	Решение о производстве или закупке
Management accounting and Financial accounting	Экономическое управление
Management accounting/cost accounting	Внутренняя форма учёта (управленческий учёт)
Manufacturing company	Производственное предприятие
Margin of safety	Кромка безопасности
Matching principle	Принцип параллельного взноса
Monopoly	Монополия
Net assets	Собственные средства предприятия
Net present value (NEP)	Современная стоимость
Net present value index	Доля современной стоимости
Net present value method (NPV-method)	Метод приведения к современной стоимости
Object for calculation	Объект калькуляции
Offer, tender	Предложение (деловое)
Oligopoly	Олигополия
Operating income after depreciation	Результат деятельности после начисления износа
Operating income before depreciation	Результат деятельности до начисления износа
Operating volume	Объём хозяйственной деятельности
Operation	Хозяйственная деятельность
Opportunity cost	Альтернативные издержки
Overhead costs	Накладные расходы
Owners' equity	Имущество владельцев в предприятии
Paid-in capital/new issue (of stock)	Вложение средств владельцами, новая эмиссия
Partnership	Товарищество
Payback method	Метод окупаемости
Perfect competition	Свободная конкуренция
Price adjusted depreciation	Калькуляционная амортизация

Price discrimination	Дискриминация цен
Price elasticity of demand	Эластичность цены
Price leadership	Лидерство в ценах
Price penetration strategy	Стратегия проникновения
Price skimming strategy	Стратегия снятия сливок
Process costing	Учёт при непрерывном производстве
Product	Продукт
Product- and period cost	Затраты на продукцию и расходы периода
Product costing	Калькуляция продукции
Product differentiation	Индивидуализация продукции
Profit centre	Центр результата
Profit margin	Коэффициент прибыльности
Rate of return	Рентабельность (выгодность, доходность, прибыльность)
Real return	Реальный доход
Realization convention	Принцип реализации
Replacement price/cost	Действующая цена
Replacement price/cost	Стоимость (цена) приобретения, закупочная цена
Required profitability	Востребованная владельцами прибыль
Residual value	Остаточная стоимость
Responsibility accounting	Учёт по подразделениям
Responsibility accounting	Учёт с позиции ответственности
Restricted equity	Связанный собственный капитал
Retained earnings	Нераспределённая прибыль
Return on capital employed	Рентабельность применяемого капитала
Return on equity	Рентабельность собственного капитала
Revenue	Доход
Sales revenue	Выручка от продажи
Service company	Предприятие сферы услуг
Share capital	Акционерный капитал
Standard costing	Учёт с применением нормативных издержек
Standard price (cost)	Нормативная цена
Statement of change in financial position	Финансовый анализ
Step contribution reporting	Поэтапная калькуляция
Stepped cost	Пороговые затраты
Stepped cost	Условно-постоянные затраты
Stock value	Параметры положения
Stock, inventories	Запас товаров
Stockholders' equity	Собственный капитал
Strategic investment	Стратегические инвестиции
Substitute	Субститут (заменитель)
Theoretical calculation model	Теоретическая модель калькуляции
Trading company	Торговое предприятие
Transaction plan	План учётных операций
Transfer price	Внутренние цены
Unrestricted equity	Свободный собственный капитал
Value added	Стоимость переработки
Value added ratio	Доля собственной переработки
Variable cost	Переменные затраты
Working capital	Оборотный капитал