



# Introduction to Accounting

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# **Introduction to Accounting**

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## Introduction

Dear Student,

First of all, congratulations on taking the Introduction to accounting course. In this course you will acquire a basic knowledge in the area of accounting, which is usually called as “the language of business”. Once you have successfully finished your semester work, you will have a good command of all the basic expressions of accounting, you will understand the most important financial statements prepared by companies, as well as the book-keeping background that is inevitable for providing reliable and authentic information about the performance of a company in a given financial year.

The learning material is divided into ten chapters. In the first chapter, you will be introduced into the area of accounting by defining some basic expressions and principles of this profession. Then, in chapters 2-5, the most important elements of annual reports (the financial statements) are discussed in details, where you will understand what these statements contain and how they should be prepared. This is followed by the discussion of the book-keeping system in chapters 6-9, which will give you the opportunity to see how different transactions are recorded in order to provide an information basis for preparing an annual report. Finally, chapter 10 summarizes the entire accounting cycle, which will help you to put the pieces (what you have learned in the first nine chapters) together and see the ‘big picture’.

At the end of each chapter, there are questions that help you check your knowledge. Also, in the chapters that contain definitions or other theoretical or methodological knowledge, you will find test questions. However, it is very important to emphasize that accounting is a practical area, which means that, beyond the theoretical basis, you should *concentrate on the practical application*. Therefore, in most of the chapters, you will find practical exercises that will help you see how the discussed methods are applied in practice.

The knowledge, methods and applications presented in this book are in compliance with the International Financial Reporting Standards (IFRS). However, I would like to note that this is an introductory course, therefore, we will only concentrate on the basics of accounting, avoiding complicated rules and methods stated in particular IFRS standards. (The latter may be subject to other courses during your future studies.)

Students tend to believe that accounting is a difficult subject, but one thing is for sure: completing this module is possible for everyone, and you may come through with the best grade. So be patient, motivated and never give up!

Good luck:

*The author*

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## **Chapter 1**

### **The definition and the basic principles of accounting**

The aim of this chapter is to introduce the reader into the basic expressions related to accounting, such as the definition of accounting, the main areas of accounting activities, the most important accounting principles, and the structure and content of annual reports.

## I. The definition and the main areas of accounting

**Accounting** is a set of activities the aim of which is to *provide objective information* for internal and external users about the economic entity's financial position, profits and cash-flows. There are several stakeholders who are interested in the financial performance of the company. They are the users of accounting information. The most important users are:

- *parties inside the organization (internal users)*: shareholders (owners), employees and managers of the company
- *parties outside the organization (external users)*: banks, creditors, prospective investors, authorities etc.

There are several different activities that an accountant should do during an accounting period (named as a *financial year* or *fiscal year*). These activities can be summarized as follows:

For an accountant, most of the time is spent on *book-keeping activities*. Book-keeping is a closed system of accounts in which all changes to the firm's balance sheet and income statement are recorded, based on accounting documents (invoices etc.). Based on the data recorded in the book-keeping system, accountants prepare the *annual report* of the organization. This activity is called *reporting*. The reason for making reports is that there is an obligation for the firms to provide information about their operations at least once a year in a specified form. For manufacturing companies, *cost accounting* is a vital area of accounting, as in order to reach a high level of efficiency, the records of cost should be kept carefully. Direct manufacturing cost or purchase cost *per unit* is the basis for determining the selling prices of the firm's products and services. After preparing the financial statements, an important accounting task is *analysis*: with the help of financial ratios and other methods, the figures presented in the financial statements can be used to draw further conclusions. The information contained by the annual report should be examined by an independent external expert called *auditor*. The report can be regarded genuine only if the auditor has approved its content. *Auditing* requires the highest qualification in this profession as it is attached with a strong responsibility. The last area of accounting is *releasing*, which means that the content of the annual report should be released to the public so that the accounting figures become available for any actors in the economy.

## II. Accounting principles

The accounting activities are performed with regard to several principles. These principles are the bases of recording book-keeping entries and of preparing the statements contained by the annual report. The major accounting principles are defined below.

The *money measurement concept* states that in financial accounting, a record is made only of information that can be expressed in money, which provides a common denominator by means of which different facts about a company can be added and subtracted.

According to the *entity concept*, accounts are kept for entities, as distinguished from the persons who are associated with the entities.

One of the most important principles is the *going concern concept*. This requires that, when recording book-keeping entries and preparing the financial statements, the company should be regarded as a going concern, meaning that it should be assumed that the entity will continue to operate for an indefinitely long period in the future. Without this assumption, it would be impossible to handle a bank loan with a 20-year term or a building with a 50-year depreciation period.

Based on the *cost concept*, an asset is ordinarily entered in the accounting records at the price paid to acquire it (called as the *historical cost*).

The *dual aspect concept* is the basis of the so-called double-entry accounting. According to this principle, the property of an entity (company) can be approached in two different ways: ASSETS express the objects possessed by the company, while EQUITIES express the financial background of assets. Equities can be Owners' (Shareholders') Equity and Liabilities. Based on the primal equation, assets always equal shareholders' equity and liabilities.

Accounting measures activities for a specified interval of time, called the accounting period (fiscal year, financial year). This is referred to as the *time period concept*. In most cases, the financial year corresponds to the calendar year (from 1 January until 31 December), but companies have the right to apply a different period, for example, from 1 July until 30 June. Furthermore, in some exceptional cases, the length of a financial year is shorter than 12 months, for instance in the case of beginning companies (from the day of establishing the company until 31 December), or in case of liquidation, merger etc., where the year starts on 1 January but ends on the day of the above mentioned transaction. Accounting regulations usually require to report once a year, but there are interim reports as well.

A very important principle of accounting is *conservatism*. This means that the recognition of revenues requires better evidence than the recognition of expenses. One should recognize revenues only if they are certain, while expenses should be recognized as soon

as they are reasonably possible. But what does this mean? Here is an example: if the company sells goods to a customer who does not acknowledge it and is not willing to pay then the sales revenue and the related receivable should not be presented in the reports. In an opposite situation, if the company buys something, the liability is always presented in its full amount. This has a consequence: the receivables are presented at the lowest possible, while liabilities are presented at the highest possible value.

The *realization concept* states that revenues are usually recognized in the period in which goods were delivered to customers or in which services were rendered, and the amount recognized as revenue is the amount that is reasonably certain to be realized.

According to the *matching concept*, when a given event affects both revenues and expenses, the effect on each should be recognized in the same accounting period. One has to focus on PROFIT, which is calculated as revenues minus expenses. To have a clear picture, expenses have to be presented in the same accounting period as revenues. It is also essential to make a distinction between the phrases *expense* and *expenditure*. Expense means an item that reduces the current year's profits, while expenditures mean cash outflows. The relationship between expenditures and expenses can be:

- Expenditures made this year are also expenses of this year. For example: the company purchased inventories that were already used in the production process.
- Expenditures made prior to this year become expenses during this year. For example: the company sold products that were produced prior to this year.
- Expenditures made this year will become expenses in future years. For example: the company produced finished products and they did not sell them.
- Expenses of this year that will be paid in a future year. For example: the phone bill of December that is only paid in January – the cash outflow occurred only in January, but the expense is connected to year ended with December and it must be presented as an expense of that year.

The *consistency concept* says that once an entity has decided on one method (i.e. valuation method), it should treat all events of the same character in the same method unless it has a sound reason to do otherwise. If an entity makes frequent changes in the manner of handling a given class of events in the accounting records, comparison of its accounting figures for one period with those of another period would be difficult.

Finally, the *materiality concept* requires that accounting should only record significant events that make an influence on the decisions of the users of information. For example: if the stock market price of the shares held by the company starts to fall then the asset value will only be decreased in the books if the difference between the market price and the book value is regarded significant.



## II. The role and content of annual reports

It is required that every economic entity should produce an annual report once a year, containing quantitative figures and also non-quantitative information about the company. The quantitative figures are presented in *financial statements*. The three most important financial statements are:

- (1) the *balance sheet*, which summarizes the company's financial position at the end of the financial year,
- (2) the *income statement*, which shows the performance (profit earned) of the company during the accounting period, and
- (3) the *cash flow statement*, which summarizes the cash inflows and outflows during the accounting period

Besides the financial statements, each annual report contains a part called as *notes*, which provides a lot of qualitative information about the company.

### II. 1. Balance Sheet

It shows the financial position of an accounting entity at a specified moment of time (usually 31 December of the current year). It is a status report rather than a flow report. The structure of a balance sheet is not prescribed by regulations, which means that *each company can design its own detailed structure*. However, the main categories can be found in all balance sheets. The typical structure is the following:

#### ***Balance Sheet, December 31, Year 20.... (in \$ 1,000)***

<u>Assets</u>		<u>Shareholder's Equity and Liabilities</u>
<b>Fixed Assets</b>		<b>Shareholders' Equity</b>
I.e. Land, buildings and equipment		I.e. Share Capital
Machines		Retained Earnings
<b>Current Assets</b>		<b>Liabilities</b>
I.e. Cash, Inventories,		I.e. Accounts payable
Marketable Securities		Short-term debt
Accounts Receivable		Long-term debt
<b>TOTAL ASSETS</b>	<b>=</b>	<b>TOTAL SHAREHOLDER'S EQUITY AND LIABILITIES</b>

Based on the dual aspect concept, the balance sheet has two sides: *assets* on the left side, and *shareholders' equity and liabilities* on the right side. Assets are divided into two main groups, *fixed assets* (serving the company's operations for more than one year, such as buildings, machines etc.) and *current assets* (used within one year in the production process, such as inventories, cash etc.). On the right side, the financial background of assets is presented. One possible financial source is the company's own capital, called as *shareholders' equity* (this consists of the initial capital provided by the owners, and the positive reserves generated during operations), while the other possible source is capital borrowed from other parties, which is called as *liabilities*.

## II. 2. Income Statement (P&L Account)

It is a report that summarizes the revenues and the expenses of an accounting period. It reports the results of operations during the financial year. Similarly to the balance sheet, the detailed structure is worked out by the company itself, but the main categories can be found in all income statements. The typical structure is:

### *Income Statement, Year Ended December 31, 20... (in \$ 1,000)*

	Net Sales.....	\$ 10,000
(-)	Cost of Sales.....	\$ (6,500)
(=)	<b>Gross Margin.....</b>	<b>\$ 3,500</b>
(-)	Operating expenses.....	\$ (1,300)
(=)	<b>Operating Income.....</b>	<b>\$ 2,200</b>
(±)	Other revenues and expenses (i.e. interest expense).....	\$ (200)
(=)	<b>Income before taxes.....</b>	<b>\$ 2,000</b>
(-)	Tax expense.....	\$ (550)
(=)	<b><u>Net income.....</u></b>	<b><u>\$ 1,450</u></b>

**Earnings per share (in dollars): \$ 3.44**

The profit (or *income*) is always calculated as the difference between revenues and expenses. In an income statement, different profit categories are presented. The first category is the *operating profit*, which is the difference between the revenues from operations (sales revenue) and the direct and indirect expenses related to it (*cost of sales, operating expenses*). The operating profit is then modified with the result of other activities (i.e. financial revenues and expenses), which results in the *profit before tax*. Deducting the tax expense, the final result (also referred to as the "bottom line") is obtained, called as the *net income* or *net profit*. This can be partly or entirely distributed

to shareholders in the form of *dividends*. The last piece of information presented in an income statement is the *earnings per share* indicator, which is computed as the net profit divided by the number of shares. Note: numbers in brackets refer to a deduction (a negative effect), for example (6,500) means – 6 500.

### II. 3. Cash Flow Statement

It summarizes the inflows and outflows of cash during the financial period. The Net CF shows the change in the company's liquid assets. A typical cash flow statement has the following structure:

***Cash Flow Statement, Year Ended December 31, 20...***  
***(in \$ 1,000)***

**Cash Flow from operating activities.....\$ 6,200**

(originating primarily from sale of goods and purchase of resources)

**Cash Flow from investing activities.....\$ (3,600)**

(originating primarily from purchase and sale of fixed assets)

**Cash Flow from financing activities.....\$ (1,800)**

(cash flows primarily connected with the changes in shareholders' equity and liabilities)

**Net Cash Flow.....\$ 800**

Balance at 1 January, 20.....\$ 6,700

Change in liquid assets.....\$ 800

Balance at 31 December, 20.....\$ 7,500

The three main categories are the *cash flow from operations* or *operating cash flow* (showing the net cash realized from the company's basic operations), the *cash flow from investing activities* or *investing cash flow* (expressing the net cash originating from changes in fixed assets) and the *cash flow from financing activities* or *financing cash flow* (showing the cash flows related to shareholders' equity and liabilities). The sum of these

three categories results in the *net cash flow* for the year, which is identical with the change in cash & equivalents in the balance sheet.

## II. 4. Statement of Changes in Shareholders' Equity

The Statement of Changes in Shareholders' Equity presents the increases and decreases of Shareholders' Equity in the current year by transaction type. Its general structure is as follows:

Sh.E. beginning balance on 1 January  
+ Increases in Sh.E. elements during the year  
– Decreases in Sh.E. elements during the year  
= Sh.E. ending balance on 31 December

## II. 5. Notes

This part of the annual report contains additional information in connection with the figures of the balance sheet, the income statement and the cash flow statement. It helps the user understand the background of the figures. Some examples of information usually presented among notes are:

- detailed explanations related to the figures presented in the balance sheet, in the income statement and in the cash flow statement,
- the company's organizational structure,
- members of the management,
- related companies, partners,
- market and industry trends,
- the company's products and services,
- the tendency of share prices,
- etc.

The most important role of notes is to help investors and other information users understand the pure financial figures.

### **Check your knowledge**

Answer the following questions:

1. What is accounting?
2. Who are the users of accounting information?
3. What are the main areas of accounting?
4. Define the following accounting principles:
  - Money measurement
  - Conservatism
  - Entity
  - Realization
  - Going concern
  - Matching
  - Cost
  - Consistency
  - Dual aspect
  - Materiality
  - Time period
5. Make a distinction between expenses and expenditures.
6. What are the main financial statements contained by an annual report?
7. What are the main categories on the two sides of the balance sheet?
8. Describe the structure of an income statement.
9. What are the main categories of the cash flow statement?
10. What is contained in the Notes?

### **Test questions**

*1. Fill in the blanks in the following sentences.*

1. Accounting is a set of activities the aim of which is to provide ..... for internal and external users about the economic entity's financial position, profits and cash-flows.
2. .... is a closed system of accounts in which all changes to the firm's balance sheet and income statement are recorded, based on accounting documents (invoices etc.).

3. The external expert whose responsibility is to examine the content of the annual report is called .....
4. Based on the ..... concept, the revenues and expenses of the same transaction should be presented in the same accounting period.
5. Once an entity has decided on one method (i.e. valuation method), it should treat all events of the same character in the same method unless it has a sound reason to do otherwise. This is required by the ..... concept.

*II. Select the correct answer(s).*

1. The internal users of annual reports are:
- a) Banks
  - b) Shareholders (owners)
  - c) Creditors
  - d) Workers
  - e) Managers
  - f) Authorities
  - g) Prospective investors
2. The balance sheet contains:
- a) Assets
  - b) Costs
  - c) Liabilities
  - d) Revenues
  - e) Shareholders' Equity
3. Which of the following should be presented among assets in the balance sheet?
- a) Share capital
  - b) Long-term debt
  - c) Retained earnings
  - d) Machines
  - e) Cash

4. Examples of liabilities can be:

- a) Accounts payable
- b) Short-term debt
- c) Buildings
- d) Inventories
- e) Retained earnings

5. The part of the income distributed to shareholders is called:

- a) Income before tax
- b) Income tax
- c) Earnings per share
- d) Dividends
- e) Net profit

6. Net Cash Flow is calculated as:

- a) Operating CF + Investing CF + Financing CF
- b) Operating CF + Financing CF
- c) Operating CF – Investing CF + Financing CF
- d) Operating CF + Investing CF
- e) Financing CF + Investing CF

7. Select the correct equation(s).

- a)  $\text{Assets} = \text{Shareholders' Equity} - \text{Liabilities}$
- b)  $\text{Shareholders' Equity} = \text{Assets} - \text{Liabilities}$
- c)  $\text{Fixed Assets} + \text{Current Assets} = \text{Shareholders' Equity} \& \text{Liabilities}$
- d)  $\text{Liabilities} = \text{Assets} + \text{Shareholders' Equity}$

8. Select the correct equation(s).

- a)  $\text{Gross margin} = \text{Net sales} + \text{Cost of sales}$
- b)  $\text{Operating income} = \text{Gross margin} - \text{Operating expenses}$
- c)  $\text{Operating income} = \text{Net sales} - \text{Operating expenses}$
- d)  $\text{Gross margin} = \text{Cost of sales} + \text{Operating expenses}$

## **Chapter 2**

### **The balance sheet**



The aim of this chapter is to discuss the contents of the balance sheet, defining the typical elements of assets, shareholders' equity and liabilities. The rules discussed are then illustrated with sample exercises.

## Definition of the balance sheet

The *balance sheet* is a two-sided statement about the assets and equities of the company concerning an exact point of time (*balance sheet date*, usually 31 December). In the balance sheet, amounts are expressed in money.

- *Assets (left side)*: the holdings of the entity, divided into two main categories: *fixed assets* (buildings, machines, long-term investments) and *current assets* (inventories, cash, etc.).
- *Equities (right side)*: the financial source of assets. The two main groups of equities are *shareholders' equity* (the own capital of the firm) and *liabilities* (capital borrowed from external parties).

On international level, the form of a balance sheet is not strictly prescribed by law. Economic entities can design the exact form of their own balance sheet. The only criterion is to obey the basic accounting principles. Regarding the liquidity order of assets and equities, two strategies can be seen in different countries:

- *Increasing liquidity order*: Assets are presented starting with the less liquid items (fixed assets) and ending with the most liquid ones (cash). Among equities, shareholders' equity is presented first, followed by long-term and current liabilities.
- *Decreasing liquidity order*: On the left side, the list starts with cash and ends with fixed assets, while on the right side, current liabilities are first, followed by long-term liabilities and shareholders' equity.

The types of assets and equities are discussed below.

## I. Assets

### I. 1. Fixed Assets

Assets serving the company's operations on a long term (for more than one year) are presented as fixed assets. The three basic groups of fixed assets are *intangible assets*, *tangible assets* and *investments*.

*Intangible assets* are long-lived assets without physical qualities, used in the operations of an enterprise for more than 1 year. Some typical items of intangibles are:

- Patents: exclusive rights to produce and sell goods that have one or more unique features.
- Tradable rights: i.e. rental rights, rights of usage, trademarks, licences etc.
- Software
- Goodwill: it is an intangible assets originating from the acquisition of another business, where the price paid is significantly higher than the value of the acquired company's assets minus its liabilities. This extra amount paid refers to a higher-than-average profitability, reputation, or other advantageous characteristics of the acquired business.

**Example.** Company “A” buys Company “B”. The assets and liabilities of Company “B” represent the following value:

Buildings.....	\$ 80,000
Machines.....	\$ 16,000
Inventories.....	\$ 1,600
Receivables.....	\$ 4,400
Marketable securities.....	\$ 1,000
<u>Cash.....</u>	<u>\$ 2,000</u>
Total Assets acquired.....	\$ 105,000

Short term debt.....	\$ 20,000
<u>Long term debt.....</u>	<u>\$ 25,000</u>
Total liabilities acquired.....	\$ 45,000

Company “A” paid \$ 75,000 for Company “B”. To determine the goodwill that occurred through this transaction, the following calculations should be done:

$$\begin{aligned}
 \text{Fair price} &= \text{Value of assets acquired} - \text{Liabilities acquired} = \\
 &= 105,000 - 45,000 = \$ 60,000 \\
 \text{Price paid} &= \$ 75,000 \\
 \text{Goodwill} &= \text{Price paid} - \text{Fair price} = 75,000 - 60,000 = \\
 &= \underline{\$ 15,000}
 \end{aligned}$$

*Tangible assets* embrace long-lived assets that have physical features. The most typical tangibles are land, buildings, machinery, production equipment, vehicles and construction in progress (tangibles that are just being purchased or manufactured, but their use in the firm’s operations has not started yet [they *have not been activated*]).

*Investments* represent amounts of money invested in other companies in order to control the other firm or to earn a return on the investment. Therefore, they are to be distinguished from *temporary investments*, which are only reflecting the temporary use of excess cash. Typical items of investments are:

- *Equity investments (typically shares):* Securities representing property rights. This means that the shareholder is part-owner of the issuer company. The yield of the share is called *dividend*, which is a variable amount depending on the company’s profits. Shares have no maturity, but their owner can sell them.
- *Debt securities (typically bonds):* A bond is a certificate promising to pay its holder the bond’s *par value (face value)* at maturity date plus *interest* at specified dates. Based on this definition, bonds held by an entity represent future money claims on the issuer of the bond. A special type of bonds are *discount bonds*. These do not pay interest, instead, they are issued below their par value (=at a discount). At maturity date, the issuer pays back the par value of the bonds to the holder, thus the holder’s yield is the difference between the par value and the purchase price (which is less than the par value).
- *Long-term receivables:* Receivables that have a maturity of more than one year. An example can be a long-term loan granted to another company.
- *Long-term bank deposits:* Bank deposits fixed for more than one year.

Such investments are also called *financial instruments*, and beyond the distinction of long-term and short-term items (for which we use the terms *investments* and *temporary investments* here), further categorization may be used in the balance sheet.

## I. 2. Current Assets

All assets possessed by the company *within one year* must be presented as current assets. The subcategories presented under current assets are *inventories*, *receivables*, *temporary investments*, *cash & equivalents* and *prepaid expenses and accrued revenues*.

*Inventories* are current assets typically used in one production cycle. Some types of inventories are manufactured by the firm itself, other types are purchased from external parties. Examples of inventories produced by the company are the following:

- *Work in progress*: products that are under the manufacturing process.
- *Semi-finished products*: products on which several tasks have already been done, they can be stored or rather sold in this form, but they are only part of the end-product (i.e. engine of an automobile).
- *Finished products*: sellable products on which all tasks of the production process have been completed.

Examples of inventories purchased from external parties can be:

- *Raw materials*: materials used in order to produce finished products.
- *Merchandise goods*: goods that have been purchased with the aim of selling them in an unchanged form but at a higher price.

*Receivables* include all short-term money claims against other companies, private persons, organizations or other debtors. They represent future cash inflows (to be realized within one year). The most common items are:

- *Accounts receivable*: receivables originating from sales of products or services on a credit basis.
- *Notes receivable*: money claims related to *promissory notes* (or simply *notes*) held by the firm. A promissory note is a written promise by the maker (payer) to pay a sum of money at a certain date to the payee. The reason why the company accepts a note from the customer instead of payment is that, beyond the original amount, an extra amount of money (*interest*) will be received at maturity date (to compensate the delay of payment).
- *Other receivables*: i.e. short term loans granted to other firms, receivables from employees, receivables from the state or from the local government, tax receivables etc.

*Temporary investments* appear in the balance sheet when a company has excess cash that is not needed immediately, and they put it into income-yielding investments (such as shares, bonds or other *marketable securities*), which (if needed) can be quickly and easily converted into cash.

*Cash & equivalents* represent any medium of exchange that is accepted as a means of payment. The following items are presented in this line of the balance sheet:

- *Cash in hand (petty cash)*: coins and banknotes in local or in foreign currency.
- *Bank deposits*: money put on a bank account (in local currency or in foreign currencies) that is not fixed (deposits fixed for more than one year must be presented among *Investments*).
- *Checks*: a written instrument signed by the depositor (*drawer*), ordering the bank (*drawee*) to pay a certain sum of money to a designated person (*payee*). Checks presented in the balance sheet refer to demands on cash.

*Prepaid expenses and accrued revenues* are adjusting items helping the implementation of the realization concept and the matching concept. Their role is to make certain corrections in the current year's profits. The application of these items will be explained in details in Chapter 5.

## II. Shareholders' equity and liabilities

### II. 1. Shareholders' equity

Shareholders' equity consists of the initial capital provided by the founders of the firm and different types of reserves accumulated during the operations. The basic components of shareholders' equity are the *share capital (or paid-in capital)*, the *capital surplus (or share premium account)*, *other reserves*, *retained earnings* and the *net income for the year*.

*Share capital* is made up of the par value (face value) of common stock and preferred stock held by the owners of the company. The main difference between common stock and preferred stock lies in the rights attached to them:

- *common stock*: shares that have equal rights, the most important of which are the right to vote in matters concerning the company (voting right), the right to have a share in the company's profits (dividend right), preemptive right to purchase a proportionate number of additionally issued shares (and thus to maintain the same fractional interest in the company) and the right to obtain a share in assets upon liquidation,
- *preferred stock*: shares providing preferential rights, such as extra votes or an ensured amount of dividends (even if the company had a loss in the current financial year).

*Capital surplus* expresses extra capital received by the company from its owners, without giving additional voting or dividend rights. A typical case is when new shares are issued at a higher price than their face value. The difference between the shares' issue price and face value (which is always positive, as it is not possible to issue shares below their face value) should be presented as capital surplus.

**Example.** Assume that the "Starter" Company was established with 1,000,000 pieces of common stock at a face value of \$0.25 each, while the issue price was \$0.40 per share. The following values will be presented in the balance sheet as share capital and as capital surplus:

$$\begin{aligned}\text{Share Capital} &= 1,000,000 * 0.25 = \$ 250,000 \\ \text{Capital Surplus} &= 1,000,000 * (0.40 - 0.25) = \$ 150,000\end{aligned}$$

Under *other reserves*, amounts of money are presented that originate from sources other than issue of shares or retaining profits. For example: capital injected into the company by the owners in order to resolve a weak liquidity position, without acquiring any extra rights. In this case, the company does not have an obligation to repay, these reserves will be presented as part of the shareholders' equity (it is not a loan).

The line *retained earnings* expresses the accumulated profits or losses of previous financial years that have not been distributed to the shareholders as dividends. If a company has positive retained earnings, then it is a sign that they have realized profits in the past, while negative retained earnings refer to losses in earlier periods.

The profit before tax reduced with the tax expense is presented in the balance sheet as the *net income (net profit) for the year*. This amount is the same as the bottom line in the income statement. At the beginning of each financial year, the content of this line is transferred to retained earnings.

## II. 2. Liabilities

Liabilities are amounts of money owed to different parties such as banks, creditors, employees, authorities etc. We can divide them into two groups: *long-term liabilities* and *short-term liabilities* (also called as *current liabilities*).

Liabilities that fall due *in more than one year after the balance sheet date* are presented as *long-term liabilities*. The most typical examples are the following:

- *Liabilities from bonds issued*: when the company issues bonds, it receives money for them (the *issue price*). However, the *face value* should be repaid to the holders at the maturity date, which is, therefore, presented as a long-term liability for the company. A special type of bonds is *convertible bond*. These are similar to ordinary bonds, but their holder has the right to exchange them for shares (convert them into shares) and thus to become from a creditor a part-owner of the firm.
- *Long-term debt*: loans from banks, financial institutions or other creditors that fall due in more than a year.
- *Other long-term liabilities*: any other liabilities which are different from bonds issued and debt, and fall due in more than one year.

All liabilities that fall due *within one year after the balance sheet date* must be presented in the balance sheet as *current liabilities*. Typical examples of current liabilities are:

- *Accounts payable*: amounts owed to suppliers originating from the purchase of assets on a credit basis.
- *Notes payable*: liabilities that appear when the company gives a promissory note to a supplier instead of payment. According to international standards, the longest possible term of a note is one year, and therefore, notes payable must always be presented among current liabilities.
- *Short-term debt*: loans, credits due to banks, financial institutions etc. with a maturity of less than one year.
- *Other current liabilities*: items not presented in the lines above, i.e. wages and salaries payable to employees, corporate income tax and personal income tax

(deducted from the employees' salaries) payable, social security contributions and other taxes/contributions payable etc.

- *Unearned revenues and accrued expenses*: adjusting items helping the implementation of the realization concept and the matching concept. Their role is to make certain corrections in the profits of the current year. The application of unearned revenues and accrued expenses will be explained in details in Chapter 5.

### III. Re-classification of items in the balance sheet

At the end of the year, the company has to examine all assets and liabilities. Some items, due to the change in the original conditions, must be transferred to another line of the balance sheet. The most important cases of re-classification are the following:

#### *Re-classification of assets:*

- The value of *shares* that were originally presented among "*Investments*" must be transferred to the line "*Temporary investments*" if the firm decides to sell them in the next financial year (thus they do not serve the company's operations on a long term any more),
- *Bonds* that were originally purchased for long-term investment (and thus are presented as "*Investments*") but they mature in the next year or the firm decides to sell them within one year, must be transferred to the line "*Temporary investments*".
- The installments of *long-term receivables* (originally presented among "*Investments*") that fall due within one year must be presented among current assets in the line "*Receivables*".
- The value of *long-term (fixed) bank deposits* (so far presented among "*Investments*") that mature within one year must be presented among current assets as "*Cash*".

#### *Re-classification of liabilities*

- The installments of **long-term liabilities** that fall due within one year must be presented among *current liabilities*.

### IV. Exercises

In the rest of the chapter, the problems arising during the preparation of the balance sheet are illustrated with three sample exercises.

**Exercise 1.** Determine where the following items should be presented in the balance sheet.

	ASSETS							EQUITIES		
	Fixed Assets			Current Assets				Shareholder's Equity	Liabilities	
	Intangibles	Tangibles	Investments	Inventories	Receivables	Temp. Inv.	Cash		Short-term liabilities	Long-term liabilities
Finished products										
Long-term bank loan										
Instalment of long-term bank loan payable in the next financial year										
Production materials										
The director's service car										
Paid-in Capital										
Rental rights										
Long-term loan granted to a partner company										
Software										
Retained Earnings										
Petty cash										
5-years government bonds										
Net profit for the year										
Storehouse										
Computers used in the production process										
Current account										
Customs liabilities										
Face value of the bonds issued by the company										
Fuel										
Corporate bonds bought in order to realize a gain on selling them										
Trademarks possessed										
Capital Surplus										
Advance salary payments to employees										
Insurance fee payable to the insurance company										
Goodwill										
Office equipment										
Office buildings										
Work in progress										
Production equipment										

	ASSETS							EQUITIES		
	Fixed Assets			Current Assets				Shareholder's Equity	Liabilities	
	Intangibles	Tangibles	Investments	Inventories	Receivables	Temp. Inv.	Cash		Short-term liabilities	Long-term liabilities
Short-term loan granted to another company										
Bank deposit in foreign currency										
Long-term bank deposit (fixed for 2 years)										
Promissory notes accepted from debtors										
Shares of subsidiaries										
Short-term discount bonds										
Accounts receivable										
Promissory notes given to creditors										
Accounts payable										
Personal income tax payable										
Corporate income tax payable										



**Exercise 2.**

The company possesses the following items on 31 December (in US dollars):

<b>Item</b>	<b>Value (USD)</b>	<b>Balance sheet line</b>
5-year government bonds	4 200	
Accounts payable	800	
Accounts receivable	2 600	
Accumulated profits of the previous years	6 200	
Advance payments received from customers	750	
Advance payments to suppliers	1 090	
Bank deposits	6 800	
* including fixed deposits	1 600	
Buildings	40 000	
Corporate bonds (with a term of 3 months)	860	
Corporate income tax liability	1 780	
Current account of the company	8 560	
Face value of long-term bonds issued	18 000	
Finished products	15 200	
Long term loan granted to another company	5 000	
* including the instalment due in the next year	1 250	
Long-term bank credit	9 200	
* including the instalment falling due within one year	2 000	
Machines, equipment used in production	32 400	
Merchandise goods	4 780	
Net profit for the year	.....	
Other Reserves	4 200	
Paid-in Capital	84 000	
Petty cash	200	
Production materials	5 040	
Promissory note given to a supplier	1 000	
Promissory notes accepted from customers	8 400	
Registered trademarks	4 000	
Right of use (related to a machine)	5 200	
Shares (the company is planning to sell them in the next year)	480	
Shares of other companies (held for long-term dividend yield)	800	
Short-term debt	2 880	
Social security contributions payable	1 230	
Software	25 600	
VAT liability	2 400	
Vehicles	3 200	
Wages, salaries payable to employees	4 500	

**Required:**

- Determine the lines in which the items above should be presented in the balance sheet. (Fill in the column "Balance Sheet line" in the table.)
- Prepare the company's balance sheet for the day 31 December.

**Balance Sheet, 31 December 20... (in US dollars)**

<i>Assets</i>		<i>Shareholder's Equity and Liabilities</i>	
Intangible Assets		Paid-in Capital (Share Capital)	
Tangible Assets		Capital Surplus (Share Premium Acc.)	
Investments		Other Reserves	
<b>Total Fixed Assets</b>		Retained Earnings	
Inventories		Net income for the year	
Receivables		<b>Total Shareholder's Equity</b>	
Temporary investments		Long-term liabilities	
Cash		Current liabilities	
<b>Total Current Assets</b>		<b>Total Liabilities</b>	
<b>Σ Total Assets</b>		<b>Σ Total Sh. Equity and Liabilities</b>	

**Exercise 3.**

Prepare the balance sheet based on the following data:

<b>Item possessed on 31 December</b>	<b>Value (USD)</b>	<b>Balance sheet line</b>
Accounts receivable	9 130	
Cars	32 000	
Cash	5 940	
Computers	3 200	
Current account	21 000	
Finished products	9 100	
Invoice received from suppliers	2 000	
Land, buildings	80 000	
Long-term bank loan	3 500	
* instalment payable within one year	500	
Long-term receivables	3 400	
* instalment due in the next year	680	
Long-term corporate bonds	2 100	
Merchandise goods	5 800	
Net profit for the year	7 690	
Notes payable	2 800	
Notes receivable	4 150	
Office equipment	5 680	
Office furniture	3 700	
Paid-in Capital	.....	
Personal income tax liability	850	
Production equipment	75 000	
Property rights	28 000	

Raw materials	14 400	
Retained Earnings	50 000	
Semi-finished products	2 120	
Shares (planned to be kept on a long term)	2 800	
Shares (planned to be sold in the next year)	1 200	
Short-term debt	2 000	
Short-term discount bonds	5 000	
Social security liabilities	950	
Software	12 000	
Trucks	98 000	
Wages, salaries payable to workers	1 350	
Work in progress	3 790	

**Required:**

- Determine the lines in which the items above should be presented in the balance sheet. (Fill in the column "Balance Sheet line" in the table.)
- Prepare the company's balance sheet for the day 31 December.

**Balance Sheet, 31 December 20... (in US dollars)**

<i>Assets</i>		<i>Shareholder's Equity and Liabilities</i>	
Intangible Assets		Paid-in Capital (Share Capital)	
Tangible Assets		Capital Surplus (Share Premium Acc.)	
Investments		Other Reserves	
<b>Total Fixed Assets</b>		Retained Earnings	
Inventories		Net income for the year	
Receivables		<b>Total Shareholder's Equity</b>	
Temporary investments		Long-term liabilities	
Cash		Current liabilities	
<b>Total Current Assets</b>		<b>Total Liabilities</b>	
<b>Σ Total Assets</b>		<b>Σ Total Sh. Equity and Liabilities</b>	

### Check your knowledge

Answer the following questions:

1. What items are presented on the two sides of the balance sheet?
2. What do the increasing and the decreasing liquidity orders mean?
3. Define fixed assets. Give some examples of
  - intangible assets
  - tangible assets
  - long-term investments.
4. Define current assets. Give examples of
  - inventories
  - receivables
  - short-term investments
  - cash & equivalents
5. Define shareholders' equity and name its most important components.
6. Define liabilities. Give examples of
  - long-term liabilities
  - current liabilities
7. What does re-classification mean? Why is it necessary?

### Test questions

Select the correct answer(s).

1. In case of an increasing liquidity order,
  - a) the left side of the balance sheet is started with cash, while the right side is started with shareholders' equity
  - b) the left side of the balance sheet is started with fixed assets, while the right side is started with shareholders' equity
  - c) the left side of the balance sheet is started with fixed assets, while the right side is started with current liabilities
  - d) the left side of the balance sheet is started with cash, while the right side is started with current liabilities
  - e) the right side of the balance sheet is started with cash, while the left side is started with shareholders' equity
2. Which of the following are presented as intangible assets?
  - a) buildings
  - b) retained earnings
  - c) tradable rights
  - d) goodwill
  - e) software
3. Which of the following are presented as tangible assets?
  - a) machines
  - b) raw materials
  - c) accounts receivable
  - d) long-term debt
  - e) buildings

4. Which of the following are presented as long-term investments?
- a) a loan received from another company for 3 years
  - b) a loan given to another company for 3 years
  - c) long-term bonds issued
  - d) long-term bonds bought
  - e) bank deposit fixed for 2 years
5. Which of the following are presented as inventories?
- a) merchandise goods
  - b) accounts payable
  - c) net profit
  - d) raw materials
  - e) work in progress
6. Which is the right order?
- a) semi-finished products, work in progress, finished products
  - b) work in progress, semi-finished products, finished products
  - c) finished products, work in progress, semi-finished products
  - d) construction in progress, semi-finished products, finished products
7. Which of the following transactions generate receivables in the balance sheet?
- a) the company purchased raw materials
  - b) the company accepted a promissory note from a customer
  - c) the company sold finished products to a customer
  - d) the company increased its share capital
  - e) the company received a short-term loan
8. Short-term investments can be:
- a) shares
  - b) cash
  - c) an automobile
  - d) bonds with a 5-year maturity
  - e) bonds with a 5-month maturity
9. Cash & equivalents in the balance sheet may contain:
- a) promissory notes
  - b) cash in hand
  - c) securities with high liquidity
  - d) bank accounts
  - e) long-term bank deposits
10. Which of the following are presented under shareholders' equity?
- a) share capital
  - b) retained earnings
  - c) other reserves
  - d) net profit
  - e) bonds issued

11. Select the items to be presented as long-term liabilities.

- a) a bank loan received for 5 years
- b) a bank loan received for 3 months
- c) notes payable
- d) accounts payable
- e) bonds issued

12. Select the items to be presented as current liabilities.

- a) accounts payable
- b) accounts receivable
- c) notes payable
- d) notes receivable
- e) tax liability

## **Chapter 3**

### **Valuation of items in the balance sheet**

This chapter discusses the valuation rules that must be applied when determining the value to be presented in the balance sheet. The topics covered include the valuation of intangible and tangible assets (depreciation), the valuation of long-term and short-term investments, inventories, receivables, cash, shareholders' equity and liabilities, also concentrating on the existing interest calculation methods that affect the values of investments, receivables and liabilities.

## I. Historical cost

When the company purchases an asset, it has to determine the value to be recorded in the books. This value is called *historical cost*, which is the exchange value of the asset at the date of purchase. It is important to note that *historical cost* is not identical with the invoice price, as it *includes all costs that are directly related to the purchase of the asset and occur before activation*. The typical components of the historical cost are the following:

$$\begin{aligned} & \text{invoice price} \\ & + \text{transportation/loading costs} \\ & + \text{insurance fee} \\ & + \text{customs duties} \\ & + \text{installation costs} \\ & + \text{etc.} \\ & \hline & = \textbf{Historical cost} \end{aligned}$$

It is important to note that historical cost *should never contain the Value Added Tax (VAT)* paid to suppliers.

**Example.** The company purchased a new machine from abroad. The invoice price was \$10,000 + VAT. For the transportation they had to pay \$500 + VAT, furthermore, the costs related to the customs process are altogether \$1,200. After activation, \$400 + VAT were paid to a domestic company as maintenance cost.

To determine the historical cost, we have to collect all items that are directly related to the purchase of the asset, excluding VAT. These are the following:

- invoice price 10,000
- transportation cost 500
- customs fees 1,200

**Historical cost = \$11,700**

Note that VAT amounts were not regarded as a part of the historical cost, and that the maintenance cost is not related to the purchase, but to the continuous usage of the asset, and furthermore, it appeared after activation, so it was excluded from the calculation. The machine will be entered in the books at a historical cost of \$11,700.

Also note that in case of assets produced by the firm itself, historical cost is computed based on *direct manufacturing costs*. In this process, all the material, personnel and depreciation costs that can directly be related to the asset are summarized to determine the historical cost.



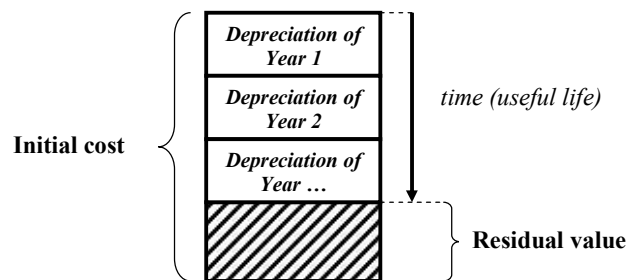
## II. Valuation of intangible and tangible assets

All intangible and tangible assets lose their capacity to generate profits through the time. The reasons for this are physical deterioration and obsolescence. This reduction in value is expressed by an annual cost called *depreciation*. The tangible and intangible assets should be presented in the balance sheet at *net value (book value)* which is computed as follows:

$$\begin{aligned} & \text{Initial cost of the asset} \\ & - \text{Accumulated depreciation} \\ & = \text{Net value (book value)} \end{aligned}$$

An exception to this rule is *land*, which is not depreciated due to the fact that it does not deteriorate and thus does not lose its value. It is important to define some key expressions in connection with depreciation. First, *useful life* is determined, which expresses the time interval within which the asset is used in the company's operations. The length of useful life is a decision of the firm's management, and it must be estimated after the activation of the asset. Second, the expression *initial cost* refers to the historical cost of the asset. These two expressions mean the same, but while *historical cost* is used generally for all types of assets, *initial cost* is a category only used for intangible and tangible assets. Third, *residual value* has to be determined, which is the expectable market value of the asset at the end of its useful life. If, according to realistic expectations, the asset will lose all its value, the residual value can be zero.

The depreciable cost should be spread over the useful life of the asset in the form of depreciation expense. By recording depreciation expense every year, the firm reduces its profits, thus 'saving' money for the replacement of the asset after it is fully depreciated. At the end of useful life, the asset's value should be equal with its residual value:



Thus the *depreciable cost* (that will be written down by the end of the useful life) is the *difference between the initial cost and the residual value*.

To determine the depreciation cost for the corresponding year, companies can choose between different practical methods, the most commonly used of which are:

- Straight-line method
- Sum-of-the-years-digits method
- Declining balance method
- Units of production method

On the following pages, all of the above methods are discussed with illustrative examples.

## II. 1. Straight-line method

The depreciable cost is written off in equal amounts every year, which results in a constant decrease of the asset's value:

$$\text{Annual depreciation} = \frac{\text{Depreciable cost}}{\text{Useful life}}$$

**Example 1.** One of the company's manufacturing machines was bought for \$ 7,000 on 1 January. It is planned to be used for 5 years. According to experts, its market value after 5 years will be \$ 1,000. The annual depreciation cost is:

$$\text{Annual depreciation cost} = (7,000 - 1,000)/5 = \$ 1,200 \text{ per year.}$$

If the asset has not been used for the entire financial year, then only a proportion of the yearly cost must be presented.

**Example 2.** The company purchased production equipment on 1 October in the value of \$4,500. They plan to use it in the next 4 years. The estimated residual value is \$1,300. When calculating the depreciation cost for the current year, it must be considered that only the first three months of the first asset year (October, November and December) affect the current financial year:

$$\text{Depreciation cost for the year} = (4,500 - 1,300)/4 * 3/12 = \$ 200$$

## II. 2. Sum-of-the-years-digits method

It is a so-called degressive method, which means that the depreciation in the first year is the highest, while the depreciation of the last year of the useful life is the lowest. Degressive methods are the appropriate choice for assets that lose their values quickly at the beginning of their useful lives, while at the end of useful life the decrease in their values is significantly less (for example: software, computers or other IT devices).

After computing the depreciable cost, the sum of the years digits is determined with the formula  $n(n+1)/2$ , where  $n$  is the number of years of estimated life.

For example: if the useful life is 5 years, the sum of the years digits is  $1+2+3+4+5=15$ . Thus, the depreciation costs of the corresponding years are:

Year 1:	$5/15 * \text{depreciable cost}$
Year 2:	$4/15 * \text{depreciable cost}$
Year 3:	$3/15 * \text{depreciable cost}$
Year 4:	$2/15 * \text{depreciable cost}$
Year 5:	$1/15 * \text{depreciable cost}$

The calculation will be illustrated with two examples. The first example shows the simplest case, when asset years are identical with financial years.

**Example 1.** “FULL” Corporation has a software. Its estimated useful life is 6 years. Its purchase price was \$1,680. Because of quick obsolescence, experts say, its residual value is zero. The company applies the sum-of-the-years-digits method to determine the depreciation cost.

(1) What is the depreciation cost of Year 3?

(2) What is the net value (book value) of the asset at the end of Year 3?

Solution:

$$(1) (1,680 - 0) * 4/21 = \$ 320$$

$$(2) 1680 - 1680 * (6+5+4)/21 = \$ 480$$

Again, if the asset is not in the possession of the company during the whole year, the depreciation cost should be computed as a proportion of the yearly depreciation.

**Example 2.** “XY” Ltd. bought a manufacturing machine on 1 April 2019. The initial cost was \$4,000, the estimated market value at the end of the asset’s useful life (4 years) is \$800. The applied method is the sum-of-the-years-digits. Compute the depreciation for the years 2019 and 2020.

Solution: the depreciable cost is  $4,000 - 800 = \$ 3,200$ .

$$2019: \quad 3,200 * 4/10 * 9/12 = \$ 960$$

$$2020: \quad 3,200 * 4/10 * 3/12 + 3,200 * 3/10 * 9/12 = \$ 1,040$$

## II. 3. Declining-balance method

Under the declining-balance method, the current year’s depreciation is computed by multiplying the difference between the actual book value and the residual value of the asset by a constant rate.

$$\text{Annual depreciation} = (\text{Actual book value} - \text{Residual value}) * \text{Rate}$$

This also results in a degressive depreciation. Important to note that with this method the *asset’s book value will never reach the residual value* (if the actual book value is very low, and a given percentage of it is written down, there will still be a remaining amount). As a solution, a time limit is also attached to the method. In the last year of the useful life the remaining sum is written down in one amount.

**Example 1.** Our enterprise has a tangible asset used in its operations, which was purchased for \$ 17,500. Its estimated residual value is \$ 1,500. We decided to apply the declining-balance method with a 40% rate. Determine the depreciation costs for the first four years.

Solution:

$$\text{Depreciable cost} = 17,500 - 1,500 = \$ 16,000$$

Year	Remaining depreciable cost at the beginning of the year	Depreciation for the year	Accumulated depreciation	Book value at the end of the year (Initial cost minus accumulated depreciation)
1	16,000	6,400	6,400	11,100
2	9,600	3,840	10,240	7,260
3	5,760	2,304	12,544	4,956
4	3,456	1,382	13,926	3,574

**Example 2.** A production equipment is depreciated using the declining-balance method with a 40% rate. It has been used for 3 years, the accumulated depreciation is \$ 15,680. What is its initial cost?

Solution:

Book value after 3 years =  $(1-0.4)^3 = 21.6\%$

Accumulated depreciation =  $100-21.6 = 78.4\% = \$ 15,680$

Initial cost =  $100\% = 15,680/0.784 = \$ 20,000$

## II. 4. Units-of-production method

In this case, the useful life of the asset is not expressed in time but in productive capacity, such as machine hours, kilometres, number of units produced etc. Based on this definition it can be seen that the units-of-production method is mostly used for vehicles (kilometre-based depreciation) and for some manufacturing machines (machine hour or units produced based depreciation). First the *unit depreciation* should be computed as follows:

$$\text{Unit depreciation} = \frac{\text{Depreciable cost}}{\text{Estimated capacity}}$$

Then, each year, based on ex post information, the depreciation cost should be calculated as multiplying the unit depreciation by the units used during the period.

*An important rule is that the asset should not be depreciated below its residual value, even if its real performance exceeded the estimated capacity.*

**Example.** The company has a truck used for transportation. Based on experts' opinions, it is determined that its useful life is 1,000,000 kilometres. The initial cost was \$150,000. The estimated market value after retirement is \$30,000. Until 31 December 2019, it has already performed 850,000 kilometres. In 2020, its performance was 100,000 km, while in 2021 it was 60,000 km. Determine the depreciation cost for 2020 and 2021.

Solution:

Unit depreciation =  $(\$150,000 - \$30,000)/1,000,000 \text{ km} = \$ 0.12 \text{ per km}$

Book value at the beginning of 2020 =  $\$ 150,000 - 850,000 * \$ 0.12 =$   
 $= \$ 48,000$

*Year 2020*

The depreciation is  $100,000 \text{ km} * \$ 0.12 / \text{km} = \$ 12,000$

Book value at the end of 2020 =  $\$ 48,000 - \$ 12,000 = \$ 36,000$

*Year 2021*

The depreciation would be  $60,000 \text{ km} * \$ 0.12 / \text{km} = \$ 7,200$ ; but only \$ 6,000 should be recorded because the asset has reached its residual value of \$ 30,000.

*It must be noted that, if the assets market value changes later, then a revaluation should be done, which will affect the value presented in the balance sheet.*

### III. Valuation of securities (shares and bonds)

Shares and bonds should be entered into the balance sheet at their *fair value*, which can be expressed as an absolute amount or as a percentage of the par value (face value).

**Example.** “Market-Maker” Co. purchased 30 pieces of “X” shares on the stock market with the aim of long-term return. The shares’ face value is \$100 per unit, while their fair value is 115%. The fair value remained unchanged until the end of the year. What value should be presented in the balance sheet?

Solution:

The securities should be presented *at fair value*, which is  
 $30 * 100 * 1,15 = \$ 3,450$

*Again, note that upon a change in the fair value, revaluation must be done, which will affect the value presented in the balance sheet.*

### IV. Valuation of inventories

Inventories are the key assets for manufacturing and merchandising companies. Based on the matching concept and the cost concept the accountant’s task is to distinguish:

- the historical cost of *inventories sold during the financial year* should be presented as an expense (in the income statement as “Cost of sales”)
- *inventories remaining on stock* at the end of the year should be presented in the balance sheet as “Inventories”.

When preparing the balance sheet, the value of ending inventory should be determined in terms of money. These depend on the inventory system of the economic entity and the costing method applied. The main types of inventory systems are:

- *Periodic systems:* During the year records related to inventories are not being kept continuously. The cost of sales and the value of ending inventory are computed only at the end of the year.
- *Perpetual systems:* Inventory transactions are being recorded continuously during the year. The cost of sales should be calculated for every decrease of inventories.

The problem can be described as follows: Assume that the company has a large amount of the same inventory on stock, which contains different quantities purchased at different costs. When there is a decrease in the inventory (i.e. selling a given amount of merchandise goods), the valuation of inventories taken out from the system causes a problem: which costs should be used? Should we use the unit cost of the earliest purchase? Or that of the latest purchase? Or should we calculate an average of the unit costs existing in the system? To solve this problem, several practical methods have been worked out. The most commonly used inventory costing methods are:

- *FIFO (First In, First Out)*: costs should be charged against revenue in the order in which they were incurred. Hence the inventory remaining is assumed to be made up of the most recent costs.
- *LIFO (Last In, First Out)*: the most recent costs incurred should be charged first against revenue.
- *Average cost*: costs should be charged according to the weighted average unit costs of the goods.

#### IV. 1. Inventory Costing Under a Periodic System

The different methods will be illustrated through the following example:

##### **Example.**

Beginning Inventory (1 Jan)	200 units at \$ 9
Purchase No.1. (5 May)	300 units at \$ 10
Purchase No.2. (27 Sept)	400 units at \$ 11
Purchase No.3. (23 Nov)	100 units at \$ 12
Ending Inventory (31 Dec)	300 units

Our task is to determine the cost of sales and the cost of ending inventory. As the beginning inventory plus purchases No.1-3. resulted in 1000 units available for sale, and the ending inventory was 300 units, it can be computed that 700 units were sold.

**FIFO:**      Cost of Sales =  $200 \cdot 9 + 300 \cdot 10 + 200 \cdot 11 = \$ 7,000$   
                  Inventory, 31 Dec =  $200 \cdot 11 + 100 \cdot 12 = \$ 3,400$

**LIFO:**      Cost of Sales =  $100 \cdot 12 + 400 \cdot 11 + 200 \cdot 10 = \$ 7,600$   
                  Inventory, 31 Dec =  $100 \cdot 10 + 200 \cdot 9 = \$ 2,800$

##### **Average Cost:**

Weighted Average Cost =  
 $= (200 \cdot 9 + 300 \cdot 10 + 400 \cdot 11 + 100 \cdot 12) / 1000 =$   
 $= \$ 10.4 \text{ per unit}$   
          Cost of Sales =  $700 \cdot 10.4 = \$ 7,280$   
          Inventory, 31 Dec =  $300 \cdot 10.4 = \$ 3,120$

## IV. 2. Inventory Costing Under a Perpetual System

Calculations will be based on the following illustrative data:

### Example.

Beginning Inventory	(1 Jan)	200 units at \$ 20
Purchase No.1.	(12 Feb)	300 units at \$ 23
Purchase No.2.	(24 Apr)	200 units at \$ 22
Sale No.1.	(6 June)	600 units
Remaining		100 units
Purchase No.3.	(22 Oct)	400 units at \$ 25
Sale No.2.	(13 Dec)	400 units
Ending Inventory	(31 Dec)	100 units

Determine the cost of sales No.1-2. and the cost of ending inventory.

### **FIFO:**

Cost of sale No.1.:	$200 \times 20 + 300 \times 23 + 100 \times 22 = \$ 13,100$
Cost of sale No.2.:	$100 \times 22 + 300 \times 25 = \$ 9,700$
Inventory, 31 Dec:	$100 \times 25 = \$ 2,500$

### **LIFO:**

Cost of sale No.1.:	$200 \times 22 + 300 \times 23 + 100 \times 20 = \$ 13,300$
Cost of sale No.2.:	$400 \times 25 = \$ 10,000$
Inventory, 31 Dec:	$100 \times 20 = \$ 2,000$

### **Average Cost:**

After every purchase the weighted average unit cost is computed. This average is used to determine each cost of sale until another purchase is made and a new average is computed. This averaging technique is called *moving average*.

#### ***Sale No.1.***

$$\begin{aligned} \text{Average Cost} &= (200 \times 20 + 300 \times 23 + 200 \times 22) / 700 = \\ &= \$ 21.86 \text{ per unit} \end{aligned}$$

$$\begin{aligned} \text{Cost of Sale No.1.} &= 600 \times 21.86 = \$ 13,116 \\ \text{Remaining: } &100 \text{ units at } \$ 21.86 \end{aligned}$$

#### ***Sale No.2.***

$$\begin{aligned} \text{Average Cost} &= (100 \times 21.86 + 400 \times 25) / 500 = \\ &= \$ 24.37 \text{ per unit} \\ \text{Cost of Sale No.2.} &= 400 \times 24.37 = \$ 9,748 \end{aligned}$$

#### ***Ending inventory (31 Dec)***

$$100 \text{ units} \times \$ 24.37 \text{ per unit} = \$ 2,437$$



### IV. 3. Comparison of inventory costing methods

The result of the different methods depends on the tendency of market prices.

- *FIFO*: During a period of rising prices, it overestimates both gross profit and ending inventory, as the lower costs are charged against revenues and inventories at higher cost remain as ending inventory. As a result, illusory profits may appear.
- *LIFO*: In a period of rising prices it fulfills the Conservatism Concept better than FIFO. The result is lower profits and lower value of ending inventory. (In periods of decreasing prices, this relationship is reverse.)
- *Average Cost*: a compromise between FIFO and LIFO.

The economic entity (company) has the choice, but once it has decided on using a method, it should not change it unless it has serious reasons to do that (*Consistency concept*). In the international practice (and according to international standards), the FIFO and the average cost methods are preferred.

### V. Valuation of receivables

Basically, receivables are presented at *book value* (at the value originally recorded), however, in some cases the book value must be modified.

Receivables in the balance sheet should only contain amounts that are acknowledged by the other party and are certain to be realized in the future. Some special cases should be handled:

- *Uncollectible receivables* should not be presented in the balance sheet. (uncollectible = will never be realized). These should be written off. The *write-off* of uncollectible receivables is irreversible, so the item is deleted from books.
- *Doubtful receivables* (doubtful = not likely to be realized) should not be presented in the balance sheet. For the doubtful amount, an *allowance* (deduction) should be recorded. In contrast with the write-off of uncollectible accounts, the allowance is reversible. If the reasons for the allowance disappear (the money becomes collectible), the account should be reinstated (set back to the original book value).
- *Receivables not acknowledged* by the customer should not be presented in the balance sheet.

**Example.** The firm's total Accounts receivable is \$ 15,000 at the end of the financial year. One of the customers went bankrupt. The management of the firm has been informed that 20% of the accounts are uncollectible and a further \$ 1,400 is doubtful to be realized. The firm does not have other types of receivables.

What value of receivables should be stated in the balance sheet?

Total Receivables	\$ 15,000	
- Write-off of uncollectibles	\$ 3,000	(20%)
- Allowance for doubtful accounts	\$ 1,400	
<b>= Receivables presented</b>	<b>\$ 10,600</b>	



## VI. Valuation of cash, shareholders' equity and liabilities

*Cash and equivalents*, as well as *shareholders' equity and liability* items should be presented at their *book value* (at the value actually kept in connection with the given item in the company's accounting records).

## VII. Interest calculations

To guarantee the correct valuation of investments, receivables, cash and liabilities, it is necessary to know the most common applications of interest. The three main types of interest to be discussed are *simple interest*, *annuity* and *compound interest*.

### VII. 1. Simple interest

The basic formula of simple interest is:

$$\text{Principal} * \text{annual interest rate} * \text{time} = \text{Sum of interest}$$

Simple interest appears, for example, when a company borrows money, and the debt is redeemed in equal installments. Thus, at every redemption date a constant amount of capital (*capital redemption*) is repaid, furthermore, *interest* is paid on the corresponding period. The sum of interest is continuously decreasing, as the capital remaining is getting lower after each redemption. The sum of capital redemption and interest (the total amount to be paid at a certain redemption date) is called *debt service*.

$$\begin{array}{r} \text{Capital redemption} \\ + \text{Interest} \\ \hline = \text{Debt service} \end{array}$$

**Example.** Our firm borrowed \$ 10,000 from one of its partners on 1 March 2019. According to the contract, the payback of the capital should be conducted quarterly within one year, in equal instalments. The interest rate is 18%. Determine the amount of capital redemption, interest and debt service for 1 June 2019, 1 September 2019, 1 December 2019 and 1 March 2020.

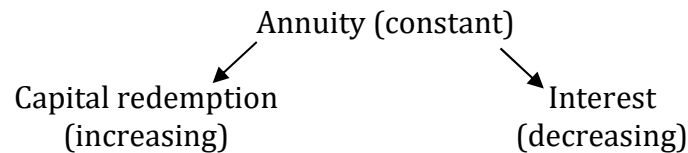
*Solution:*

	1 June 2019	1 Sept 2019	1 Dec 2019	1 March 2020
Capital remaining before redemption \$	10 000	7 500	5 000	2 500
Redemption instalment \$	2 500	2 500	2 500	2 500
Interest \$ (Capital remaining * 0.18/4)	450	337.5	225	112.5
Debt service \$ (capital + interest)	2 950	2 837.5	2 725	2 612.5
Capital remaining after redemption \$	7 500	5 000	2 500	0

It is easy to see that the capital decreases evenly during the term (\$2,500 per year) and that the interest (and in line with it, the debt service) is following a decreasing tendency.

## VII. 2. Annuity

In contrast to simple interest (where the instalments of capital redemption are constant, while the interest and thus the debt service keep decreasing through the time), *annuity means a constant debt service*:



To determine annuity, we can use the following formula:

$$C = \frac{PV * r}{1 - \frac{1}{(1+r)^t}}$$

where  $C$ : the sum of annuity  
 $PV$ : the amount of money borrowed  
 $r$ : the interest rate for one redemption period  
 (a proportion of the annual interest rate)  
 $t$ : the number of redemption periods

The biggest advantage of annuity compared to simple interest calculation is that in this case it requires a constant cash outflow for the debtor, which makes liquidity planning easier.

**Example 1.** The firm borrowed \$ 20,000 for 4 years. Redemption should be made quarterly, and the interest rate is 12%. How much money do we have to pay in every quarter?

$$C = \frac{20,000 * \frac{0.12}{4}}{1 - \frac{1}{\left(1 + \frac{0.12}{4}\right)^{16}}} = \$1,592$$

**Example 2.** “LOGO” Ltd. borrowed \$ 6,000 for one year on 1 January. The payback will be conducted quarterly in the form of annuity. The interest rate is 15%. Determine the amount of annuity, capital redemption and interest for every quarter.

$$\text{Annuity}(C) = \frac{6,000 * \frac{0.15}{4}}{1 - \frac{1}{\left(1 + \frac{0.15}{4}\right)^4}} = \$1,643$$

	<b>31 March</b>	<b>30 June</b>	<b>30 Sept</b>	<b>31 Dec</b>
Capital remaining before redemption \$	6 000	4 582	3 111	1 584
Capital redemption \$	1 418	1 471	1 527	1 584
Interest \$ (Capital remaining * 0.15/4)	225	172	116	59
Annuity \$ (Capital + interest)	1 643	1 643	1 643	1 643
Capital remaining after redemption \$	4 582	3 111	1 584	0

It can be seen that in this case total cash flow (annuity) is constant, with changing inner structure (increasing share of capital and decreasing share of interest). Another thing to note is that in this case, at half of the term, the remaining capital is more than half of the original capital, in contrast with simple interest, where the capital is proportionately decreasing in parallel with time.

### VII. 3. Compound interest

The typical appearance of compound interest is bank deposits. At the end of every period, the interest is added to the deposit. Then, in the next period, interest will be computed based on the already increased amount of money, which results in an exponential increase in the balance of the deposit.

**Example.** The company opened a \$ 14,000 bank deposit at its bank on 1 April. The annual rate of interest is 5%, which is credited on the account at the end of every month. The company has not drawn money from the account until the end of the year.

What is the account's balance at 31 December?

*Solution:*  $14,000 \cdot (1 + 0,05/12)^{12} = \$ 14,534$

### VIII. Exercises

In this sub-chapter all problems discussed in the chapter will be illustrated with sample exercises.

#### Exercise 1.

The company has the following tangible assets:

- 1) Land that was bought 4 years ago for 32 000 USD.
- 2) Buildings with an initial cost of 72 000 USD, their residual value is 12 000 USD, useful life is 25 years. At the end of the financial year, they are 10.5 years old. For depreciation, the straight-line method is applied.
- 3) Production equipment: 2.75 years old, the initial cost is 28 000 USD, residual value is 4 000 USD. It is depreciated during 5 years using the sum-of-the-years-digits method.
- 4) A car that was bought for 22 800 USD, its estimated market value at the end of the useful life is 4 800 USD. Its total capacity was estimated at 300 000 kilometres, it has already been used for 145 000 kilometres (including 30 000 km performed in the current year).

- 5) A computer: its purchase price was 4 400 USD, its expected market value at the end of the useful life is 400 USD. For depreciation, the declining balance method is applied with a 30% rate. The computer is 3 years old now.

**Required:**

- Determine the *accumulated depreciation* and the *net value* (book value) of the above assets.
- Determine the *depreciation for the current financial year* in case of each asset.
- What value can be presented in the balance sheet as “Tangible Assets”?

**Exercise 2.**

The following information is available about the company’s Tangible Assets (in USD):

Land	4 350
Buildings	28 200
Accumulated depreciation of buildings	.....
Manufacturing machines	30 000
Accumulated depreciation of manufacturing machines	.....
Vehicles used in production	.....
Accumulated depreciation of vehicles	2 250
Office equipment	1 200
Accumulated depreciation of office equipment	450

Additional information:

- The useful life of buildings is 50 years, their average age is 15 years, the estimated residual value is 4 200 USD. To determine depreciation, the straight-line method is used.
- Manufacturing machines are written off using the sum-of-the-years-digits method, their useful life is 7 years, the residual value is 2 000 USD. Until now, the depreciation of 2.5 years has already been presented.
- The accumulated depreciation of vehicles is 20% of their initial cost.

**Required:** Determine the book value of the company’s tangible assets.

**Exercise 3.**

The company applies a perpetual inventory system. The beginning balance of merchandise goods was 400 units at a cost of \$24 per unit. During the year, the following events have been recorded (in a chronological order):

- ⇒ 300 units were purchased at a \$28 unit cost,
- ⇒ 500 units were sold,
- ⇒ 400 units were purchased at \$32 per unit,
- ⇒ 450 units were sold.

**Required:** Determine the cost of each sale and the value of “Inventories” in the balance sheet (ending inventory) if the method applied is

- the FIFO method
- the LIFO method
- the moving average cost method.

**Exercise 4.**

The company received a 8 000 USD bank loan on 30 September. The term of the loan is four years, it must be redeemed quarterly, and the interest rate is 15%.

**Required:** Determine the value of “Long-term liabilities” in the balance sheet based on

- a) simple interest
- b) annuity

### Check your knowledge

Answer the following questions:

1. Define the following expressions:
  - historical cost
  - residual value
  - useful life
  - depreciable cost
2. Explain the calculation process of
  - straight-line method
  - sum-of-the-years'-digits method
  - declining balance method
  - units-of-production method
3. What is the difference between a periodic and a perpetual inventory system?
4. Make a distinction between FIFO, LIFO and average cost methods.
5. What value is presented in the balance sheet for receivables?
6. Define uncollectible and doubtful receivables.
7. What is debt service?
8. Explain how debt service changes during the term of a loan in case of
  - simple interest
  - annuity
9. What does compound interest mean?

### Test questions

Select the correct answer(s).

1. The historical cost of a tangible asset should contain
  - f) net invoice price
  - g) VAT
  - h) transportation cost
  - i) customs duty
  - j) maintenance cost paid after activation
2. Select the correct equation(s).
  - a)  $\text{Net value} = \text{Initial cost} - \text{Residual value}$
  - b)  $\text{Depreciable cost} = \text{Initial cost} - \text{Accumulated depreciation}$
  - c)  $\text{Book value} = \text{Historical cost} - \text{Accumulated depreciation}$
  - d)  $\text{Depreciable cost} = \text{Initial cost} - \text{Residual value}$
  - e)  $\text{Book value} = \text{Historical cost} - \text{Residual value}$
3. Which of the following asset(s) is (are) not depreciable?
  - a) land
  - b) buildings
  - c) machines
  - d) office equipment
  - e) raw materials

4. Select the statement(s) valid for the straight-line method.
  - a) The value of the asset decreases evenly during the useful life.
  - b) The depreciation expense decreases evenly during the useful life.
  - c) It is a degressive method.
  - d) The depreciation expense recorded in the last year of the useful life is identical with that recorded in the first year.
  - e) Using this method, it is possible that the value of the asset falls below the residual value.
5. Select the statement(s) valid for the sum-of-the-years'-digits method.
  - a) The value of the asset decreases evenly during the useful life.
  - b) The depreciation expense decreases evenly during the useful life.
  - c) It is a degressive method.
  - d) The depreciation expense recorded in the last year of the useful life is identical with that recorded in the first year.
  - e) The difference between the depreciation expenses of the first and the second year is identical to the difference between the depreciation expenses of the second and the third year.
6. The annual depreciation is calculated by multiplying the remaining depreciable cost with a given percentage. Which method is this?
  - a) straight-line method
  - b) sum-of-the-years'-digits method
  - c) declining balance method
  - d) units-of-production method
7. In which situation would you propose the units-of-production method?
  - a) if the useful life is more than 5 years
  - b) if the asset loses its value quickly
  - c) if the useful life can be better expressed in a productive capacity (hours, kilometres, etc.) than in time
  - d) in case of buildings
8. In case of the straight-line method, at the half of the useful life the value of the asset will be half of its historical cost. Under what conditions is this statement true?
  - a) It is always true.
  - b) It is only true if the residual value is not zero.
  - c) It is only true if the residual value is zero.
  - d) It is never true.

9. Select the right statement(s).

- a) In case of increasing prices, the FIFO method results in a higher balance sheet value than the LIFO method.
- b) In case of increasing prices, the FIFO method results in a higher profit than the LIFO method.
- c) In case of increasing prices, the LIFO method results in a higher balance sheet value than the FIFO method.
- d) In case of increasing prices, the LIFO method results in a higher profit than the FIFO method.
- e) In case of increasing prices, the average cost method results in a balance sheet value that is between the FIFO and LIFO values.

10. How should doubtful and uncollectible receivables be handled?

- a) Doubtful receivables and uncollectible receivables are not presented in the balance sheet at all.
- b) Doubtful receivables are presented in the balance sheet, while uncollectible receivables are not.
- c) Uncollectible receivables are presented in the balance sheet, while doubtful receivables are not.
- d) Both doubtful and uncollectible receivables are presented in the balance sheet.

11. Select the right statement(s).

- a) In case of simple interest, debt service decreases during the term of the loan.
- b) In case of simple interest, capital redemption decreases during the term of the loan.
- c) In case of annuity, debt service is constant during the term of the loan.
- d) In case of annuity, capital redemption increases during the term of the loan.
- e) In case of simple interest, at the half of the term the remaining capital is half of the original amount.
- f) In case of annuity, at the half of the term the remaining capital is half of the original amount.

12. The company fixed a deposit with an annual interest rate of 10%. The bank calculates a monthly compound interest. Which of the following statement(s) is (are) true?

- a) The effective interest rate will be higher than 10%.
- b) The effective interest rate will be lower than 10%.
- c) The effective interest rate will be exactly 10%.
- d) If the company does not withdraw money from the deposit then the increase of the deposit will be growing year by year.



## **Chapter 4**

### **The income statement**

In this chapter the structure of income statement is discussed, with defining all types of revenues and expenses presented in it. Similarly to earlier chapters, the rules to be applied will be illustrated with practical examples.

The role of the Income Statement (Profit and Loss Account) is to show the computation of the company's income (profits) in the current financial year. The different categories of profit are calculated by stating the revenues and expenses related to the current fiscal year against each other. In practice, there are two different approaches to prepare the income statement.

### I. Income Statement with a sales approach

The sales approach means that against revenues, the direct and indirect costs are stated. The costs directly related to the goods sold are called *cost of sales*, while the indirect costs are named *operating expenses*. The difference between sales revenue and the cost of sales and operating expenses, corrected with the balance of other operating revenues and expenses, result in the *operating profit*. This is then further modified with the balance of *financial revenues and expenses*, in order to obtain the *profit before tax*. After deducting *tax liability* the final result, the *net profit* is obtained, which is also called the *bottom line*. As it was mentioned in connection with the balance sheet, the detailed structure is worked out by the company, which means that each company may have a different outlook for the income statement. However, the main lines can be found in all income statements. A typical structure of a sales cost based income statement is the following:

#### Income Statement, Year Ended December 31, 20... (in thousands of dollars)

Net Sales.....	\$ 10,000
(-) Cost of Sales.....	\$(6,500)
(=) <b>Gross Margin</b> .....	<b>\$ 3,500</b>
(-) Operating expenses.....	\$(1,300)
(+) Other revenues.....	\$ 500
(-) Other expenses.....	\$ (700)
(=) <b>Operating Income</b> .....	<b>\$ 2,000</b>
(+) Financial revenues.....	\$ 800
(-) Financial expenses.....	\$ (600)
(=) <b>Income before taxes</b> .....	<b>\$ 2,200</b>
(-) Tax expense.....	\$ (396)
(=) <b>Net income</b> .....	<b>\$ 1,804</b>
 <b>Earnings per share (in dollars)</b> .....	 <b>\$ 3.61</b>
(500,000 common shares outstanding)	

The content of the lines can be summarized as follows:

*Net Sales* is the total invoice price of the goods shipped or services rendered during the period. It should not include:

- *Sales returns*: the sales value of assets that were returned by customers. This amount can be subtracted from the sales figure directly.
- *Allowances*: Price reductions made to customers because of defective products or for other reasons.
- *Sales discounts*: discounts taken by customers for prompt payment. For example, a business may offer a 2% discount to customers who pay within 10 days.
- *Sales taxes and excise taxes (excise duties)*: Such taxes are not revenues but rather represent collections that the business makes on behalf of the government. They are a liability to the government until paid.

According to the Matching Concept, the production cost or purchase cost of the goods sold or services rendered are presented against the revenues from their sales. This is called the *cost of sales*. When computing cost of sales, we can choose from several methods like FIFO, LIFO and average cost.

The difference between sales revenue and cost of sales is the *gross profit* or *gross margin*. It expresses how much profit was generated from the sale of products and services, *regardless of operating expenses (i.e. administrative costs)*.

Besides the cost of sales (the direct costs), the *operating expenses* should also be deducted from the sales revenue. Operating expenses are expenses that are not directly connected to the products or services sold like general, administrative expenses (i.e. rental fees, electricity, water, office supplies etc.) or R&D (research and development) expenses.

The balance of the sales revenue, the cost of sales and the operating expenses are corrected with *other revenues* and *other expenses* from operations. *Other revenues* are profit-increasing items that are connected to the basic activities of the company, however, they cannot be regarded as sales revenue. The most typical item here is the *gain on sale of intangible and tangible assets*. Other examples can be *grants received* from the state or local government or *default charges received* from outside parties for late fulfilment of a contract. *Other expenses* are mainly the opposite of other revenues. These are expenses that are related to the basic operations but cannot be regarded as cost of sales or operating expenses. The *loss on sale of intangible and tangible assets* is the most important item presented here, other examples are *grants given* to other companies or *default charges paid*. Note that many companies show other revenues & expenses in a single line on their income statement.

*Operating profit* shows the difference between gross profit and operating expenses, plus other revenues minus other expenses.

When determining the profits for the current period, an important role is played by *financial revenues* and *financial expenses*.

*Financial revenues* originate from financial transactions, such as *interests* or *dividends* earned, *gains on foreign currency* transactions or *gain on sale of securities*. The following examples illustrate the effects of the above mentioned transactions on financial revenues.

After financial revenues, let us concentrate on *financial expenses*. Financial expenses are expenses that are in connection with financial activities. A classic and highly important item here is *interest paid on short-term and long-term debts*. Other items may be *losses originating from foreign currency exchange rates* or *from the sale of securities*. The following two examples illustrate the effect of debt on financial expenses.

When the operating profit is modified with all financial revenues and expenses, the *income before tax* is obtained. The income before taxes is then reduced by the *tax expense*. Thus the *net income* will be obtained. (This will accumulate in retained earnings, and later can be the source of dividend payments.)

Finally, the *Earnings Per Share (EPS)* indicator shows the profits per share available for shareholders for dividend payments. The EPS amount is obtained by dividing the net income by the number of shares outstanding.

The sales cost type income statement is typical for merchandising companies, where the “cost of sales” can be determined easily, as it is equal with the purchase price of the goods sold.

## II. Income Statement with a *production approach*

Some companies show their net income using the so-called *production approach*. They do not present cost of sales as one item, instead, they list individual expenses *by object*, such as cost of materials, salaries, depreciation cost etc. The main difference between this form and the sales cost type statement lies in the calculation of the operating profit. All the other lines (financial revenues and expenses, profit before tax, profit after tax, net profit for the year) are identical with those explained in the case of the sales cost type income statement.

A sample production cost type income statement might look as follows:

### Income Statement, Year Ended December 31, 20... (in thousands of dollars)

Net Sales.....	\$ 10,000
(±) Change in inventories.....	\$ 500
(+) Other revenues.....	\$ 500
(-) Production materials and external services.....	\$(1 800)
(-) Personnel expenses.....	\$(4,900)
(-) Depreciation expense.....	\$(1,600)
(-) Other expenses.....	\$ (700)
<b>(=) Operating Income.....</b>	<b>\$ 2,000</b>
(+) Financial revenues.....	\$ 800
(-) Financial expenses.....	\$ (600)
<b>(=) Income before taxes.....</b>	<b>\$ 2,200</b>
(-) Tax expense.....	\$ (396)
<b>(=) Net income.....</b>	<b>\$ 1,804</b>

**Earnings per share (in dollars).....\$ 3.61**  
(500,000 common shares outstanding)

The Matching Concept requires that costs should always be presented against revenues *in the same financial year*. With other words: *we always have to determine the profits related to sales*. As a consequence the production costs of goods that have not been sold in the current financial year *should not be presented as costs*. This is the reason for using the line “change in inventories”. First we present all production costs (material, personnel, depreciation) against revenues but after that we make a correction with “change in inventories”, thus we obtain the costs related to sales.

In this form, the line *Net Sales* is identical with that of the sales approach. *Change in inventories* is the line that corrects the total production costs to the costs related to sales. It can be either positive or negative:

- ⇒ If the company sold less products in the current financial year than it produced (a part of the products manufactured remained in stock as ending inventory), the change in inventories will be POSITIVE (the presented costs will be lower, thus the presented profits will be higher).
- ⇒ If the sales of the current financial year exceeded the level of production (the company sold all products manufactured in the current year plus inventories remained from the previous years), the change in inventories will be NEGATIVE (the presented costs will be higher, which reduces the company's profits).

*Other revenues and other expenses from operations* are identical with those explained within the sales approach.

*Production materials and external services* embrace the cost of raw materials used in the production process, plus the expenses of all external services (rents, fees paid for electricity, water, heating, legal and financial services [lawyer, accountant], education and training of the employees etc.).

*Personnel expenses* include the wages and salaries and the extra benefits for employees, plus the related contributions:

- ⇒ *Wages, salaries*: The gross wages and salaries of the employees that are related to the current financial year.
- ⇒ *Contributions*: There are different types of contributions that the employer (company) has to pay in addition to the salaries. These contributions are usually calculated based on the gross salaries. Different types of contributions are applied in all countries, the mostly known of which is the *social security contribution*.
- ⇒ *Other payments to workers*: Extra benefits or services to the employees that are not part of the gross salaries (luncheon voucher, clothing money etc.)

*Depreciation expense* contains the expense related to the physical deterioration of fixed assets. Based on the different depreciation methods, *the expense for the current financial year must be determined*.

The two approaches only differ in the computation of operating income. As a consequence, the content and the calculation of the further lines of the income statement with a *production approach* are identical to the lines of the statement prepared with the *sales approach*.

### III. Exercises

The following exercises illustrate some practical problems related to the income statement.

**Exercise 1.**

During the accounting period, the following costs were incurred by the firm (in USD):

<b>Cost type</b>	<b>Direct*</b>	<b>Indirect</b>	<b>TOTAL</b>
Material	25 000	5 000	30 000
Personnel	14 000	4 000	18 000
Depreciation	5 000	1 000	6 000
<b>TOTAL</b>	<b>44 000</b>	<b>10 000</b>	<b>54 000</b>

\* directly related to the production of finished products

**Additional information:**

- In the current period, 10 000 units of finished products were produced, while 8 000 units were sold at a selling price of 7 USD per unit plus VAT.
- The sum of other revenues was 2 800 USD, other expenses were in total 1 600 USD.

**Required:** Determine the operating profit applying the sales approach and the production approach.

**Exercise 2.** The following information is available about the company's assets and liabilities on 31 December:

- the company possesses a package of corporate bonds that were issued and purchased by the firm on 1 October. The package's face value is \$ 8,000. The interest rate is 12%.
- The company has a long term-debt of \$ 12,000, which was lent by a bank on 1 May this year. Interest is paid yearly. The interest rate is 10% (simple interest).

What is the effect of this transaction on financial revenues and on financial expenses?

**Exercise 3.** The company has borrowed \$10,000 from a bank at an interest rate of 12%. The payback will be done in the form of annuity. How much is the amount of financial expenses for the first financial year, if the loan was received on 1 July and will be paid back within 2 years, quarterly?

**Exercise 4.** The company put \$200,000 on its bank account on 1 March. The annual interest rate is 10% (*compound interest*). On 1 October, they withdrew \$30,000 from the account. The remaining sum has been left on the account until the end of the year. What will be presented in the income statement as financial revenues in the first financial year?

**Exercise 5.**

The company's selected information *for the year 2020* can be seen below:

**Sales:**

	<b>Product "A"</b>	<b>Product "B"</b>
Quantity sold	12 000 units	6 000 units
Average manufacturing cost	20 EUR / unit	4 EUR / unit
Selling price	35 EUR / unit + VAT	8 EUR / unit + VAT
Sales return	20%	–
Allowance	–	10%

**Operating expenses:**Selling expenses:

- ⇒ storage of products 8 000 EUR
- ⇒ packaging, labelling 3 000 EUR
- ⇒ advertising 14 000 EUR

Administrative expenses:

- ⇒ salaries of administrative employees 8 000 EUR
- ⇒ social security contribution 27%
- ⇒ office supplies 2 400 EUR

General expenses:

- ⇒ electricity, heating 7 900 EUR
- ⇒ rental fees 4 400 EUR
- ⇒ depreciation:

	Office buildings	Office equipment
Initial cost	100 000 EUR	8 000 EUR
Estimated residual value	40 000 EUR	2 000 EUR
Useful life	50 years	5 years
Method	Straight-line	Sum-of-the-years-digits
Date of purchase	1 July 2018	30 September 2020

**Additional information:**

- ⇒ The company sold one of its manufacturing machines for 5 000 EUR + VAT. The initial cost of the asset was originally 7 000 EUR, the accumulated depreciation until the day of selling was 3 500 EUR.
- ⇒ Securities were bought on the stock market for 4 100 EUR, two months later they were sold for 5 400 EUR.
- ⇒ The company opened a long-term bank deposit on 15 May. The value of the deposit is 4 000 EUR, the interest rate is 9%.
- ⇒ 20 000 EUR was borrowed from a partner company on 1 September. The term of the debt is 4 years, the interest rate is 12%.
- ⇒ The corporate income tax rate is 10%.

**Required:** Based on the information above, prepare the company's Income Statement for the year 2020.

**Income Statement, Year Ended 31 December 2020**

Net Sales	
Cost of Sales	
<b>Gross Profit</b>	
Operating Expenses	
Other Revenues	
Other Expenses	
<b>Operating Profit</b>	
Financial Revenues	
Financial Expenses	
<b>Profit Before Tax</b>	
Tax expense (10%)	
<b>Net profit</b>	

**Exercise 6.**

The following information is available about a manufacturing company in 2020:

- ⇒ The beginning inventory of finished products was 1 400 units at 28 EUR / unit.
- ⇒ During Year 2020, 10 200 units of finished product were manufactured at an average manufacturing cost of 30 EUR / unit.
- ⇒ For inventory costing the FIFO method is used.
- ⇒ 8 200 units of the products were sold at 50 EUR / unit + VAT. Because of prompt payment, 5% sales discount was given to the customer.
- ⇒ The expenses of production materials and external services were 98 000 EUR.
- ⇒ Personnel costs for the year:
  - Wages, salaries 164 000 EUR
  - Social security 44 280 EUR
- ⇒ The fixed assets' initial cost was 88 000 EUR, the expectable residual value is 12 000 EUR. When determining the depreciation cost, an average straight-line rate of 8% is used.
- ⇒ During the year, a production equipment was sold at 3 600 EUR, its book value was 3 900 EUR.
- ⇒ Gains on the sale of securities were altogether 300 EUR.
- ⇒ The company borrowed 18 000 EUR from its bank on 1 August. The term is 5 years, the interest rate is 10%.
- ⇒ The corporate income tax rate is 10%.

**Required:** Prepare the company's income statement with the production cost approach.

**Income Statement, Year Ended 31 December 2020**

Net Sales	
Change in inventories	
Other income	
Production materials and external services	
Personnel expenses	
Depreciation costs	
Other expenses	
<b>Operating Profit</b>	
Financial Revenues	
Financial Expenses	
<b>Profit Before Tax</b>	
Tax expense (10%)	
<b>Net profit</b>	



### **Check your knowledge**

Answer the following questions:

1. What is the role of an income statement?
2. What does the sales revenue contain? How do sales returns, allowances, sales discounts and excise taxes affect sales revenue?
3. What does cost of sales mean?
4. What is meant by operating expenses? Give some examples.
5. Give examples of other revenues and other expenses.
6. What are the most typical elements of financial revenues and financial expenses?
7. How does the purchase of bonds affect financial revenues/expenses?
8. How should EPS be calculated? What does it mean?
9. Define material, personnel and depreciation expenses.
10. What is the role of the line 'change in inventories' in the income statement?

### **Test questions**

Select the correct answer(s).

1. Sales revenue includes
  - a) the selling price of inventories sold
  - b) the selling price of services sold
  - c) the selling price of tangible assets sold
  - d) value added tax
  - e) sales discounts and sales returns
2. Examples of other revenues can be
  - a) the selling price of services sold
  - b) gain on sale of securities
  - c) gain on sale of fixed assets
  - d) interest received
  - e) grants received
3. Examples of other expenses can be
  - a) loss on sale of fixed assets
  - b) interests paid
  - c) dividends paid
  - d) material costs
  - e) wages and salaries
4. Operating expenses typically include
  - a) the direct manufacturing cost of products sold
  - b) administrative expenses
  - c) general expenses
  - d) losses on selling securities
  - e) dividends paid

5. Which of the following items should be presented among financial revenues?
- a) interest income
  - b) gains on selling tangible assets
  - c) grants received
  - d) dividends received
  - e) gain on sale of securities
6. Which of the following should be presented as financial expenses?
- a) dividends paid
  - b) loss on sale of securities
  - c) loss on foreign currency items
  - d) interests paid
  - e) depreciation expense
7. Earnings per share (EPS) is calculated as
- a) Sales revenue / number of shares
  - b) Operating profit / number of shares
  - c) Profit before tax / number of shares
  - d) Net profit / number of shares
  - e) Dividends / number of shares
8. Select the right statement(s).
- a) The operating profit is the difference between sales revenue and operating expenses.
  - b) The operating profit is the difference between the gross margin and the operating expenses, corrected with other revenues and other expenses.
  - c) The operating profit is the difference between all revenues and all expenses.
  - d) The net profit is the difference between all revenues and all expenses.
9. Material expenses may include
- a) the purchase cost of materials used
  - b) wages and salaries
  - c) contributions related to wages (i.e. social security)
  - d) the fee paid to an external consultant
  - e) the monthly electricity bill
10. Personnel expenses may include
- a) cost of fuel
  - b) wages and salaries
  - c) salary-related contributions (i.e. social security)
  - d) fee paid to an external consultant
  - e) rental fee
11. If the company produced 5000 units of finished products and sold 6000 units in the current year, the number presented as 'change in inventories' will be
- a) positive
  - b) zero
  - c) negative
  - d) it is not possible to sell 6000 units

12. Select the correct equation(s).

- a)  $\text{Cost of sales} + \text{Operating expenses} = \text{Material expenses} + \text{Personnel expenses} + \text{Depreciation expense}$
- b)  $\text{Cost of sales} + \text{Operating expenses} = \text{Material expenses} + \text{Personnel expenses} + \text{Depreciation expense} + \text{Change in inventories}$
- c)  $\text{Cost of sales} + \text{Operating expenses} = \text{Material expenses} + \text{Personnel expenses} + \text{Depreciation expense} - \text{Change in inventories}$
- d)  $\text{Sales revenue} - \text{Cost of sales} - \text{Operating expenses} = \text{Sales revenue} - \text{Material expense} - \text{Personnel expense} - \text{Depreciation expense} + \text{Change in inventories}$

## **Chapter 5**

### **Deferrals and accruals**

This chapter discusses the technical items in the balance sheet called as *deferrals and accruals*.

Economic actors have to apply the Matching Concept and the Realization Concept, which say that the expenses and the revenues should be presented in the accounting period when they were incurred. In some cases, the period which the expenses and revenues belong to is not identical with the period when they were really paid or received in cash. Deferrals and accruals are tools of resolving this problem.

## I. Deferrals

A *deferral* is a delay of the recognition of an expense already paid or of a revenue already received. In this case, the expense/revenue has been recorded in the current financial year (based on an accounting document such as an invoice), however, it belongs to the following year(s). Therefore at the end of the year, an *adjusting entry* is recorded: the corresponding amount is deducted from expenses/revenues (it will not appear in the income statement), and will be presented as a deferral in the balance sheet. Deferrals can be divided into two groups:

- *Prepaid expenses*: the best examples of this are costs or fees paid in advance such as rental fee, subscription fee etc. The part of this expense that belongs to the next year should not be presented as an expense in the income statement but as a deferral in the balance sheet (*among Current assets*).

**Example 1.** On 1 December 2019, our company paid the 3-month rental fee of its downtown office in advance for December, January and February. The amount paid was \$ 3,300. This transaction is presented in the annual report in the following way:

Expense of Year 2019 = \$ 3,300 / 3 months \* 1 month = \$ 1,100  
(in the income statement)

Prepaid expense (becomes expense in Year 2020) =  
= \$ 3,300 / 3 months \* 2 months = \$ 2,200 (in the balance sheet)

- *Unearned revenues*: revenues that have already been recorded in the current year but (partly) belong to future financial years should not be presented as revenues but as a deferral on the right side of the balance sheet (*among Current liabilities*). In order to illustrate it we should see the previous example from the other party's point of view:

**Example 2.** One of our offices is rented by a partner company. We collected the \$ 1,800 rental fee for the next 3 months on 1 December 2019. This event should be presented in the annual report in the following way:

Revenue of Year 2019 = \$ 1,800 / 3 months \* 1 month = \$ 600  
(in the income statement)

Unearned revenue (becomes a revenue in Year 2020) =  
= \$ 1,800 / 3 months \* 2 months = \$ 1,200 (in the balance sheet)

## II. Accruals

An accrual is an expense/revenue that belongs to the current year, but has not been recorded until the end of the year because of the lack of accounting document (the invoice will only be produced in the following year). However, when the firm is preparing the annual report (usually a few months after the current year), the accounting document is already available, therefore an *adjusting entry* is recorded for the last day of the year: the item is added to expenses/revenues, and at the same time, an accrual is presented in the balance sheet. The two types of accruals are:

- *Accrued expenses*: expenses that will only be invoiced in the following year but should be presented as current year's expense.

**Example 3.** The company received the telephone bill for December 2019 (\$100) on 7 January 2020. This expense should be presented in the annual report as:

Expense of Year 2019 = \$ 100  
(in the income statement)

Accrued expense (among current liabilities) = \$ 100  
(in the balance sheet)

- *Accrued revenues*: revenues that will be received in the following year but should be presented in the current year's report.

**Example 4.** The company sent an invoice about a \$ 300 consultancy fee to one of its clients on 14 January 2020, which involves last year's consulting services. This event should be presented in the 2019 annual report as:

Accrued revenue (among current assets) = \$ 300  
(in the balance sheet)

Revenue for Year 2019 = \$ 300  
(in the income statement)

## III. The practical application of deferrals and accruals

The different types of deferrals and accruals are presented on the left side or on the right side of the balance sheet, based on their effect on the current year's profits. The types that make an increase in profits (prepaid expenses and accrued revenues) are presented on the left side of the balance sheet, among current assets. The types that make a decrease in profits (unearned revenues and accrued expenses) are presented on the right side, among current liabilities. The following example illustrates all types of deferrals and accruals.

**Exercise**

Determine the deferral/accrual to be presented in the balance sheet for 31 December 2019 in connection with the following transactions:

- a) The company paid the subscription fee of a journal for year 2020 (80 USD) in advance. The invoice was received on 18 December 2019.
- b) The firm produced an invoice about consulting services rendered to a customer in 2019 (in the value of 3 200 USD). The date of the invoice is 8 January 2020.
- c) An invoice was received on 5 January 2020, which is a 40 USD telephone bill for December 2019.
- d) The company agreed with a customer to render a service in January 2020. However, the 580 USD invoice was produced in advance, on 24 December 2019.
- e) The company granted a loan of 4 000 USD to a partner company on 1 September 2019 with an interest rate of 15%. The loan will be repaid during 4 years, with a 1 000 USD capital redemption on 1 September every year plus interest.
- f) A 10 000 USD bank loan was received on March 31 2019. The term is 5 years, the interest rate is 12%, a constant 2 000 USD instalment plus interest must be paid on 31 March every year.

**Check your knowledge**

Answer the following questions.

1. What is the reason for using deferrals and accruals in the balance sheet?
2. Define prepaid expenses. Give an example.
3. Define accrued expenses. Give an example.
4. Define accrued revenues. Give an example.
5. Define unearned revenues. Give an example.
6. Which category of the balance sheet (current assets or current liabilities) contains
  - prepaid expenses,
  - accrued expenses,
  - accrued revenues,
  - unearned revenues?

**Test questions**

Select the correct answer(s).

1. Select the right statement(s).
  - a) Prepaid expenses and accrued revenues are presented among Current assets.
  - b) Accrued revenues and accrued expenses are presented among Current liabilities.
  - c) Accrued revenues are Assets, while unearned revenues are Liabilities in the balance sheet.
  - d) Both accrued revenues and unearned revenues are Assets in the balance sheet.
2. Which of the following deferrals and accruals increase the current year's profits?
  - a) Prepaid expense
  - b) Accrued expense
  - c) Accrued revenue
  - d) Unearned revenue

3. Which of the following deferrals and accruals reduce the current year's profits?
- a) Accrued expense
  - b) Prepaid expense
  - c) Unearned revenue
  - d) Accrued revenue
4. Which of the following accounting principles is the basis for recording deferrals and accruals?
- a) money measurement
  - b) going concern
  - c) matching
  - d) materiality
5. Which of the following are presented among Current assets?
- a) prepaid expenses and accrued expenses
  - b) unearned revenues and accrued revenues
  - c) accrued expenses and unearned revenues
  - d) prepaid expenses and accrued revenues
6. Which of the following are presented among Current liabilities?
- a) accrued expenses and unearned revenues
  - b) prepaid expenses and accrued revenues
  - c) prepaid expenses and accrued expenses
  - d) unearned revenues and accrued revenues



## **Chapter 6**

### **The basics of book-keeping**

An annual report can only be prepared appropriately if the company thoroughly records all transactions in its book-keeping system. This chapter discusses the basics of book-keeping, covering the most important features of accounts, and the book-keeping tasks that are conducted during a financial year.

The knowledge acquired in this chapter will serve as a basis for the remaining chapters that deal with detailed book-keeping entries related to fixed assets, current assets, shareholders' equity and liabilities.

## I. The definition and the types of transactions

Several events may happen to a company during a financial year. Some of these events make an effect on the balance sheet and/or on the income statement. An example for this can be the receipt of a bank loan, which increases both cash & equivalents and liabilities. Other events (although they are important for the business) make no change in assets, shareholders equity, liabilities or revenues/expenses. An example can be a contract signed with a new customer, which itself does not have any effect on the financial statements. Book-keeping only concentrates on those events that result in a change in the company's assets, shareholders' equity, revenues or expenses. These events are called *transactions*. Based on their effect on the balance sheet, there are four basic types of transactions:

- *Change in the structure of assets:* this means that as a result of the transaction one asset increases and another asset decreases by the same amount. An example can be the purchase of raw materials for cash. In this case, inventories will increase and at the same time cash & equivalents will decrease. As a result of the transaction, the inner structure of assets changes but total assets as well as total shareholders' equity and liabilities will remain unchanged.
- *Change in the structure of shareholders' equity and liabilities:* this type of transaction affects the right side of the balance sheet, as one item of shareholders' equity and liabilities increases and another item of the same category decreases. This happens, for instance, when the company pays one of its accounts payable by a short-term bank loan. In this case, one liability (accounts payable) decreases, while another liability (short-term debt) increases. Only the inner structure of the balance sheet's right side will change, but total assets as well as total shareholders' equity and liabilities will remain unchanged.
- *Increase both in assets and in shareholders' equity and liabilities:* in this case the transaction results in an increase on both sides of the balance sheet. An example for this type of change is the purchase of merchandise goods with a 30-day deadline for payment. This transaction makes an increase in inventories and, at the same time an increase in liabilities, thus total assets as well as total shareholders' equity and liabilities will increase.
- *Decrease both in assets and in shareholders' equity and liabilities:* this is the opposite of the previous type of transaction, resulting in a decrease on both sides of the balance sheet. A typical example can be the settlement of an account payable by bank transfer, where a decrease in liabilities is followed by a decrease in cash & equivalents. As a result, total assets as well as total shareholders' equity and liabilities will decrease.

## II. The nature of accounts

The transactions completed by an enterprise during a specific period may cause increases and decreases in different asset, liability and owner's equity items. It is necessary to keep separate records for each item that appears in the balance sheet or in the income statement. The type of record used for the purpose of recording individual transactions is called an *account*. The simplest and most illustrative form of an account is a so-called T-account:

Title	
Left side <i>Debit</i>	Right side <i>Credit</i>

The left side of an account is always called *Debit*, while the right side is named as *Credit*. Both Debit and Credit can represent an increase and a decrease as well. It depends on whether the given account is an asset, a liability or an owner's equity account:

<b>DEBIT</b> may signify:	<b>CREDIT</b> may signify
➤ Increase in asset accounts	➤ Decrease in asset accounts
➤ Decrease in owner's equity accounts	➤ Increase in liability accounts
➤ Decrease in liability accounts	➤ Increase in owner's equity accounts

Asset, liability and owner's equity accounts together are called *balance sheet accounts*. The relationship between them can be illustrated based on the basic accounting equation (Assets=Equities):

Balance Sheet Accounts			
ASSETS		OWNER'S EQUITY	
Asset Accounts		Owner's Equity Accounts	
<i>Debit</i> for Increases	<i>Credit</i> for Decreases	<i>Debit</i> For Decreases	<i>Credit</i> for Increases
		LIABILITIES	
		Liability Accounts	
		<i>Debit</i> For Decreases	<i>Credit</i> for Increases

There are also accounts representing *revenues and expenses*. These are called *income statement accounts*. Based on the dual aspect, the debit and credit rules are the following:

### Income Statement Accounts

<i>Debit for decreases in owner's equity</i>		<i>Credit for increases in owner's equity</i>	
Expense Accounts		Revenue Accounts	
<i>Debit</i> for Increases	<i>Credit</i> for Decreases	<i>Debit</i> For Decreases	<i>Credit</i> for Increases

Both *Debit* and *Credit* sides can be summarized. Thus we obtain Total Debit and Total Credit sums of the account. Subtracting the smaller sum from the larger, we obtain the *balance of the account*. The balance can be a *debit balance* or a *credit balance*.

Check the following examples for asset, liability, owner's equity, revenue and expense accounts (Debit is abbreviated as "Dr.", while Credit is abbreviated as "Cr."):

<i>Dr.</i>	<b>Cash</b>	<i>Cr.</i>	<i>Dr.</i>	<b>Paid-in Capital</b>	<i>Cr.</i>
	2 000	2 500			40 000
	3 800				
	700				
Total	6 500	Total	0	Total	40 000
<b>Debit balance</b>	<b>4 000</b>			<b>Credit balance</b>	<b>40 000</b>

<i>Dr.</i>	<b>Long-term debt</b>	<i>Cr.</i>
	5 000	13 000
Total	5 000	Total
		<b>Credit balance</b>
		<b>8 000</b>

<i>Dr.</i>	<b>Cost of Sales</b>	<i>Cr.</i>	<i>Dr.</i>	<b>Sales Revenue</b>	<i>Cr.</i>
	22 000			3 000	45 000
	16 000				
Total	38 000	Total	0	Total	45 000
<b>Debit balance</b>	<b>38 000</b>			<b>Credit balance</b>	<b>42 000</b>

The balances of the balance sheet accounts are carried forward from year to year. They are sometimes referred to as *real accounts*. Income statement accounts are periodically closed. They are, therefore called *temporary accounts* or *nominal accounts*.

It can be stated that in usual situation the increases of an account are larger than the decreases. This means that accounts normally have a positive balance. As a result, the normal balances of the different types of accounts are the following:

- *asset accounts*: debit
- *shareholders' equity accounts*: credit
- *liability accounts*: credit
- *revenue accounts*: credit
- *expense accounts*: debit

The accounts used by an enterprise are often numbered and listed in the *chart of accounts*. The chart of accounts is specifically designed to the company's characteristics, thus no general numbering of accounts exists on the international level.

### III. Accounting tasks during a financial year

In every accounting period, the following tasks are done:

#### III. 1. Opening of Accounts

The balance sheet accounts that have balances at the beginning of the year must be opened. This means that each of the beginning balance is recorded on the appropriate side of the account. On T-accounts, the beginning balance is simply written on the appropriate side next to a letter "B", which refers to "Balance". For example:

Manufacturing machine		Paid-in Capital	
B:	500,000	B:	300,000
		Accounts payable	
		B:	200,000

#### III. 2. Recording the current year's transactions

In the case of every transaction, the first task is to identify which accounts are affected. Then, the transaction is recorded on the accounts affected.

There are two traditional ways of recording transactions. One of these methods is called *posting*. This means that the effects of the transaction (expressed in money) are written on the T-accounts affected, with reference to the date or the transaction number.

**Example.** At the beginning of the period, the company had a beginning balance of 500,000 USD of raw materials and a beginning balance of 300,000 USD on its bank account. On 31 March, they purchased further raw materials for 150,000 USD with a 10-day deadline for payment. On 7 April, they settled the account by bank transfer. Record the above transactions on T-accounts.

**Solution:**

The first step is to put the beginning balances on the Raw materials account and on the Bank account:

Raw materials		Bank account	
B:	500,000	B:	300,000

After that, the first transaction (purchase of raw materials *on credit*, which means that the supplier offered a deadline for later payment) should be recorded for 31 March. This transaction results in an increase in raw materials and an increase in accounts payable:

Raw materials		Bank account	
B:	500,000	B:	300,000
31 Mar/	150,000		

Accounts payable	
	31Mar/ 150,000

Then, the second transaction (payment to the supplier on 7 April) is recorded. As a result, the balance disappears from the accounts payable account, and the bank account's balance decreases:

Raw materials		Bank account	
B:	500,000	B:	300,000
31 Mar/	150,000	7Apr/	150,000

Accounts payable	
7Apr/ 150,000	31Mar/ 150,000

If the dates of the transactions are not important for the solution, it is also acceptable to write the transaction number (1, 2,...) instead of the date. In this example, it would look like this:

Raw materials		Bank account	
B:	500,000	B:	300,000
1/	150,000	2/	150,000

Accounts payable	
2/ 150,000	1/ 150,000

After recording all transactions, the actual balance of the accounts will serve as important information in the balance sheet. In this example, the debit balance of the raw materials account shows the ending inventory for the period (500,000 beginning value plus 150,000 purchase results in an inventory of 650,000 at the end of the period).

The bank account has a debit balance of 150,000 (300,000 beginning balance minus the bank transfer of 150,000) that shows the remaining amount of money available for the company. Finally, the accounts payable account has no balance at the end of the period, meaning that the company has no liability against the supplier (the liability generated by the purchase has been settled before the end of the period).

The other traditional type of recording transactions is *journalizing*. In this case the transactions are written into a *journal* in a chronological order. The journal is a document where for each transaction, the date, the debit and the credit account, and also the debit and the credit value is presented with a short explanation. The transactions of the previous example would be journalized as follows:

JOURNAL													Page 1					
Date		Description	Debit							Credit								
31	Mar	Raw materials		1	5	0	0	0	0									
		Accounts payable									1	5	0	0	0	0		
		Purchase of raw materials																
7	Apr	Accounts payable		1	5	0	0	0	0									
		Bank account									1	5	0	0	0	0		
		Settlement of the account																

The biggest advantage of journalizing is that it is usually easier to understand the transactions in a chronological order, but determining the balances of particular accounts is more difficult.

### III. 3. Adjusting entries at the end of the year

There are some events that affect accounts but have not been recorded during the financial year. In order to get a real picture of the current year's operations, these entries must be recorded at the end of the year. *Adjusting entries modify the company's profits.* The most important types of adjusting entries are:

- *Deferrals and Accruals:* revenues and expenses that have already been recorded but belong to the next financial year(s) must be deferred (prepaid expenses, unearned revenues), while revenues and expenses that will occur only in the next year but should be presented in the current year must be accrued (accrued expenses, accrued revenues). The entry consists of an increase or decrease in revenues or in expenses and of an increase in current assets or current liabilities, as discussed in Chapter 5.

- *Depreciation expense*: the depreciation of assets is recorded at the end of the financial year. The entry contains an increase in depreciation expense and an increase in accumulated depreciation of assets.
- *Re-classification of assets and liabilities*: the items of fixed assets and long-term liabilities that mature within one year must be transferred to current assets/current liabilities.

### III. 4. Closing temporary accounts

After all adjustments, the revenue and expense accounts are closed (they are *temporary accounts*, attached to a given financial year) and their balances are transferred to the Net profit account. The net profit account will have a credit balance in case of profit and a debit balance in case of loss.

### III. 5. Preparing the trial balance and the balance sheet

A trial balance is a list of accounts that have balances at the end of the year. It is a tool that helps the accountant to check if all book-keeping entries have been recorded correctly. If there is no mistake in the book-keeping system, then the debit balances and the credit balances will be equal:

**TRIAL BALANCE**

<b>No.</b>	<b>Name of the account</b>	<b>Debit</b>						<b>Credit</b>					
	Machines	1	1	0	0	0	0						
	Cash	1	9	0	0	0	0						
	Paid-in Capital							1	5	0	0	0	0
	Net profit							1	0	0	0	0	0
	Accounts payable								5	0	0	0	0
	<b>TOTAL DEBITS AND CREDITS</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

The trial balance is the basis of the balance sheet. The different lines of the balance sheet are filled in based on the account balances presented in the trial balance. Using the pre-closing balances of revenue and expense accounts, the income statement can also be prepared.



### Check your knowledge

Answer the following questions:

1. What are the four main types of transactions? Give an example of each.
2. What is meant by balance sheet accounts?
3. What are the income statement accounts?
4. Which side (Debit or Credit) contains the normal balance in case of
  - asset accounts,
  - shareholders' equity accounts,
  - liability accounts,
  - revenue accounts,
  - expense accounts?Give an example of each type.
5. Define the expressions *journalizing* and *posting*.
6. What are the most typical year-end adjusting entries?

### Test questions

Select the correct answer(s).

1. Which of the following transactions increase both Assets and Liabilities?
  - f) settlement of a supplier's account by a promissory note
  - g) purchase of raw materials for cash
  - h) increasing the capital from retained earnings
  - i) receipt of a loan from another company
  - j) purchase of goods with a 10-day deadline for payment
2. Which of the following transactions do *not* affect Liabilities?
  - a) withdrawal of cash from the company's bank account
  - b) payment to a supplier by bank transfer
  - c) settlement of debt
  - d) granting a loan to another company
  - e) receipt of a bank loan
3. Which of the following are balance sheet accounts?
  - a) interest income
  - b) gain on sale of securities
  - c) raw materials
  - d) capital surplus
  - e) notes payable
4. Which of the following are income statement accounts?
  - a) cost of sales
  - b) buildings
  - c) retained earnings
  - d) loss on sale of tangible assets
  - e) interest expense

5. Select the accounts that normally have a Debit balance.
  - a) raw materials
  - b) accounts payable
  - c) cost of sales
  - d) interest income
  - e) share capital
6. Select the accounts that normally have a Credit balance.
  - a) long-term debt
  - b) gain on sale of fixed assets
  - c) exchange losses
  - d) accounts receivable
  - e) sales revenue
7. Select the accounts that can have either a Debit or a Credit balance.
  - a) finished products
  - b) net profit for the year
  - c) cash
  - d) share capital
  - e) retained earnings
8. Which of the following steps are year-end adjustments?
  - a) opening of accounts
  - b) recording the depreciation expense
  - c) re-classification of assets and liabilities
  - d) recording the payments to suppliers
  - e) deferrals and accruals

## **Chapter 7**

### **Accounting for fixed assets**

This chapter introduces the most typical transactions that affect fixed assets, covering the problems related to intangible and tangible assets and also to long-term investments. The book-keeping entries arising due to the transactions will be explained with illustrative examples.

## I. Intangible and tangible assets

In connection with the company's intangible assets (i.e. software, tradable rights) and tangible assets (i.e. buildings, machines, equipment), the most typical transactions are the following:

- *purchasing (buying) an asset*
- *depreciation*
- *sale of an asset*
- *disposal of an asset*

### I. 1. Purchasing (buying) intangible and tangible assets

When the company buys a long-lived asset, two items of the balance sheet are affected:

- the increase in the asset's value is debited on the appropriate asset account (i.e. *production equipment, buildings or software* account),
- the purchase cost of the asset is presented as a decrease in cash or as an increase in liabilities (money payable to the supplier).

The purchase transaction requires the following book-keeping entry:

Dr. Equipment (Buildings, Software, etc.)  
Cr. Cash

*or:*

Dr. Equipment (Buildings, Software, etc.)  
Cr. Accounts payable

### I. 2. Depreciation

Depreciation is *an adjusting entry at the end of the year*. The current year's depreciation must be presented as an expense (in the income statement), and as a decrease in the asset's book value. This decrease in book value is not directly recorded in the original asset account, instead, a *contra-asset account* is used showing the offset against the initial cost. The contra-asset account will always have a Credit balance (a negative balance, reducing the asset's value). The depreciation for the current period is recorded with the following entry:

Dr. Depreciation expense  
Cr. Accumulated depreciation of assets


Using this contra-asset account, the asset's actual book value will be expressed by two accounts:

Depreciation Expense	
\$ 4,000 CURRENT YEAR'S DEPRECIATION (Debit balance)	

Equipment	Accumulated depreciation
\$ 24,000 INITIAL COST  (Debit balance)	\$ 4,000 ACCUMULATED DEPRECIATION (Credit balance)



**ACTUAL BOOK VALUE: \$ 20,000**  
**(aggregate balance)**

### I. 3. Sale of intangibles and tangibles

If the company sells one of its long-lived assets, a complex entry must be recorded:

- the selling price of the asset is presented as an increase in receivables or in cash,
- the book value of the asset must be removed from the company's books by crediting the asset account and debiting the accumulated depreciation account,
- the difference between the selling price and the book value should be presented as a *gain on sale of fixed assets* (among *Other revenues*) or as a *loss on sale of fixed assets* (among *Other expenses*).

The selling transaction requires an entry with four accounts. Depending on whether the company realizes a gain or a loss, one of the following entries should be recorded:

Dr. Accounts receivable (or Cash)  
 Dr. Accumulated depreciation of assets  
     Cr. Intangible (tangible) assets  
     Cr. Gain on sale of fixed assets (*Other Revenues*)

or:

Dr. Accounts receivable (or Cash)  
 Dr. Accumulated depreciation of assets  
 Dr. Loss on sale of fixed assets (*Other Expenses*)  
     Cr. Intangible (tangible) assets

### I. 4. Disposal of intangibles and tangibles

Assets that are no longer useful for the company's operations may be disposed (discarded). A typical example for this is an asset that has been fully depreciated (and thus reached its residual value).

The disposal of the asset means that the book value is removed from the books and is presented as a *loss on disposal of fixed assets* (among *Other expenses*). The entry to be recorded is:

Dr. Loss on disposal of fixed assets (*Other expenses*)  
Dr. Accumulated depreciation of assets  
    Cr. Intangible (tangible) assets

## II. Investments

Under “Investments”, different financial instruments are presented in the balance sheet, which may involve items as follows:

- *shares bought for long-term investment*
- *bonds with a maturity of more than one year*
- *long-term receivables (i.e. loan granted to another company or to a private person) or long-term (fixed) bank deposits*

*In the following sub-chapters, we will only concentrate on the basic book-keeping problems. In order to avoid any complicated valuation problems, in all cases we assume that there are no significant effects originating from the changes in fair value, from the changes in the time value of money, or from the difference between the nominal interest rate and the effective interest rate.*

### II. 1. Shares

In connection with shares, the most typical transactions are: buying and selling, dividends and the year-end re-classification.

#### II. 1. 1. Purchase of shares

In case of buying shares, the increase in the shares' value is debited to the *Shares* account, while the purchase price is credited to the *Accounts payable* account (increase in liabilities) or to the *Cash account* (decrease in cash):

Dr. Investments (shares)  
    Cr. Accounts payable (or Cash)

#### II. 1. 2. Selling shares

If the firm sells its shares, three items will be affected:

- the selling price must be presented as an increase in receivables or in cash,
- the book value of the shares will be removed from the books,
- depending on the difference between the selling price and the book value, a *gain* or a *loss on sale of securities* will be recorded. The gain affects financial revenues, while the loss is an element of financial expenses.

If the selling price is higher than the book value, the necessary entry is:

Dr. Accounts receivable (or Cash)  
Cr. Investments (shares)  
Cr. Gain on sale of securities (Fin. Rev.)

In the opposite case, the entry is modified as follows:

Dr. Accounts receivable (or Cash)  
Dr. Loss on sale of securities (Fin. Exp.)  
Cr. Investments (shares)

### **II. 1. 3. Dividends received**

Dividends received in cash are presented as an increase in cash and as an increase in dividend income:

Dr. Cash  
Cr. Dividend income (Fin.Rev.)

### **II. 1. 4. Re-classification of shares planned to be sold within one year**

The value of shares originally bought for long-term investment but planned to be sold in the following year must be transferred to Temporary investments (at the end of the year):

Dr. Temporary investments (shares)  
Cr. Investments (shares)

The following example illustrates the above discussed problems related to shares.

## **II. 2. Bonds**

Similarly to shares, the most typical transactions related to bonds are: purchasing and selling, and receiving the benefits on them (which, in this case is called *interest*).

### **II. 2. 1. Purchase of bonds**

To simplify the transactions, assume that the company buys newly issued bonds. The transaction is very similar to that of purchasing shares:

- the purchase price is debited to the *Bonds* account,
- the purchase price is presented as an increase of liabilities or as a decrease in cash.

Dr. Investments (bonds)  
Cr. Accounts payable (or Cash)

### II. 2. 2. Interest received during the year

The holder of the bond receives interest on a regular basis, at certain dates. The interest received is shown as an increase in *Cash* and as an increase in financial revenues (*Interest income account*):

Dr. Cash  
Cr. Interest income (Financial revenues)

### II. 2. 3. Accrual of time-proportionate interest

If the next interest payment day is in the following year, the proportionate interest affecting the current year's profits must be presented among the current year's revenues (this is required by the realization concept).

Dr. Accrued revenues  
Cr. Interest income (Financial revenues)

Then, at the beginning of the following year, the above entry should be reversed:

Dr. Interest income  
Cr. Accrued revenues

The negative interest income recorded at the beginning of the year (as a re-adjustment) will be offset by the positive interest income recorded on the next interest payment day during the year.

### II. 2. 4. Sale of bonds

The sale of bonds is similar to the sale of shares. Again, to simplify the case, assume that the company sells the bonds on an interest payment day, after receiving the due interest. This transaction requires one of the following two entries (depending on the difference between the selling price and the book value):

Dr. Accounts receivable (or cash)  
Cr. Investments (bonds)  
Cr. Gain on sale of securities (Financial revenues)  
*(if the selling price is higher than the book value)*

or:

Dr. Accounts receivable (or Cash)  
Dr. Loss on sale of securities (Financial expenses)  
Cr. Investments (bonds)  
*(if the selling price is lower than the book value)*



### II. 2. 5. Re-classification of bonds maturing within one year

The value of bonds that will mature in the following year must be transferred to temporary investments (under current assets).

Dr. Temporary investments (bonds)  
Cr. Investments (bonds)

The transactions discussed above are illustrated with the following example.

### II. 3. Long-term receivables (loans granted)

Besides buying securities (i.e. shares or bonds), a further opportunity for a company to realize benefits on its excess cash is to grant a long-term loan to another company or to a private person, ensuring a long-term fixed interest income.

The loan granted is presented as an increase in investments and as a decrease in cash (here the term *cash* will be used with the meaning cash & equivalents, so it refers to all liquid assets, also covering the bank account):

Dr. Investments (long-term receivables)  
Cr. Cash

When the interest is received from the debtor, it is shown as an increase in *Cash* and as an increase in *Interest income*:

Dr. Cash  
Cr. Interest income (Financial revenues)

If the next interest payment date is in the following year, the proportionate interest must be presented among the current year's financial revenues as an accrual:

Dr. Accrued revenues  
Cr. Interest income (Financial revenues)

As it was seen in the case of bonds, the year-end accrual should be reversed at the beginning of the following year:

Dr. Interest income  
Cr. Accrued revenues

Long-term loans are usually repaid in instalments. Therefore, the total amount of the loan can be divided into two parts:

- the instalments to be received in more than one year must be presented among investments,
- the instalments falling due within one year must be shown as a receivable.

At the end of the year, the instalments to be received in the following year must be transferred from investments to receivables:

Dr. Receivables  
Cr. Investments (long-term receivables)

Later, when the instalment is received, it is recorded as an increase in the company's cash and a decrease of receivables:

Dr. Cash  
Cr. Receivables

### III. Exercises

**Exercise 1.** The company's accounts related to tangible assets had the following opening balances at the beginning of the accounting period (in EURO):

Buildings	342 000	(debit)
Production equipment	15 700	(debit)
Office equipment	12 400	(debit)
Vehicles	36 500	(debit)
Accumulated depreciation of Tangibles	64 800	(credit)
Bank account	49 600	(debit)
Cash	6 500	(debit)

#### ***Transactions in the current period:***

- 1) New production equipment was bought for 8 000 EURO. The deadline for payment is 10 days.
- 2) One of the buildings was sold for 80 000 EURO. Its initial cost was 96 000 EURO, the accumulated depreciation recorded until the day of selling was 20 000 EURO. The firm offered a deadline of 20 days to the customer.
- 3) The purchase price of the equipment (Transaction No.1.) was paid by bank transfer.
- 4) A computer (presented among Office Equipment) was disposed. Its initial cost was 800 EURO, the accumulated depreciation is 680 EURO.
- 5) The selling price of the building (Transaction No.2.) was received by bank transfer.
- 6) A new vehicle was bought for 4 000 EURO. The purchase price was paid in cash.
- 7) At the end of the period, the depreciation of Tangible assets was recorded:
  - Depreciation of buildings: 8 200 EURO
  - Depreciation of production equipment: 1 800 EURO
  - Depreciation of office equipment: 1 150 EURO
  - Depreciation of vehicles: 4 100 EURO

#### **Required:**

- a) Record the above transactions on T-accounts.
- b) Determine the value of Tangible assets to be presented in the balance sheet. (Assume that there was no change in the assets' market value.)
- c) Determine the effect of the transactions on the company's Operating profit.

**Exercise 2.** The firm purchased 500 units of shares for long-term investment. The total purchase price was 60 000 EUR (paid in cash). During the year, 200 units were sold for 140 EURO/unit (for cash). Later, the company received 8 EUR/unit dividends on the remaining shares. Record the above transactions in connection with the shares.

**Exercise 3.** The company bought 300 units of newly issued, 5-year government bonds on 1 July for cash. The issue price was identical with the bonds' face value, 100 EUR/unit. The interest rate is 12%, and interest is paid quarterly, on the first day of each quarter (by bank transfer), while the face value will be paid back by the issuer at the maturity date. On 1 October, half of the bonds were sold for 17 000 EUR cash. Record the current year's transactions in connection with the bonds, and then determine the effect of the transactions on the current year's profits.

**Exercise 4.** The firm granted a loan of 10 000 EURO to a partner company on 1 September 2019. The term of the loan is 5 years, the redemption will be done semi-annually, in equal instalments plus 15% interest. Record the transactions related to the loan in 2019 and in 2020.

### Check your knowledge

Answer the following questions:

1. Explain and give the necessary book keeping entries of
  - buying tangible assets,
  - recording depreciation,
  - selling tangible assets,
  - disposing tangible assets.
2. Explain and give the necessary book keeping entries of
  - buying shares,
  - receipt of dividends,
  - selling shares,
  - re-classification of shares.
3. What are the book keeping entries for the following transactions?
  - buying bonds,
  - year-end accrual of interest,
  - receipt of interest,
  - selling bonds,
  - re-classification of bonds.
4. What are the accounting tasks to be completed for long-term loans granted? Give the necessary book-keeping entries.

## **Chapter 8**

### **Accounting for current assets**

This chapter contains the explanation of book-keeping entries that should be recorded in connection with transactions affecting current assets. The discussion will include *inventories, receivables, temporary investments and cash (and equivalents)*.

## I. Inventories

Among inventories, two types should be discussed: *raw materials* (inventories purchased in order to be used in production) and *merchandise goods* (inventories purchased for resale).

### I. 1. Raw materials

The first typical transaction is when raw materials are purchased. In this case the increase in materials is debited to the *Raw materials* account, while at the same time, an increase in liabilities is presented on the *Accounts payable* account:

Dr. Raw materials  
Cr. Accounts payable

If the company pays the purchase price immediately in cash, then the entry is similar to the previous one, however, instead of accounts payable the *Cash* account is credited:

Dr. Raw materials  
Cr. Cash

In case the firm returns a part of the materials purchased to the supplier (for example, due to quality problems), or gets an allowance of the purchase price, the entry recorded at purchase should be reversed:

Dr. Accounts payable / Cash  
Cr. Raw materials

The main objection of buying materials is using them for the production of the company's products. When materials are used in order to produce finished products or to render services, their value becomes an *expense*:

Dr. Material expenses  
Cr. Raw materials

### I. 2. Merchandise goods

Similarly to the purchase of raw materials, the purchase of merchandise goods results in an increase in inventories (merchandise goods) and an increase in liabilities (accounts payable). If the price is paid in cash, then accounts payable will be substituted with the Cash account:

Dr. Merchandise goods  
Cr. Accounts payable / Cash

Returns to the supplier or allowances received should be recorded with a reversing entry (decrease in accounts payable/increase in cash and at the same time, a decrease in inventories):

Dr. Accounts payable / Cash  
Cr. Merchandise goods

Merchandise goods are purchased in order to sell them at a higher price and thus realize a positive profit. When merchandise goods are sold, two entries should be recorded:

- the selling price of the goods is presented as an increase in receivables or in cash and as an increase in *Sales revenue*:

Dr. Accounts receivable  
Cr. Sales revenue

- the purchase cost of the goods must be removed from the company's books and be shown as *cost of sales* (an expense against sales revenue).

Dr. Cost of sales  
Cr. Merchandise goods

It may also happen that the customer has problems with the shipment and therefore returns the goods to our company. This transaction results in the opposite of the entries recorded in the original sales transaction:

Dr. Sales Revenue  
Cr. Accounts receivable

Dr. Merchandise goods  
Cr. Cost of sales

Another possibility is that the customer would like to keep the goods shipped, but referring to poor quality or to other problems, it asks our company to give an allowance (a price reduction) on the goods. If the company offers an allowance for the customer then the sales revenue and the accounts receivable is reduced:

Dr. Sales Revenue  
Cr. Accounts receivable

Note that in this case (in contrast with the sales return) the values of *Cost of sales* and of *Merchandise goods* are not modified (the firm does not receive any goods back).

## II. Receivables

### II. 1. Accounts receivable

As it was discussed earlier, accounts receivable appear in the books when the company sells something, for example, merchandise goods to a customer. If the customer settles its

debt, an increase in the bank account and a decrease in accounts receivable is recorded (between companies, the default payment method is usually bank transfer):

Dr. Bank account  
Cr. Accounts receivable

If the account is settled in cash by the customer, then instead of the bank account, the *Cash* account is used:

Dr. Cash  
Cr. Accounts receivable

## II. 2. Short-term financing receivables (loans granted)

The transactions related to short-term loans granted to external parties are very similar to the events related to long-term receivables (*see: Investments*). The most important difference in book-keeping is that the *Short-term financing receivables* account is used instead of the *Investments (long-term receivables)* account. Another difference is that such transactions are usually finished within the same year, thus no year-end adjusting entries are needed.

*Similarly to long-term investments, in order to avoid complicated valuation problems, we assume that the effects of any changes in fair value or in the time value of money are insignificant, and the nominal interest rate is identical with the effective interest rate.*

## III. Temporary investments (marketable securities)

The typical transactions related to temporary investments are the same as in the case of *shares* and *bonds* bought for long-term investment (*see: Investments*). The only technical difference is that instead of the '*Investments*' account, the '*Temporary investments*' account is used. Beyond this, the content and the book-keeping entries of the related transactions, as well as the simplifying assumptions behind are the same.

## IV. Cash and equivalents

Increases and decreases in cash and equivalents are generated by a lot of transactions. Several examples could be seen in the preceding chapters and also in this chapter (some examples: buying tangible assets, securities, raw materials or merchandise goods for cash, settling the accounts payable, granting a loan to another party etc.). Those simple transactions are discussed here that have not been mentioned earlier.

The first one is when the company withdraws money from its bank account. This transaction is a movement of money between the *Cash* (often called as *Petty cash*) account and the *Bank account*:

Dr. Cash  
Cr. Bank account

The opposite of the previous transaction is when the firm pays the excess cash (that is not needed for its everyday liquidity) into its bank account:

Dr. Bank account  
Cr. Cash

Doing so might be motivated by the fact that cash held does not generate any type of yield, while keeping the money in a bank account generates interest income, which is a component of financial revenues. The interest received from the bank is debited to the bank account and presented on the credit side of the *Interest income* account:

Dr. Bank account  
Cr. Interest income (Financial revenues)

## V. Exercises

**Exercise 1.** The opening balances of the company's selected accounts on 1 August are the following (in USD):

Raw materials	4 800	(1 000 kg)
Merchandise goods "A"	3 600	(300 units)
Merchandise goods "B"	10 000	(500 units)
Cash	8 400	
Bank account	14 600	

### **Transactions during August:**

- 1) The firm purchased 450 kg of raw materials for 5 USD/kg on credit.
- 2) 100 units of merchandise goods "A" were sold for 1 600 USD on credit.
- 3) The material supplier's account was settled by bank transfer.
- 4) 200 units of merchandise goods "B" were sold for 5 800 USD on credit.
- 5) 1 200 kg of raw materials were used in the production process. The firm applies the FIFO method for inventory costing.
- 6) The customer returned 10% of products "A".
- 7) A 5% allowance was offered to the customer of products "B".
- 8) The receivable originating from products "A" was received in cash.
- 9) The customer of products "B" settled the account by bank transfer.
- 10) 3 000 USD was paid into the bank account.

### **Required:**

- a) Record the above transactions in a journal.
- b) Determine the ending value of *inventories*.
- c) Illustrate the *Sales revenue* account and the *Cost of sales* account and determine the profit/loss originating from sales.



**Exercise 2.** The following incomplete information is available about the firm's selected accounts (in EURO):

Merchandise goods		Accounts payable	
1/ .....	3/ .....	2/ .....	1/ 80 000
Bank account		Accounts Receivable	
B: 140 000	2/ .....	3/ .....	4/ .....
4/ .....			
Sales Revenue		Cost of Sales	
	3/ 110 000	3/ .....	

**Required:**

- Fill in the missing amounts in the T-accounts.
- Give a short explanation of each transaction.
- Determine the profit generated due to the transactions.

**Example 3.** At the beginning of the period, the company has \$300,000 of Merchandise goods and \$520,000 of Cash.

**Required:**

- Open the necessary T-accounts,
- Put the beginning balances on the appropriate side and
- Record the following transactions:
  - The company sold 800 units of merchandise goods on credit at \$300 per unit. The Cost of Sales was \$200 per unit.
  - They received the selling price from the customer by bank transfer.
  - They withdrew half of the amount received from the bank account.
- Determine the balance of the following accounts after recording the above events: (do not forget to identify whether the balance is *Debit* or *Credit*)

**Merchandise goods:** .....

**Cash:** .....

**Accounts receivable:** .....

**Exercise 4.** The firm granted a 2 000 USD loan to one of its partner companies on 1 March. The term is 6 months, the parties agreed on a 15% interest rate. Repayment will be done in two instalments as follows:

- 1 June: 1 000 USD plus interest
- 1 September: 1 000 USD plus interest

Record all events in connection with the loan.

**Check your knowledge**

Answer the following questions:

1. What are the most typical transactions in connection with raw materials and merchandise goods? Explain their effect on the balance sheet and on the income statement and give the necessary book keeping entries.
2. Define the most important types of receivables that are presented in the balance sheet (accounts receivable, notes receivable, short-term loans granted). What are the necessary book-keeping entries for the transactions that affect these items?
3. What are the accounting tasks to be completed for temporary investments (marketable securities)? Give the necessary book-keeping entries.
4. How should the movements between cash and the bank account be recorded?
5. How should interest received be recorded?

## **Chapter 9**

### **Accounting for liabilities and shareholders' equity**

This chapter discusses transactions that result in changes on the right side of the balance sheet (in liabilities or in shareholders' equity). In case of liabilities, the emphasis is put on long-term and short-term debt and on accounts payable, while in case of shareholders' equity, changes in share capital and in reserves are explained and also the closing process is discussed.

## I. Liabilities

The most typical transactions affecting liabilities are connected to long-term and short term *debts, accounts payable* and *notes payable*.

*Just like in case of long-term and temporary investments, here we will make simplifying assumptions in order to avoid complicated valuation problems. These assumptions are: the effects of changes in fair value or in the time value of money are insignificant, and (where applicable) the nominal interest rate equals the effective interest rate.*

### I. 1. Long-term and short-term debt

If the company borrows money for long term, it should be presented as an increase in the bank account and as an increase in long-term liabilities (*Long-term debt*):

Dr. Bank account  
Cr. Long-term debt

In case of long-term loans, it is typical that the amount is paid back in instalments. Therefore, at the end of the year an adjustment is needed: the instalment falling due within one year should be removed from long-term liabilities and must be presented as a current liability:

Dr. Long-term debt  
Cr. Short-term debt

If the loan is originally received for short term then the amount received is an increase in the bank account and an increase in Current liabilities (*Short-term debt*):

Dr. Bank account  
Cr. Short-term debt

When the firm repays an instalment or the total amount of the loan, liabilities as well as the firm's bank account should be reduced:

Dr. Short-term debt  
Cr. Bank account

Furthermore, interest should be paid on the loan (usually together with the redemption instalments). Interests paid are presented as an increase in *interest expense* (which is an item among financial expenses), and as a decrease in the bank account:

Dr. Interest expense (Financial expenses)  
Cr. Bank account

Interest is an expense for a time interval, however, it is paid on certain dates. Based on the *matching concept*, the proportionate part of the interest that will only be paid in the following year but belongs to the current year should be presented among the current year's expenses:

Dr. Interest expense (Financial expenses)  
Cr. Accrued expenses

The accrual is then reversed at the beginning of the following year:

Dr. Accrued expenses  
Cr. Interest expense

Two examples will illustrate the above mentioned problems. The first example shows the case of long-term debt, while the second example concentrates on short-term debt.

## I. 2. Accounts payable

Accounts payable appear in the books when the company purchases any kind of assets (intangible or tangible assets, raw materials, merchandise goods, etc.). On the deadline, the company has to settle the account (in cash or by bank transfer, based on the means of payment agreed):

Dr. Accounts payable  
Cr. Bank account

or:

Dr. Accounts payable  
Cr. Cash

## II. Shareholders' Equity

Shareholders' equity involves the following items:

- the initial capital provided by the founders (the face value of the shares issued by the firm or paid in by the founders → *Share capital* or *Paid in capital*)
- the extra amount of money received at the issue of shares (difference between the issue price and the face value → *Capital surplus*)
- accumulated profits of former years (*Retained Earnings*)
- profits generated in the current financial year (*Net income for the year*)

### II. 1. Transactions affecting share capital and/or reserves

There are several possible sources from which a company can raise its capital. One of these is issuing new shares, which results in an increase in shareholders' equity. When the firm issues new shares, it receives money (the issue price) for them, which is usually higher than their face value. The total amount received is recorded as an increase in cash or in the bank account, and as an increase in two different items of shareholders' equity:

- the face value of the shares is shown as *share capital*,
- the difference between the issue price and the face value is presented as *capital surplus*

This is described by the following entry:

Dr. Cash  
    Cr. Share capital  
    Cr. Capital surplus

Issuing new shares is not the only possibility to raise the firm's capital. The *capital surplus* originating from former share issues or *retained earnings* can also be used to increase share capital:

Dr. Capital surplus  
    Cr. Share capital

or:

Dr. Retained earnings  
    Cr. Share capital

## II. 2. Recording the net income for the year (the closing process)

The *net income for the year* is a difference between the current year's revenues and expenses, after the deduction of the tax expense. The complex process in which *net income is determined and recorded* is called as **the CLOSING PROCESS**.

As a result of the closing process,

- all the balances of the revenue and expense accounts should be zero,
- the tax expense should be deducted from profits and presented as current liabilities,
- the net income for the year should be presented in a Shareholders' Equity account.

During the closing process, four steps should be done:

**STEP 1:** *Adjusting entries*

**STEP 2:** *Closing the income statement accounts*

**STEP 3:** *Recording the tax expense*

**STEP 4:** *Recording the net income for the year*

Due to the transactions recorded during the year, the income statement accounts have their particular balances on 31 December:

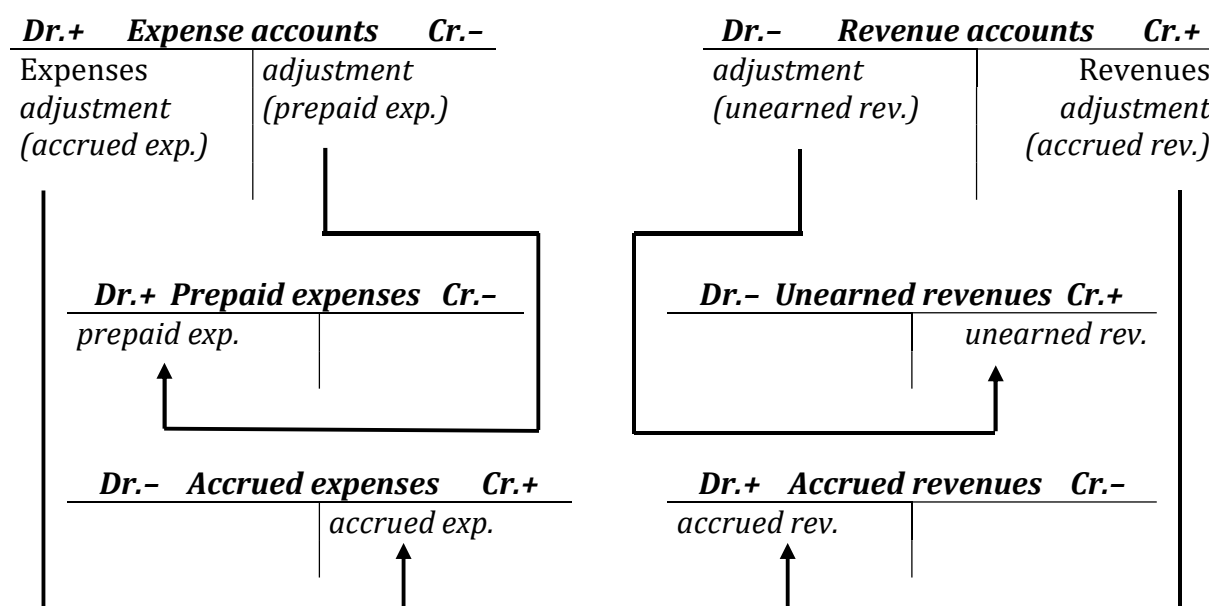
<i>Dr.+ Expense accounts Cr.-</i>	<i>Dr.- Revenue accounts Cr.+</i>
Expenses	Revenues

### STEP 1: Adjusting entries

Among adjusting entries, two types of adjustments are done:

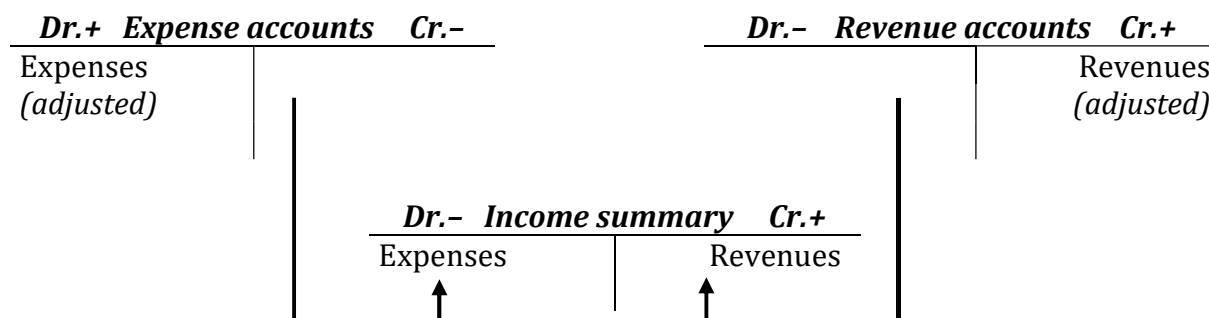
- *Depreciation expense* (depreciation of long-lived assets for the current year) is recorded by debiting the *Depreciation expense* account and crediting the *Accumulated depreciation of assets* account.
- Deferrals and accruals are recorded, which result in an increase or a decrease in profits (by increasing/decreasing revenues or expenses):
  - expenses that have already been recorded in the current year but belong to the following year are presented as *prepaid expenses* and are deducted from the current year's expenses,
  - expenses that have not been recorded until 31 December but belong to the current year are added to expenses and presented as *accrued expenses*,
  - revenues that belong to the current year but have not been recorded until the end of it should be added to revenues and presented as *accrued revenues*,
  - revenues that have already been recorded in the current year but affect the following year are deducted from revenues and presented as *unearned revenues*.

The adjusting entries can be illustrated in the T-accounts as follows:



### STEP 2: Closing the income statement accounts

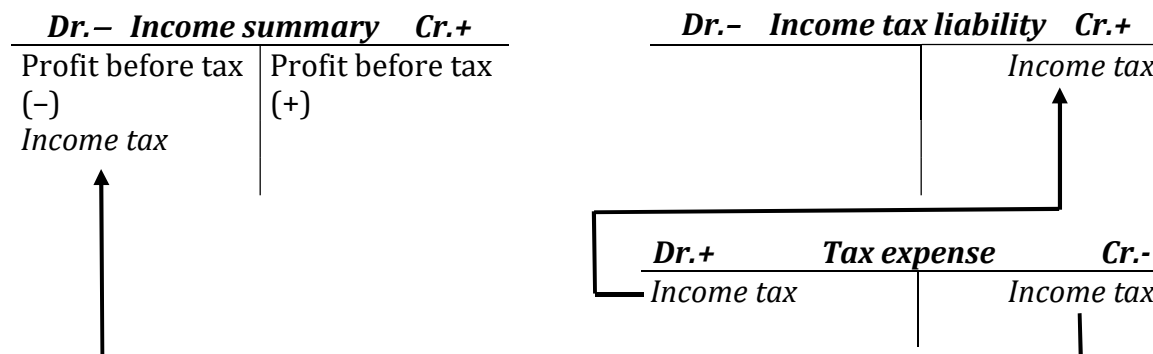
The closing of the income statement accounts means that the balances of these accounts are set to zero and their aggregate balance is presented in the *Income summary* account:



After these entries, the Income summary account contains the *profit before tax*. If it has a credit balance, it refers to profit, while a debit balance means a loss for the current financial year.

### STEP 3: Recording the tax expense

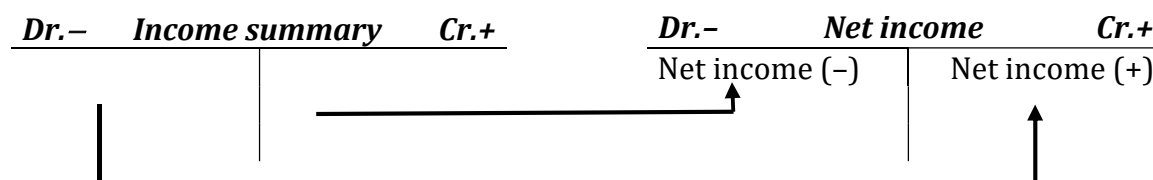
Companies have to pay tax on their profits. The tax should be recorded as an expense (*Tax expense*), against a current liability account (for this purpose the *Income tax liability* account is used.). After this, the Tax expense account is closed to Income summary, similarly to all other expense accounts. As a result, the Income summary account will show the net profit (=profit after tax).



### STEP 4: Recording Net income

At the end of Step 3, the Income summary account contains the net income (again, a credit balance refers to positive profits, while a debit balance means a loss). However, the Income summary is only a technical account that helps the closing of the income statement accounts. A common feature of technical accounts is that they are only used within a particular process, but at the end of that process no balance remains on them. Therefore, the last step is to close the Income summary account and transfer its balance to the *Net income* account.





As it can be seen, the closing process affects the balance sheet in several ways: first, the adjusting entries generate balances in different balance sheet accounts (prepaid expenses, accrued expenses, accrued revenues, unearned revenues). Furthermore, the difference between revenues and expenses (that is, the profit before tax) is divided into two parts: tax expense and net income. When preparing the balance sheet, the income tax should be taken into consideration under *current liabilities*, while net income increases *shareholders' equity*.

### III. Exercises

**Exercise 1.** The firm received a 8 000 EURO bank loan on 1 October 2019. The term of the loan is 2 years, the annual interest rate is 12%. The repayment will be done in equal instalments plus interest, falling due on 1 October each year. Record all transactions until 1 October 2021.

**Exercise 2.** The company borrowed 2 500 EURO for 6 months from its bank on 1 March. Redemption will be done in two instalments:

- 1 June: 1 500 EURO + interest
- 1 September: 1 000 EURO + interest

The annual interest rate is 15%. Record all transactions in connection with the debt.

**Exercise 3.** The firm's revenue and expense accounts have the following balances on 31 December:




➤ Sales Revenue	25 000
➤ Interest income	1 500
➤ Other income	3 000
➤ Cost of Sales	12 000
➤ Salary Expense	4 000
➤ Interest expense	800
➤ Other expense	1 000

#### **Adjusting entries:**

- Depreciation expense for the year: 1 500 EURO
- Accrued interest of bonds: 600 EURO
- Accrued interest of a long-term bank loan: 800 EURO

**Required** (for the solution, use the empty T-accounts given on the next page):

- a) Illustrate the accounts and put the balances on the appropriate side.
- b) Record the adjusting entries.
- c) Close the temporary accounts to the Income Summary account.
- d) Record the 20% tax expense.
- e) Record the net income for the year.

 <i>income statement accounts</i>	
 <i>balance sheet accounts used for adjusting entries</i>	
 <i>other accounts used for closing</i>	

Profit before tax = .....

Tax expense = .....

Net profit = .....

**Exercise 4.** The following information is available about the company's accounts on 31 December, *before the closing process*:

Name of the account	Beginning balance, 1 January	Increases during the year	Decreases during the year
Software	6 800	3 200	1 200
Machines	25 000	5 000	3 500
Accumulated depreciation of machines	7 000	1 400	0
Raw materials	10 600	6 900	7 000
Accounts receivable	4 500	16 700	14 500
Cash	8 400	18 900	21 400
Paid-in Capital	.....	0	0
Retained Earnings	2 000	0	0
Long-term debt	5 000	8 000	5 200
Short-term debt	4 400	8 600	10 900
Accounts payable	5 900	4 500	2 300
Sales Revenue	0	80 400	5 000
Other Revenues	0	2 000	0
Cost of Sales	0	45 000	3 000
Salary expense	0	18 000	0
Depreciation expense	0	1 400	0
Other operating expenses	0	3 800	0
Interest income	0	3 100	0
Interest expense	0	5 300	0

*The corporate income tax rate is 20%.*

**Required:** Record the entries of the closing process and prepare the *post-closing trial balance* and the *balance sheet*. For the solution, use the empty T-accounts and the statements given on the next few pages.

[illegible]

**Profit before tax =**

.....

**Tax expense = .....**

**Net profit = .....**

### POST-CLOSING TRIAL BALANCE

[illegible]

***BALANCE SHEET***  
**31 December**

***Assets***

Intangible assets	
Tangible assets (26 500 – 8 400)	
Investments	
<b>Total fixed assets</b>	
Inventories	
Receivables	
Temporary investments	
Cash	
Prepaid expenses and accrued revenues	
<b>Total current assets</b>	
<b>TOTAL ASSETS</b>	

***Shareholders' Equity & Liabilities***

Paid-in capital	
Capital surplus	
Retained earnings	
Net profit for the year	
<b>Total shareholders' equity</b>	
Long-term liabilities	
Current liabilities (2 100 + 8 100 + 2 000)	
Unearned revenues and accrued expenses	
<b>Total liabilities</b>	
<b>TOTAL EQUITIES</b>	

### **Check your knowledge**

Answer the following questions:

1. What are the most typical transactions in connection with long-term and short-term loans? Explain their effect on the balance sheet and on the income statement and give the necessary book keeping entries.
2. What transactions may affect share capital, capital surplus and retained earnings? How are they recorded in the book-keeping system?
3. Describe the steps of the closing process and give the necessary book-keeping entries.
4. How does the closing process affect the balance sheet?

## **Chapter 10**

### **Summary of the accounting cycle**



The aim of this chapter is to summarize the entire accounting cycle, embracing all problems discussed in chapters 1-9. The phrase *accounting cycle* refers to the book-keeping and reporting activities that are repeated year by year in order to provide objective information about the general financial position of the company for other actors of the economy.

The accounting cycle embraces the following activities during a financial year:

### **1. Opening of accounts**

The first task in the book-keeping system is putting the beginning balances on the appropriate sides of accounts. Only balance sheet accounts can have a beginning balance at the beginning of the year, while income statement accounts get their balances as a result of the transactions recorded during the year.

### **2. Recording the transactions during the year**

All documented transactions that affect the balance sheet or/and the income statement are continuously recorded during the financial year.

### **3. Closing process**

At the end of the year, the necessary adjusting entries are recorded (i.e. deferrals and accruals, depreciation of intangible and tangible assets, re-classification of assets and liabilities), and then the balances of income statement accounts (revenue and expense accounts) are closed and transferred to the Income summary account, which will show the profit before tax. This is then reduced by the income tax liability and the dividends payable (both will appear as current liabilities). At the end, the remaining balance of Income summary should be transferred to the Net profit account, which will be an element of shareholders' equity.

### **4. Trial balance**

After the closing process, the balances of balance sheet accounts (assets, shareholders' equity and liabilities) are listed in a trial balance. The trial balance is the information basis of the balance sheet.

### **5. Preparing the balance sheet and the income statement**

The last accounting task of the financial year is the preparation of the financial statements that are included in the annual report. The income statement is prepared based on the balances closed from the revenue and expense accounts, while the balance sheet is filled in using the balances listed in the trial balance.

## The accounting cycle – Complex exercise

“Starter” Ltd. is a merchandising company that started its operations in the current year, on 15 February. The accounts affected by the current year’s transactions have the following balances on 31 December (in EUR):

Name of the account	Debit	Credit
Software	12 500	
Buildings	33 400	
Equipment	20 100	
Accumulated depreciation of tangible assets		6 000
Merchandise goods	16 200	
Accounts receivable	13 000	
Notes receivable	1 100	
Marketable securities	3 800	
Cash	7 800	
Bank account	18 500	
Accrued revenues	2 600	
Paid-in capital		40 000
Capital surplus		18 700
Other reserves		3 300
Long-term debt		14 800
Short term debt		18 200
Accounts payable		6 800
Accrued expenses		3 200
Sales revenue		182 600
Cost of sales	113 300	
Salary expense	32 700	
Depreciation expense	6 000	
Other operating expenses	12 600	
Interest income		2 400
Gain on sale of securities		800
Interest expense	3 200	

### The above balances do not contain the effects of the following transactions:

- 14 March:** Shares “A” were bought for short-term investment. The 1 400 EUR purchase price was paid in cash.
- 20 April:** The firm purchased new office equipment for 15 000 EUR. The supplier offered a 10-day deadline for payment. The planned useful life of the equipment is 5 years, and it will be depreciated according to the straight-line method (the residual value is zero).
- 30 April:** The purchase price of the new equipment was paid by bank transfer.
- 15 May:** The firm borrowed 8 000 EUR from its bank for one year (the money was deposited to the bank account). The loan will be repaid in two equal instalments (on 15 November and on 15 May next year), the interest rate is 15%.

- 1 June:** The firm bought 90 units of newly issued “X” corporate bonds (they plan to sell them next year). Their issue price (identical with the face value) was 100 EUR per unit, the interest rate is 12% (paid semi-annually). The purchase price was immediately paid by bank transfer.
- 15 August:** Shares “A” were sold for cash. The selling price was 1 800 EUR.
- 31 August:** Merchandise goods were sold to a customer. The book value of the goods was 6 400 EURO, the selling price was 8 800 EURO. The firm offered 45 days for payment to the customer.
- 1 October:** The company bought new software on credit, for 4 000 EUR.
- 15 October:** The selling price of merchandise goods sold on 31 August was received from the customer by bank transfer.
- 15 November:** The first instalment of the bank loan (15 May) and the appropriate interest were paid by bank transfer.
- 1 December:** The first semi-annual interest of the “X” bonds was received by bank transfer.

**REQUIRED:**

1. Put the balances on the appropriate side of the T-accounts given and record the additional transactions.
2. Record the *adjusting entries* on 31 December.
3. Record the *closing entries* if the corporate income tax rate is 10%.
4. Prepare the *post-closing trial balance*.
5. Prepare the *balance sheet* and the *income statement*.

**Software**

--	--

**Buildings**

--	--

**Equipment**

--	--

**Accumulated depreciation of  
tangibles**

--	--

**Merchandise goods**

--	--

**Accounts receivable**

--	--

**Notes receivable**

--	--

**Marketable securities**

--	--

**Cash**

--	--

**Bank account**

--	--

**Accrued revenues**

--	--

**Paid-in capital**

--	--

**Capital surplus**

--	--

**Other reserves**

--	--

<b>Long-term debt</b>	<b>Short-term debt</b>
<b>Accounts payable</b>	<b>Accrued expenses</b>
<b>Sales revenue</b>	<b>Cost of sales</b>
<b>Salary expense</b>	<b>Depreciation expense</b>
<b>Other operating expenses</b>	<b>Interest income</b>
<b>Interest expense</b>	<b>Gain on sale of securities</b>
<b>Income summary</b>	<b>Income tax liability</b>
	<b>Tax expense</b>
	<b>Net income</b>

**Calculations:**

[illegible]

**BALANCE SHEET, 31 December***Assets**Sh.Equity & Liabilities*

Intangible assets		Paid-in capital	
Tangible assets		Capital surplus	
Investments		Other reserves	
<b>Total Fixed Assets</b>		Retained earnings	
Inventories		Net income	
Receivables		<b>Total Sh. Equity</b>	
Marketable securities		Long-term liabilities	
Cash		Current liabilities	
Prepaid expenses and accrued revenues		Unearned revenues and accrued expenses	
<b>Total Current Assets</b>		<b>Total Liabilities</b>	
<b>TOTAL ASSETS</b>		<b>TOTAL SH.E.&amp;LIABILITIES</b>	

**INCOME STATEMENT, Year Ended 31 December**

Net Sales	
Cost of Sales	
Gross Profit	
Salary Expense	
Depreciation expense	
Other operating expense	
<b>Operating Income</b>	
Financial revenues	
Financial expenses	
<b>Income before tax</b>	
Tax expense	
<b>Net income</b>	



## **Appendix**

### **Solutions of test questions and exercises of Chapters 1-10**

## Chapter 1

### The definition and the basic principles of accounting

#### Test questions – solution

*I. Fill in the blanks in the following sentences.*

1. Accounting is a set of activities the aim of which is to provide **objective information** for internal and external users about the economic entity's financial position, profits and cash-flows.
2. **Book-keeping** is a closed system of accounts in which all changes to the firm's balance sheet and income statement are recorded, based on accounting documents (invoices etc.).
3. The external expert whose responsibility is to examine the content of the annual report is called **auditor**.
4. Based on the **matching** concept, the revenues and expenses of the same transaction should be presented in the same accounting period.
5. Once an entity has decided on one method (i.e. valuation method), it should treat all events of the same character in the same method unless it has a sound reason to do otherwise. This is required by the **consistency** concept.

*II. Select the correct answer(s).*

1. The internal users of annual reports are:
  - a) Banks
  - b) Shareholders (owners)**
  - c) Creditors
  - d) Workers**
  - e) Managers**
  - f) Authorities
  - g) Prospective investors

2. The balance sheet contains:

- a) **Assets**
- b) Costs
- c) **Liabilities**
- d) Revenues
- e) **Shareholders' Equity**

3. Which of the following should be presented among assets in the balance sheet?

- a) Share capital
- b) Long-term debt
- c) Retained earnings
- d) **Machines**
- e) **Cash**

4. Examples of liabilities can be:

- a) **Accounts payable**
- b) **Short-term debt**
- c) Buildings
- d) Inventories
- e) Retained earnings

5. The part of the income distributed to shareholders is called:

- a) Income before tax
- b) Income tax
- c) Earnings per share
- d) **Dividends**
- e) Net profit

6. Net Cash Flow is calculated as:

- a) **Operating CF + Investing CF + Financing CF**
- b) Operating CF + Financing CF
- c) Operating CF – Investing CF + Financing CF
- d) Operating CF + Investing CF
- e) Financing CF + Investing CF

7. Select the correct equation(s).

- a)  $\text{Assets} = \text{Shareholders' Equity} - \text{Liabilities}$
- b)  $\text{Shareholders' Equity} = \text{Assets} - \text{Liabilities}$**
- c)  $\text{Fixed Assets} + \text{Current Assets} = \text{Shareholders' Equity} + \text{Liabilities}$**
- d)  $\text{Liabilities} = \text{Assets} + \text{Shareholders' Equity}$

8. Select the correct equation(s).

- a)  $\text{Gross margin} = \text{Net sales} + \text{Cost of sales}$
- b)  $\text{Operating income} = \text{Gross margin} - \text{Operating expenses}$**
- c)  $\text{Operating income} = \text{Net sales} - \text{Operating expenses}$
- d)  $\text{Gross margin} = \text{Cost of sales} + \text{Operating expenses}$

## Chapter 2

### The balance sheet

#### Exercise 1 – Solution

	ASSETS							EQUITIES		
	Fixed Assets			Current Assets				Shareholders' Equity	Liabilities	
	Intangibles	Tangibles	Investments	Inventories	Receivables	Temp. inv.	Cash		Short-term liabilities	Long-term liabilities
Finished products				X						
Long-term bank loan										X
Instalment of long-term bank loan payable in the next financial year									X	
Production materials				X						
The director's service car		X								
Paid-in Capital								X		
Rental rights	X									
Long-term loan granted to a partner company			X							
Software	X									
Retained Earnings								X		
Petty cash							X			
5-years government bonds			X							
Net profit for the year								X		
Storehouse		X								
Computers used in the production process		X								
Current account							X			
Customs liabilities									X	
Face value of the bonds issued by the company										X
Fuel				X						
Corporate bonds bought in order to realize a gain on selling them						X				
Trademarks possessed	X									
Capital Surplus								X		
Advance salary payments to employees					X					
Insurance fee payable to the insurance company									X	
Goodwill	X									
Office equipment		X								
Office buildings		X								
Work in progress				X						
Production equipment		X								

	ASSETS							EQUITIES		
	Fixed Assets			Current Assets				Shareholder's Equity	Liabilities	
	Intangibles	Tangibles	Investments	Inventories	Receivables	Temp. Inv.	Cash		Short-term liabilities	Long-term liabilities
Short-term loan granted to another company					X					
Bank deposit in foreign currency							X			
Long-term bank deposit (fixed for 2 years)			X							
Promissory notes accepted from debtors					X					
Shares of subsidiaries			X							
Short-term discount bonds						X				
Accounts receivable					X					
Promissory notes given to creditors									X	
Accounts payable									X	
Personal income tax payable									X	
Corporate income tax payable									X	

### Exercise 2 – Solution

Item	Value (USD)	Balance sheet line
5-year government bonds	4 200	Investments
Accounts payable	800	Current liabilities
Accounts receivable	2 600	Receivables
Accumulated profits of the previous years	6 200	Retained Earnings
Advance payments received from customers	750	Current liabilities
Advance payments to suppliers	1 090	Receivables
Bank deposits	6 800	(5200) Cash
* including fixed deposits	1 600	(1600) Investments
Buildings	40 000	Tangibles
Corporate bonds (with a term of 3 months)	860	Temporary investments
Corporate income tax liability	1 780	Current liabilities
Current account of the company	8 560	Cash
Face value of long-term bonds issued	18 000	Long-term liabilities
Finished products	15 200	Inventories
Long term loan granted to another company	5 000	(3750) Investments
* including the instalment due in the next year	1 250	(1250) Receivables

Long-term bank credit	9 200	(7200) Long-term liab.
* including the instalment due within one year	2 000	(2000) Current liabilities
Machines, equipment used in production	32 400	Tangibles
Merchandise goods	4 780	Inventories
Net profit for the year	.....	Net income
Other Reserves	4 200	Other reserves
Paid-in Capital	84 000	Paid-in Capital
Petty cash	200	Cash
Production materials	5 040	Inventories
Promissory note given to a supplier	1 000	Current liabilities
Promissory notes accepted from customers	8 400	Receivables
Registered trademarks	4 000	Intangibles
Right of use (related to a machine)	5 200	Intangibles
Shares (the company is planning to sell them in the next year)	480	Temporary investments
Shares of other companies (held for long-term dividend yield)	800	Investments
Short-term debt	2 880	Current liabilities
Social security contributions payable	1 230	Current liabilities
Software	25 600	Intangibles
VAT liability	2 400	Current liabilities
Vehicles	3 200	Tangibles
Wages, salaries payable to employees	4 500	Current liabilities

### Balance Sheet, 31 December 20... (in US dollars)

<i>Assets</i>		<i>Shareholder's Equity and Liabilities</i>	
Intangible Assets	34 800	Paid-in Capital (Share Capital)	84 000
Tangible Assets	75 600	Capital Surplus (Share Pr. Acc.)	0
Investments	10 350	Other Reserves	4 200
<b>Total Fixed Assets</b>	<b>120 750</b>	Retained Earnings	6 200
Inventories	25 020	Net income	37 470
Receivables	13 340	<b>Total Shareholder's Equity</b>	<b>131 870</b>
Temporary investments	1 340	Long-term liabilities	25 200
Cash	13 960	Current liabilities	17 340
<b>Total Current Assets</b>	<b>53 660</b>	<b>Total Liabilities</b>	<b>42 540</b>
<b>Σ Total Assets</b>	<b>174 410</b>	<b>Σ Total Sh. Equity and Liabilities</b>	<b>174 410</b>

### Exercise 3 – Solution.

Item possessed on 31 December	Value (USD)	Balance sheet line
Accounts receivable	9 130	Receivables
Cars	32 000	Tangibles
Cash	5 940	Cash
Computers	3 200	Tangibles

Current account	21 000	<i>Cash</i>
Finished products	9 100	<i>Inventories</i>
Invoice received from suppliers	2 000	<i>Current liabilities</i>
Land, buildings	80 000	<i>Tangibles</i>
Long-term bank loan	3 500	<i>(3000) Long-term liabilities</i>
* instalment payable within one year	500	<i>(500) Current liabilities</i>
Long-term receivables	3 400	<i>(2720) Investments</i>
* instalment due in the next year	680	<i>(680) Receivables</i>
Long-term corporate bonds	2 100	<i>Investments</i>
Merchandise goods	5 800	<i>Inventories</i>
Net profit for the year	7 690	<i>Net income</i>
Notes payable	2 800	<i>Current liabilities</i>
Notes receivable	4 150	<i>Receivables</i>
Office equipment	5 680	<i>Tangibles</i>
Office furniture	3 700	<i>Tangibles</i>
Paid-in Capital	.....	<i>Paid-in Capital</i>
Personal income tax liability	850	<i>Current liabilities</i>
Production equipment	75 000	<i>Tangibles</i>
Property rights	28 000	<i>Intangibles</i>
Raw materials	14 400	<i>Inventories</i>
Retained Earnings	50 000	<i>Retained Earnings</i>
Semi-finished products	2 120	<i>Inventories</i>
Shares (planned to be kept on a long term)	2 800	<i>Investments</i>
Shares (planned to be sold in the next year)	1 200	<i>Temporary investments</i>
Short-term debt	2 000	<i>Current liabilities</i>
Short-term discount bonds	5 000	<i>Temporary investments</i>
Social security liabilities	950	<i>Current liabilities</i>
Software	12 000	<i>Intangibles</i>
Trucks	98 000	<i>Tangibles</i>
Wages, salaries payable to workers	1 350	<i>Current liabilities</i>
Work in progress	3 790	<i>Inventories</i>

### Balance Sheet, 31 December 20... (in US dollars)

<i>Assets</i>		<i>Shareholder's Equity and Liabilities</i>	
Intangible Assets	40 000	Paid-in Capital (Share Capital)	356 370
Tangible Assets	297 580	Capital Surplus (Share Pr. Acc.)	0
Investments	7 620	Other Reserves	0
<b>Total Fixed Assets</b>	<b>345 200</b>	Retained Earnings	50 000
Inventories	35 210	Net income	7 690
Receivables	13 960	<b>Total Shareholder's Equity</b>	<b>414 060</b>
Temporary investments	6 200	Long-term liabilities	3 000
Cash	26 940	Current liabilities	10 450
<b>Total Current Assets</b>	<b>82 310</b>	<b>Total Liabilities</b>	<b>13 450</b>
<b>Σ Total Assets</b>	<b>427 510</b>	<b>Σ Total Sh. Equity and Liabilities</b>	<b>427 510</b>



**Test questions – Solution**

Select the correct answer(s).

1. In case of an increasing liquidity order,
  - a) the left side of the balance sheet is started with cash, while the right side is started with shareholders' equity
  - b) the left side of the balance sheet is started with fixed assets, while the right side is started with shareholders' equity**
  - c) the left side of the balance sheet is started with fixed assets, while the right side is started with current liabilities
  - d) the left side of the balance sheet is started with cash, while the right side is started with current liabilities
  - e) the right side of the balance sheet is started with cash, while the left side is started with shareholders' equity
2. Which of the following are presented as intangible assets?
  - a) buildings
  - b) retained earnings
  - c) tradable rights**
  - d) goodwill**
  - e) software**
3. Which of the following are presented as tangible assets?
  - a) machines**
  - b) raw materials
  - c) accounts receivable
  - d) long-term debt
  - e) buildings**
4. Which of the following are presented as long-term investments?
  - a) a loan received from another company for 3 years
  - b) a loan given to another company for 3 years**
  - c) long-term bonds issued
  - d) long-term bonds bought**
  - e) bank deposit fixed for 2 years**
5. Which of the following are presented as inventories?
  - a) merchandise goods**
  - b) accounts payable
  - c) net profit
  - d) raw materials**
  - e) work in progress**
6. Which is the right order?
  - a) semi-finished products, work in progress, finished products
  - b) work in progress, semi-finished products, finished products**
  - c) finished products, work in progress, semi-finished products
  - d) construction in progress, semi-finished products, finished products

7. Which of the following transactions generate receivables in the balance sheet?

- a) the company purchased raw materials
- b) the company accepted a promissory note from a customer**
- c) the company sold finished products to a customer**
- d) the company increased its share capital
- e) the company received a short-term loan

8. Short-term investments can be:

- a) shares**
- b) cash
- c) an automobile
- d) bonds with a 5-year maturity
- e) bonds with a 5-month maturity**

9. Cash & equivalents in the balance sheet may contain:

- a) promissory notes
- b) cash in hand**
- c) securities with high liquidity
- d) bank accounts**
- e) long-term bank deposits

10. Which of the following are presented under shareholders' equity?

- a) share capital**
- b) retained earnings**
- c) other reserves**
- d) net profit**
- e) bonds issued

11. Select the items to be presented as long-term liabilities.

- a) a bank loan received for 5 years**
- b) a bank loan received for 3 months
- c) notes payable
- d) accounts payable
- e) bonds issued**

12. Select the items to be presented as current liabilities.

- a) accounts payable**
- b) accounts receivable
- c) notes payable**
- d) notes receivable
- e) tax liability**

## Chapter 3

### Valuation of items in the balance sheet

#### Exercise 1. – Solution

- 1) Land that was bought 4 years ago for 32 000 USD.

*Land is not depreciated!*

*Accumulated depreciation = 0*

*Depreciation expense for the current year = 0*

*Net value (book value) at the current year = 32 000 USD*

- 2) Buildings with an initial cost of 72 000 USD, their residual value is 12 000 USD, useful life is 25 years. At the end of the financial year, they are 10.5 years old. For depreciation, the straight-line method is applied.

*Annual depreciation = (72 000 USD – 12 000 USD) / 25 years = 2 400 USD/year*

*Accumulated depreciation = 2 400 USD/year \* 10.5 years = 25 200 USD*

*Depreciation expense for the current year = 2 400 USD*

*Net value (book value) at the end of the current year = 72 000 – 25 200 = 46 800 USD*

- 3) Production equipment: 2.75 years old, the initial cost is 28 000 USD, residual value is 4 000 USD. It is depreciated during 5 years using the sum-of-the-years-digits method.

$$1+2+3+4+5 = 15$$

*Accumulated depreciation = (28 000 – 4 000) \* (5/15 + 4/15 + 3/15 \* 0.75) = 8 000 USD*

*Depreciation expense for the current year =*

*= (28 000 – 4 000) \* (4/15 \* 0.25 + 3/15 \* 0.75) = 5 200 USD*

*Net value (book value) at the end of the current year = 28 000 – 13 200 = 14 800 USD*

- 4) A car that was bought for 22 800 USD, its estimated market value at the end of the useful life is 4 800 USD. Its total capacity was estimated at 300 000 kilometres, it has already been used for 145 000 kilometres (including 30 000 km performed in the current year).

*Unit depreciation = (22 800 USD – 4 800 USD) / 300 000 km = 0.06 USD/km*

*Accumulated depreciation = 0.06 USD/km \* 145 000 km = 8 700 USD*

*Depreciation expense for the current year = 0.06 USD/km \* 30 000 km = 1 800 USD*

*Net value (book value) at the end of the current year = 22 800 – 10 500 = 12 300 USD*

- 5) A computer: its purchase price was 4 400 USD, its expected market value at the end of the useful life is 400 USD. For depreciation, the declining balance method is applied with a 30% rate. The computer is 3 years old now.

Year 1: Depreciation =  $(4\,400 - 400) * 0.3 = 1\,200$  USD Net value = 3 200 USD

Year 2: Depreciation =  $(3\,200 - 400) * 0.3 = 840$  USD Net value = 2 360 USD

Year 3: Depreciation =  $(2\,360 - 400) * 0.3 = 588$  USD Net value = 1 772 USD

Accumulated depreciation =  $1\,200 + 840 + 588 = 2\,628$  USD

Depreciation expense for the current year = 588 USD

Net value (book value) at the end of the current year = 1 772 USD

Total value of Tangible assets in the balance sheet =

=  $32\,000 + 46\,800 + 10\,000 + 14\,100 + 1\,772 = \underline{\underline{104\,672\text{ USD}}}$

### Exercise 2. - Solution

The following information is available about the company's Tangible Assets (in USD):

Land	4 350
Buildings	28 200
Accumulated depreciation of buildings	7 200
Manufacturing machines	30 000
Accumulated depreciation of manufacturing machines	15 500
Vehicles used in production	11 250
Accumulated depreciation of vehicles	2 250
Office equipment	1 200
Accumulated depreciation of office equipment	450

#### Additional information:

- The useful life of buildings is 50 years, their average age is 15 years, the estimated residual value is 4 200 USD. To determine depreciation, the straight-line method is used.

Accumulated depreciation =  $(28\,200 - 4\,200) / 50 \text{ years} * 15 \text{ years} = 7\,200$  USD

- Manufacturing machines are written off using the sum-of-the-years-digits method, their useful life is 7 years, the residual value is 2 000 USD. Until now, the depreciation of 2.5 years has already been presented.

Accumulated depreciation =  $(30\,000 - 2\,000) * (7/28 + 6/28 + 5/28 * 0.5) = 15\,500$  USD

- The accumulated depreciation of vehicles is 20% of their initial cost.

Initial cost =  $2\,250 / 0.2 = 11\,250$  USD

Book value of the company's tangible assets =

=  $4\,350 + 28\,200 - 7\,200 + 30\,000 - 15\,500 + 11\,250 - 2\,250 + 1\,200 - 450 = \underline{\underline{49\,600\text{ USD}}}$

**Exercise 3. – Solution**

a) FIFO

*Cost of sale 1 (500 units sold) =  $400 \cdot 24 + 100 \cdot 28 = \$ 12\,400$*   
*(remaining: 200 units at \$28 per unit)*

*Cost of sale 2 (450 units sold) =  $200 \cdot 28 + 250 \cdot 32 = \$ 13\,600$*

***Ending inventory (the value presented in the balance sheet) =  $150 \cdot 32 =$***   
***= \$ 4 800***

b) LIFO

*Cost of sale 1 (500 units sold) =  $300 \cdot 28 + 200 \cdot 24 = \$ 13\,200$*   
*(remaining: 200 units at \$24 per unit)*

*Cost of sale 2 (450 units sold) =  $400 \cdot 32 + 50 \cdot 24 = \$ 14\,000$*

***Ending inventory (the value presented in the balance sheet) =  $150 \cdot 24 =$***   
***= \$ 3 600***

c) moving average cost

Sale 1:

*Avg cost =  $(400 \cdot 24 + 300 \cdot 28) / 700 = \$25.71 / \text{unit}$*   
*Cost of sale 1 =  $500 \cdot 25.71 = \$ 12\,855$*   
*(remaining: 200 units at \$25.71 per unit)*

Sale 2:

*Avg cost =  $(200 \cdot 25.71 + 400 \cdot 32) / 600 = \$29.90 / \text{unit}$*   
*Cost of sale =  $450 \cdot 29.90 = \$13\,455$*

***Ending inventory (the value presented in the balance sheet) =  $150 \cdot 29.90 =$***   
***= \$ 4 485***

**Exercise 4. – Solution****a) simple interest**

Quarterly capital redemption = 8 000 USD / 16 quarters = 500 USD per quarter

Year	current year		following year			
day/month	30 Sept	31 Dec	31 Mar	30 June	30 Sept	31 Dec
Remaining capital	8 000	8 000	7 500	7 000	6 500	6 000
Capital redemption	-	500	500	500	500	500
Interest*	-	300	281	263	244	225
Debt service	-	800	781	763	744	725

*\*Interest for the quarter = Remaining capital before redemption \* 15% / 4*

Total liability on 31 December (current year) = 8 000 – 500 = 7 500

→ current liability = 4\*500 = 2 000 USD (instalments falling due in the following year)

→ **long-term liability = 7 500 – 2 000 = 5 500 USD** (instalments due in more than 1 year)

### b) annuity

Quarterly interest rate = 15% / 4 = 3.75%

Quarterly annuity =  $\frac{8000 \times 0.0375}{1 - \frac{1}{(1+0.0375)^{16}}} = 674$  USD per quarter

Year	current year		following year			
day/month	30 Sept	31 Dec	31 Mar	30 June	30 Sept	31 Dec
Remaining capital	8 000	8 000	7 626	7 238	6 835	6 417
Capital redemption*	-	374	388	403	418	433
Interest**	-	300	286	271	256	241
Debt service	-	674	674	674	674	674

\* Capital redemption = Debt service – Interest

\*\*Interest for the quarter = Remaining capital before redemption \* 15% / 4

Total liability on 31 December (current year) = 8 000 – 374 = 7 626

→ current liability = 388+403+418+433 = 1 642 USD

(instalments falling due in the following year)

→ **long-term liability = 7 626 – 1 642 = 5 984 USD** (instalments due in more than 1 year)

### Test questions - Solution

Select the correct answer(s).

1. The historical cost of a tangible asset should contain

- a) **net invoice price**
- b) VAT
- c) **transportation cost**
- d) **customs duty**
- e) maintenance cost paid after activation

2. Select the correct equation(s).

- a) Net value = Initial cost – Residual value
- b) Depreciable cost = Initial cost – Accumulated depreciation
- c) **Book value = Historical cost – Accumulated depreciation**
- d) **Depreciable cost = Initial cost – Residual value**
- e) Book value = Historical cost – Residual value

3. Which of the following asset(s) is (are) not depreciable?

- a) **land**
- b) buildings
- c) machines
- d) office equipment
- e) **raw materials**

4. Select the statement(s) valid for the straight-line method.
- a) **The value of the asset decreases evenly during the useful life.**
  - b) The depreciation expense decreases evenly during the useful life.
  - c) It is a degressive method.
  - d) **The depreciation expense recorded in the last year of the useful life is identical with that recorded in the first year.**
  - e) Using this method, it is possible that the value of the asset falls below the residual value.
5. Select the statement(s) valid for the sum-of-the-years'-digits method.
- a) The value of the asset decreases evenly during the useful life.
  - b) **The depreciation expense decreases evenly during the useful life.**
  - c) **It is a degressive method.**
  - d) The depreciation expense recorded in the last year of the useful life is identical with that recorded in the first year.
  - e) **The difference between the depreciation expenses of the first and the second year is identical to the difference between the depreciation expenses of the second and the third year.**
6. The annual depreciation is calculated by multiplying the remaining depreciable cost with a given percentage. Which method is this?
- a) straight-line method
  - b) sum-of-the-years'-digits method
  - c) **declining balance method**
  - d) units-of-production method
7. In which situation would you propose the units-of-production method?
- a) if the useful life is more than 5 years
  - b) if the asset loses its value quickly
  - c) **if the useful life can be better expressed in a productive capacity (hours, kilometres, etc.) than in time**
  - d) in case of buildings
8. In case of the straight-line method, at the half of the useful life the value of the asset will be half of its historical cost. Under what conditions is this statement true?
- a) It is always true.
  - b) It is only true if the residual value is not zero.
  - c) **It is only true if the residual value is zero.**
  - d) It is never true.

9. Select the right statement(s).

- a) **In case of increasing prices, the FIFO method results in a higher balance sheet value than the LIFO method.**
- b) **In case of increasing prices, the FIFO method results in a higher profit than the LIFO method.**
- c) In case of increasing prices, the LIFO method results in a higher balance sheet value than the FIFO method.
- d) In case of increasing prices, the LIFO method results in a higher profit than the FIFO method.
- e) **In case of increasing prices, the average cost method results in a balance sheet value that is between the FIFO and LIFO values.**

10. How should doubtful and uncollectible receivables be handled?

- a) **Doubtful receivables and uncollectible receivables are not presented in the balance sheet at all.**
- b) Doubtful receivables are presented in the balance sheet, while uncollectible receivables are not.
- c) Uncollectible receivables are presented in the balance sheet, while doubtful receivables are not.
- d) Both doubtful and uncollectible receivables are presented in the balance sheet.

11. Select the right statement(s).

- a) **In case of simple interest, debt service decreases during the term of the loan.**
- b) In case of simple interest, capital redemption decreases during the term of the loan.
- c) **In case of annuity, debt service is constant during the term of the loan.**
- d) **In case of annuity, capital redemption increases during the term of the loan.**
- e) **In case of simple interest, at the half of the term the remaining capital is half of the original amount.**
- f) In case of annuity, at the half of the term the remaining capital is half of the original amount.

12. The company fixed a deposit with an annual interest rate of 10%. The bank calculates a monthly compound interest. Which of the following statement(s) is (are) true?

- a) **The effective interest rate will be higher than 10%.**
- b) The effective interest rate will be lower than 10%.
- c) The effective interest rate will be exactly 10%.
- d) **If the company does not withdraw money from the deposit then the increase of the deposit will be growing year by year.**



## Chapter 4

### The income statement

#### Exercise 1. – Solution

*Sales revenue* = 8 000 units \* 7 USD/unit = 56 000 USD

*Inventory and direct costs:*

Beginning inventory	0 USD	
+ Products produced in the current year	44 000 USD	(direct cost → 10000 units; 4.4 USD/unit)
- <u>Cost of products sold</u>	<u>35 200 USD</u>	(8000 units * 4.4 USD/unit)
= Ending inventory	8 800 USD	(2000 units * 4.4 USD/unit)

*Change in inventories* = Ending inventory – Beginning inventory = 8 800 – 0 = + 8 800 USD

*Operating expenses* = Indirect costs = 10 000 USD

#### Operating profit by the sales approach

Net Sales	56 000
Cost of Sales	25 200
<b>Gross Profit</b>	<b>20 800</b>
Operating Expenses	10 000
Other Revenues	2 800
Other Expenses	1 600
<b>OPERATING PROFIT</b>	<b>12 000</b>

#### Operating profit by the production approach

Net Sales	56 000
Change in inventories	+ 8 800
Other Revenues	2 800
Material Expenses	30 000
Personnel Expenses	18 000
Depreciation Expense	6 000
Other Expenses	1 600
<b>OPERATING PROFIT</b>	<b>12 000</b>

#### Exercise 2. – Solution

*Bonds:*

Proportionate interest income for the year =  
 = 8000 \* 0.12 / 12 months \* 3 months [1 Oct – 31 Dec] =  
 = \$ 240

*Debt:*

Proportionate interest expense for the year =  
 = 12 000 \* 0.1 / 12 months \* 8 months [1 May – 31 Dec] = + \$ 800

**Exercise 3. – Solution**

Quarterly interest rate =  $12\% / 4 = 3\%$

Annuity =  $PV * r / (1 - 1/(1+r)^t) = 10\,000 * 0.03 / (1 - 1/1.03^8) = \$ 1\,425$

Interest expense for the period 1 July – 30 Sept =  $10\,000 * 0.03 = \$ 300$

Capital repaid on 30 Sept =  $1\,425 - 300 = \$ 1\,125$

Remaining capital on 30 Sept =  $10\,000 - 1\,125 = \$ 8\,875$

Interest expense for the period 1 Oct – 31 Dec =  $8\,875 * 0.03 = 266.25 \rightarrow \$ 266$

Total interest expense for the year =  $300 + 266 = \$ 566$

**Exercise 4. – Solution**

Starting balance 1 March =  $\$ 200\,000$

Balance on 1 October =  $200\,000 * (1 + 0.1/12)^7 = \$ 211\,962$

Interest income realized in the period 1 March – 1 October =  $\$ 11\,962$

Withdrawal of  $\$ 30\,000$  on 1 Oct  $\rightarrow$  New balance =  $\$ 181\,962$

Balance on 31 Dec =  $181\,962 * (1 + 0.1/12)^3 = \$ 186\,549$

Interest income realized in the period 1 Oct – 31 Dec =  $186\,549 - 181\,962 = \$ 4\,587$

Total interest income for the year =  $11\,962 + 4\,587 = \$ 16\,549$

**Exercise 5. – Solution**

Sales revenue:

Product “A” with 20% sales return =  $12\,000 * 35 * (1 - 0.2) = 336\,000$  EUR

Product “B” with 10% allowance =  $6\,000 * 8 * (1 - 0.1) = 43\,200$  EUR

Total sales revenue =  $379\,200$  EUR

Cost of sales:

Product “A” with 20% sales return =  $12\,000 * 20 * (1 - 0.2) = 192\,000$  EUR

Product “B” (allowance does not affect the cost of sales) =  $6\,000 * 4 = 24\,000$  EUR

Total cost of sales =  $216\,000$  EUR

Operating expenses:

Selling expenses =  $8\,000 + 3\,000 + 14\,000 = 25\,000$  EUR

Administrative expenses =  $8\,000 * 1.27 + 2\,400 = 12\,560$  EUR

General expenses =  $7\,900 + 4\,400 + 1\,700 = 14\,000$  EUR

} Total =  $51\,560$  EUR

Depreciation expense for the year:

Office buildings:  $(100\,000 - 40\,000) / 50 \text{ years} * 1 \text{ year} = 1\,200$  EUR

Office equipment:  $(8\,000 - 2\,000) * 5/15 * 3 \text{ months} / 12 \text{ months} = 500$  EUR

Total depreciation expense =  $1\,700$  EUR

Manufacturing machine sold:

Selling price =  $5\,000$  EUR

Book value =  $7\,000 - 3\,500 = 3\,500$  EUR

Gain on sale =  $1\,500$  EUR  $\rightarrow$  presented as Other revenues

Securities:

Purchase price = 4 100 EUR

Selling price = 5 400 EUR

Gain on sale = 1 300 EUR → presented as Financial revenues

Long-term bank deposit:

Interest income for the year =

= 4 000 \* 0.09 / 12 months \* 7.5 months = 225 EUR → presented as Financial revenues

Debt:

Interest expense for the year =

= 20 000 \* 0.12 / 12 months \* 4 months = 800 EUR → presented as Financial expenses

### Income Statement, Year Ended 31 December 2020

Net Sales	379 200
Cost of Sales	216 000
<b>Gross Profit</b>	<b>163 200</b>
Operating Expenses	51 560
Other Revenues	1 500
Other Expenses	0
<b>Operating Profit</b>	<b>113 140</b>
Financial Revenues	1 525
Financial Expenses	800
<b>Profit Before Tax</b>	<b>113 865</b>
Tax expense (10%)	11 387
<b>Net profit</b>	<b>102 478</b>

### Exercise 6. – Solution

Sales revenue:

8200 units \* 50 EUR/unit \* (1 – 0.05) = 389 500 EUR (with 5% discount)

Change in inventories:

Beginning inventory	1400 * 28 = 39 200 EUR
+ Production in the current year	10200 * 30 = 306 000 EUR
- Cost of products sold (FIFO)	1400 * 28 + 6800 * 30 = 243 200 EUR
= Ending inventory	3400 * 30 = 102 000 EUR

*Change in inventories = 102 000 – 39 200 = + 62 800 EUR*

Material expenses = 98 000 EUR

Personnel expenses = 164 000 + 44 280 = 208 280 EUR

Depreciation expense = (88 000 – 12 000) \* 0.08 = 6 080 EUR

Production equipment sold:

Book value = 3 900 EUR

Selling price = 3 600 EUR

Loss on sale = 300 EUR → presented as Other expenses

Gain on sale of securities = 300 EUR → *presented as Financial revenues*

Interest expense on the debt:

$18\,000 * 0.1 / 12 \text{ months} * 5 \text{ months} = \underline{750 \text{ EUR}}$  → *presented as Financial expenses*

### Income Statement, Year Ended 31 December 2020

Net Sales	389 500
Change in inventories	+ 62 800
Other income	0
Production materials and external services	98 000
Personnel expenses	208 280
Depreciation costs	6 080
Other expenses	300
<b>Operating Profit</b>	<b>139 640</b>
Financial Revenues	300
Financial Expenses	750
<b>Profit Before Tax</b>	<b>139 190</b>
Tax expense (10%)	13 919
<b>Net profit</b>	<b>125 271</b>

### Test questions - Solution

Select the correct answer(s).

1. Sales revenue includes
  - a) **the selling price of inventories sold**
  - b) **the selling price of services sold**
  - c) the selling price of tangible assets sold
  - d) value added tax
  - e) sales discounts and sales returns
2. Examples of other revenues can be
  - a) the selling price of services sold
  - b) gain on sale of securities
  - c) **gain on sale of fixed assets**
  - d) interest received
  - e) **grants received**
3. Examples of other expenses can be
  - a) **loss on sale of fixed assets**
  - b) interests paid
  - c) dividends paid
  - d) material costs
  - e) wages and salaries

4. Operating expenses typically include
- a) the direct manufacturing cost of products sold
  - b) administrative expenses**
  - c) general expenses**
  - d) losses on selling securities
  - e) dividends paid
5. Which of the following items should be presented among financial revenues?
- a) interest income**
  - b) gains on selling tangible assets
  - c) grants received
  - d) dividends received**
  - e) gain on sale of securities**
6. Which of the following should be presented as financial expenses?
- a) dividends paid
  - b) loss on sale of securities**
  - c) loss on foreign currency items**
  - d) interests paid**
  - e) depreciation expense
7. Earnings per share (EPS) is calculated as
- a) Sales revenue / number of shares
  - b) Operating profit / number of shares
  - c) Profit before tax / number of shares
  - d) Net profit / number of shares**
  - e) Dividends / number of shares
8. Select the right statement(s).
- a) The operating profit is the difference between sales revenue and operating expenses.
  - b) The operating profit is the difference between the gross margin and the operating expenses, corrected with other revenues and other expenses.**
  - c) The operating profit is the difference between all revenues and all expenses.
  - d) The net profit is the difference between all revenues and all expenses.**
9. Material expenses may include
- a) the purchase cost of materials used**
  - b) wages and salaries
  - c) contributions related to wages (i.e. social security)
  - d) the fee paid to an external consultant**
  - e) the monthly electricity bill**
10. Personnel expenses may include
- a) cost of fuel
  - b) wages and salaries**
  - c) salary-related contributions (i.e. social security)**
  - d) fee paid to an external consultant
  - e) rental fee

11. If the company produced 5000 units of finished products and sold 6000 units in the current year, the number presented as 'change in inventories' will be

- a) positive
- b) zero
- c) negative**
- d) it is not possible to sell 6000 units

12. Select the correct equation(s).

- a)  $\text{Cost of sales} + \text{Operating expenses} = \text{Material expenses} + \text{Personnel expenses} + \text{Depreciation expense}$
- b)  $\text{Cost of sales} + \text{Operating expenses} = \text{Material expenses} + \text{Personnel expenses} + \text{Depreciation expense} + \text{Change in inventories}$
- c)  $\text{Cost of sales} + \text{Operating expenses} = \text{Material expenses} + \text{Personnel expenses} + \text{Depreciation expense} - \text{Change in inventories}$**
- d)  $\text{Sales revenue} - \text{Cost of sales} - \text{Operating expenses} = \text{Sales revenue} - \text{Material expense} - \text{Personnel expense} - \text{Depreciation expense} + \text{Change in inventories}$**

## Chapter 5

### Deferrals and accruals

#### Exercise – Solution

- a) The company paid the subscription fee of a journal for year 2020 (80 USD) in advance. The invoice was received on 18 December 2019.

*The expense of 80 USD was recorded on 18 Dec:*

*Expenses + 80  
Cash – 80*

*However, it belongs to the following year. Therefore, it is a prepaid expense.*

*The year-end adjusting entry is:*

*Prepaid expenses + 80  
Expenses – 80*

*The deferral/accrual in the balance sheet:*

*Prepaid expense      80 USD*

- b) The firm produced an invoice about consulting services rendered to a customer in 2019 (in the value of 3 200 USD). The date of the invoice is 8 January 2020.

*The revenue of 3 200 USD has not been recorded for 2019, although it belongs to that year. So it must be presented in the 2019 balance sheet as an accrued revenue.*

*The year-end adjusting entry is:*

*Accrued revenues + 3 200  
Revenues + 3 200*

*The deferral/accrual in the balance sheet:*

*Accrued revenue      3 200 USD*

- c) An invoice was received on 5 January 2020, which is a 40 USD telephone bill for December 2019.

*The 40 USD expense belongs to 2019, although it was not recorded (the bill was not received until 31 Dec). It is an accrued expense.*

*The year-end adjusting entry is:*

*Expenses + 40  
Accrued expenses + 40*

*The deferral/accrual in the balance sheet:*

*Accrued expense      40 USD*

- d) The company agreed with a customer to render a service in January 2020. However, the 580 USD invoice was produced in advance, on 24 December 2019.

*The revenue of 580 USD was collected in advance, on 24 December:*

*Cash + 580*

*Revenues + 580*

*However, the revenue belongs to 2014, so it should be postponed to 2014 → it is an unearned revenue.*

*The year-end adjusting entry is:*

*Revenues – 580*

*Unearned revenues + 580*

*The deferral/accrual in the balance sheet:*

*Unearned revenue    580 USD*

- e) The company granted a loan of 4 000 USD to a partner company on 1 September 2019 with an interest rate of 15%. The loan will be repaid during 4 years, with a 1 000 USD capital redemption on 1 September every year plus interest.

*The proportionate interest income for the period 1 Sept – 31 Dec should be presented in the balance sheet as an accrued revenue.*

*The year-end adjusting entry is:*

*Accrued revenues + 200      (4000\*0.15/12 months \* 4 months = 200 USD)*

*Revenues + 200*

*The deferral/accrual in the balance sheet:*

*Accrued revenue      200 USD*

- f) A 10 000 USD bank credit was received on March 31 2019. The term is 5 years, the interest rate is 12%, a constant 2 000 USD instalment plus interest must be paid on 31 March every year.

*The proportionate interest expense for the period 31 Mar – 31 Dec should be presented as an accrued expense.*

*The year-end adjusting entry is:*

*Expenses + 900      (10000\*0.12 / 12 months \* 9 months)*

*Accrued expenses + 900*

*The deferral/accrual in the balance sheet:*

*Accrued expense      900 USD*



**Test questions - Solution**

Select the correct answer(s).

1. Select the right statement(s).
  - a) **Prepaid expenses and accrued revenues are presented among Current assets.**
  - b) Accrued revenues and accrued expenses are presented among Current liabilities.
  - c) **Accrued revenues are Assets, while unearned revenues are Liabilities in the balance sheet.**
  - d) Both accrued revenues and unearned revenues are Assets in the balance sheet.
2. Which of the following deferrals and accruals increase the current year's profits?
  - a) **Prepaid expense**
  - b) Accrued expense
  - c) **Accrued revenue**
  - d) Unearned revenue
3. Which of the following deferrals and accruals reduce the current year's profits?
  - a) **Accrued expense**
  - b) Prepaid expense
  - c) **Unearned revenue**
  - d) Accrued revenue
4. Which of the following accounting principles is the basis for recording deferrals and accruals?
  - a) money measurement
  - b) going concern
  - c) **matching**
  - d) materiality
5. Which of the following are presented among Current assets?
  - a) prepaid expenses and accrued expenses
  - b) unearned revenues and accrued revenues
  - c) accrued expenses and unearned revenues
  - d) **prepaid expenses and accrued revenues**
6. Which of the following are presented among Current liabilities?
  - a) **accrued expenses and unearned revenues**
  - b) prepaid expenses and accrued revenues
  - c) prepaid expenses and accrued expenses
  - d) unearned revenues and accrued revenues

## Chapter 6

### The basics of book-keeping

#### Test questions - Solution

Select the correct answer(s).

1. Which of the following transactions increase both Assets and Liabilities?
  - a) settlement of a supplier's account by a promissory note
  - b) purchase of raw materials for cash
  - c) increasing the capital from retained earnings
  - d) receipt of a loan from another company**
  - e) purchase of goods with a 10-day deadline for payment**
2. Which of the following transactions do *not* affect Liabilities?
  - a) withdrawal of cash from the company's bank account**
  - b) payment to a supplier by bank transfer
  - c) settlement of debt
  - d) granting a loan to another company**
  - e) receipt of a bank loan
3. Which of the following are balance sheet accounts?
  - a) interest income
  - b) gain on sale of securities
  - c) raw materials**
  - d) capital surplus**
  - e) notes payable**
4. Which of the following are income statement accounts?
  - a) cost of sales**
  - b) buildings
  - c) retained earnings
  - d) loss on sale of tangible assets**
  - e) interest expense**
5. Select the accounts that normally have a Debit balance.
  - a) raw materials**
  - b) accounts payable
  - c) cost of sales**
  - d) interest income
  - e) share capital
6. Select the accounts that normally have a Credit balance.
  - a) long-term debt**
  - b) gain on sale of fixed assets**
  - c) exchange losses
  - d) accounts receivable
  - e) sales revenue**

7. Select the accounts that can have either a Debit or a Credit balance.

- a) finished products
- b) net profit for the year**
- c) cash
- d) share capital
- e) retained earnings**

8. Which of the following steps are year-end adjustments?

- a) opening of accounts
- b) recording the depreciation expense**
- c) re-classification of assets and liabilities**
- d) recording the payments to suppliers
- e) deferrals and accruals**

## Chapter 7

### Accounting for fixed assets

#### Exercise 1. - Solution

##### a) Recording the transactions on T-accounts:

Dr+		Buildings		Cr-	
B:	342 000	2/		96 000	
Dr+		Office equipment		Cr-	
B:	12 400	4/		800	
Dr+		Accumulated depr. of tangibles		Cr-	
2/	20 000	B:		64 800	
4/	680	7/		15 250	
Dr+		Cash		Cr-	
B:	6 500	6/		4 000	
Dr+		Accounts receivable		Cr-	
2/	80 000	5/		80 000	
Dr+		Loss on disposal of tangible assets		Cr-	
4/	120				
Dr+		Production equipment		Cr-	
B:	15 700				
1/	8 000				
Dr+		Vehicles		Cr-	
B:	36 500				
6/	4 000				
Dr+		Bank account		Cr-	
B:	49 600	3/		8 000	
5/	80 000				
Dr-		Accounts payable		Cr+	
3/	8 000	1/		8 000	
Dr-		Gain on sale of tangible assets		Cr+	
		2/		4 000	
Dr+		Depreciation expense		Cr-	
7/	15 250				

##### b) Book value of Tangible assets at the end of the period:

Buildings Dr. balance:	246 000 (+)
Production equipment Dr. balance:	23 700 (+)
Office equipment Dr. balance:	11 600 (+)
Vehicles Dr. balance:	40 500 (+)
Accumulated depreciation Cr. balance:	59 370 (-)
<b>Total book value</b>	<b>262 430 EUR</b>

##### c) Effect of the transactions on Operating profit:

Gain on sale of tangible assets Cr. balance:	4 000 (+)
Loss on disposal of tangible assets Dr. balance:	120 (-)
Depreciation expense Dr. balance:	15 250 (-)
<b>Total effect on Operating profit</b>	<b>-11 370 EUR</b>

**Exercise 2. - Solution**

- 1) Dr. Shares 60 000  
Cr. Cash 60 000  
Purchase of shares (60 000 EUR / 500 units = 120 EUR/unit)
- 2) Dr. Cash 28 000 (200 units \* 140 EUR/unit)  
Cr. Shares 24 000 (200 units \* 120 EUR/unit)  
Cr. Gain on sale of securities 4 000  
Sale of 200 units
- 3) Dr. Cash 2 400  
Cr. Dividend income 2 400  
Dividends for the year (300 units \* 8 EUR/unit)

**Exercise 3. - Solution**

Dr+	Bonds	Cr-	Dr+	Cash	Cr-
1 Jul/ 30 000	1 Oct/ 15 000		B: ...	1 Jul/ 30 000	
			1 Oct/ 17 000		
Dr-	Interest income	Cr+	Dr+	Bank account	Cr-
	1 Oct/ 900		1 Oct/ 900		
	31 Dec/ 450				
Dr+	Accrued revenues	Cr-	Dr-	Gain on sale of securities	Cr+
31 Dec/ 450				1 Oct/ 2 000	

**Calculations:***1 July: purchase of 300 units*Purchase price paid (in cash) =  $300 * 100 = 30\,000$ *1 Oct: receipt of interest*Interest received for the quarter (by bank transfer) =  
=  $300 * 100 * 0.12 / 12 \text{ months} * 3 \text{ months} (1 \text{ Jul} - 1 \text{ Oct}) = 900$ *1 Oct: sale of 150 units*

Selling price received (in cash) = 17 000

Book value to be removed =  $30\,000 / 300 \text{ units} * 150 \text{ units} = 15\,000$ Gain/loss on sale =  $(17\,000 - 15\,000) = + 2\,000$  (GAIN)*31 December: time-proportionate interest income for the year:* $150 * 100 * 0.12 / 12 \text{ months} * 3 \text{ months} (1 \text{ Oct} - 1 \text{ Dec}) = 450$

**Effect of the transactions on profits in the current year:**

Aggregate balance of income statement accounts:

Interest income Cr. balance =	1 350	(+)
Gain on sale of securities Cr. balance =	2 000	(+)
<b>Total effect on profits</b>	<b>+ 3 350</b>	<b>EUR</b>

**Exercise 4. - Solution***1 September 2019:*

Dr. Long-term receivables	10 000
Cr. Bank account	10 000
Granting the loan	

*31 December 2019:*

Dr. Accrued revenues	500
Cr. Interest income	500
Proportionate interest for the year ( $10\,000 * 0.15 / 12 \text{ months} * 4 \text{ months}$ )	

Dr. Receivables	2 000
Cr. Long-term receivables	2 000
Re-classification of the two instalments due within 1 year (1 March, 1 September) (semi-annual instalment = $10\,000 \text{ EUR} / 5 \text{ years} / 2 = 1\,000 \text{ EUR}$ )	

*1 January 2020:*

Dr. Interest income	500
Cr. Accrued revenues	500
Reversing entry	

*1 March 2020*

Dr. Bank account	1 000
Cr. Receivables	1 000
Receipt of the semi-annual instalment	
Dr. Bank account	750
Cr. Interest income	750
Receipt of the semi-annual interest ( $10\,000 * 0.15 / 12 \text{ months} * 6 \text{ months}$ )	

*1 September 2020*

Dr. Bank account	1 000
Cr. Receivables	1 000
Receipt of the semi-annual instalment	

Dr. Bank account	675
Cr. Interest income	675

Receipt of the semi-annual interest ( $9\,000 * 0.15 / 12 \text{ months} * 6 \text{ months}$ )

*31 December 2020:*

Dr. Accrued revenues	400
Cr. Interest income	400

Proportionate interest for the year ( $8\,000 * 0.15 / 12 \text{ months} * 4 \text{ months}$ )

Dr. Receivables	2 000
Cr. Long-term receivables	2 000

Re-classification of the two instalments due within 1 year

## Chapter 8

### Accounting for current assets

### Exercise 1. - Solution

Opening balances:

Raw materials	4 800	(1 000 kg → 4.8 USD/unit)
Merchandise goods “A”	3 600	(300 units → 12 USD/unit)
Merchandise goods “B”	10 000	(500 units → 20 USD/unit)
Cash	8 400	
Bank account	14 600	

***a) Recording the transactions during August:***

- |    |   |       |
|----|---|-------|
| 1) | Dr. Raw materials   | 2 250 |
|    | Cr. Accounts payable  | 2 250 |
|    | Purchase of materials (450 kg * 5 USD/kg)   |       |
| 2) | Dr. Accounts receivable   | 1 600 |
|    | Cr. Sales revenue   | 1 600 |
|    | Selling price   |       |
|    | Dr. Cost of sales   | 1 200 |
|    | Cr. Merchandise goods "A"   | 1 200 |
|    | Decrease in inventory (100 units * 12 USD/unit)                                   |       |
| 3) | Dr. Accounts payable  | 2 250 |
|    | Cr. Bank account  | 2 250 |
|    | Payment to the supplier   |       |
| 4) | Dr. Accounts receivable   | 5 800 |
|    | Cr. Sales revenue   | 5 800 |
|    | Selling price   |       |
|    | Dr. Cost of sales   | 4 000 |
|    | Cr. Merchandise goods "B"   | 4 000 |
|    | Decrease in inventory (200 units * 20 USD/unit)                                   |       |
| 5) | Dr. Material expense  | 5 800 |
|    | Cr. Raw materials   | 5 800 |
|    | Using materials for production<br>(FIFO: 1000 kg * 4.8 USD/kg + 200kg * 5 USD/kg) |       |
| 6) | Dr. Sales revenue   | 160   |
|    | Cr. Accounts receivable   | 160   |
|    | Return from the customer (1600*10%)   |       |



- Dr. Merchandise goods "A" 120  
 Cr. Cost of sales 120  
 Increase in inventory (1200\*10%)
- 7) Dr. Sales revenue 290  
 Cr. Accounts receivable 290  
 Allowance offered to the customer (5800\*5%)
- 8) Dr. Cash 1 440  
 Cr. Accounts receivable 1 440  
 Receipt of the receivable in cash (1600 – 160)
- 9) Dr. Bank account 5 510  
 Cr. Accounts receivable 5 510  
 Receipt of the receivable by bank transfer (5800 – 290)
- 10) Dr. Bank account 3 000  
 Cr. Cash 3 000  
 Paying money into the bank account

***b) Determining the ending value of inventories***

Raw materials Dr. balance = 4 800 + 2 250 – 5 800 = **1 250** (250 kg\*5 USD/kg)

Merchandise goods "A" Dr. balance = 3 600 – 1 200 + 120 = **2 520** (210 units\*12 USD/unit)

Merchandise goods "B" Dr. balance = 10 000 – 4 000 = **6 000** (300 units\*20 USD/unit)

**Total ending inventory 9 770 USD**

***c) Profit/loss originating from sales***

Sales revenue			
6/	160	2/	1 600
7/	290	4/	5 800
		Cr.bal.	6 950
Cost of sales			
2/	1 200	6/	120
4/	4 000		
Dr.bal.	5 080		

***Profit =***  
***6 950 – 5 080 =***  
***= + 1 870 USD***

**Exercise 2. - Solution****a) Completing the missing figures**

Merchandise goods			
1/	80 000	3/	80 000

Accounts payable			
2/	80 000	1/	80 000

Bank account			
B:	140 000	2/	80 000
4/	110 000		

Accounts Receivable			
3/	110 000	4/	110 000

Sales Revenue			
		3/	110 000

Cost of Sales			
3/	80 000		

**b) Explanation of the transactions**

1. Merchandise goods were purchased for \$80 000.
2. The purchase price was paid to the supplier by bank transfer.
3. The total inventory was sold for \$110 000.
4. The selling price was received from the customer by bank transfer.

**c) Profit generated**

Sales revenue Cr. balance:	\$110 000 (+)
Cost of sales Dr. balance:	\$ 80 000 (-)
<b>Profit</b>	<b>\$ 30 000</b>

**Exercise 3. - Solution**

Dr+	Merchandise goods	Cr-
B:	300 000	1/ 160 000

Dr+	Accounts receivable	Cr-
1/	240 000	2/ 240 000

Dr+	Bank account	Cr-
2/	240 000	3/ 120 000

Dr+	Cash	Cr-
B:	520 000	
3/	120 000	

Dr-	Sales revenue	Cr+
	1/	240 000

Dr+	Cost of sales	Cr-
1/	160 000	

**Calculations:**

Sales revenue = 800 units \* \$300/unit = \$ 240 000

Cost of sales = 800 units \* \$200/unit = \$ 160 000

Money withdrawn from the bank = \$ 240 000 / 2 = \$ 120 000

**Balances:**

Merchandise goods: Dr. balance \$ 140 000

Cash: Dr. balance: \$ 640 000

Accounts receivable: no balance

**Exercise 4. - Solution**

*1 March:*

Dr. Short-term loans granted	2 000	
Cr. Bank account	2 000	
Granting the loan		

*1 June:*

Dr. Bank account	1 075	
Cr. Short-term loans granted	1 000	
Cr. Interest income	75	(2000*0.15/12 months*3 months)

*1 September:*

Dr. Bank account	1 038	
Cr. Short-term loans granted	1 000	
Cr. Interest income	38	(1000*0.15/12 months*3 months)

## Chapter 9

### Accounting for liabilities and shareholders' equity

#### Exercise 1. - Solution

*1 October 2019:*

Dr. Bank account	8 000
Cr. Long-term debt	8 000
Receipt of the loan	

*31 December 2019:*

Dr. Interest expense	240	
Cr. Accrued expenses	240	
Proportionate interest expense for the year		
(8000*0.12/12 months * 3 months [1 Oct - 31Dec])		
Dr. Long-term debt	4 000	
Cr. Short-term debt	4 000	
Re-classification of the instalment due in the following year		

*1 January 2020:*

Dr. Accrued expenses	240
Cr. Interest expense	240
Reversing entry	

*1 October 2020:*

Dr. Short-term debt	4 000	
Dr. Interest expense	960	(8000*0.12)
Cr. Bank account	4 960	
Payment of the first instalment		

*31 December 2020:*

Dr. Interest expense	120	
Cr. Accrued expenses	120	
Proportionate interest expense for the year		
(4000*0.12/12 months * 3 months [1 Oct - 31Dec])		
Dr. Long-term debt	4 000	
Cr. Short-term debt	4 000	
Re-classification of the instalment due in the following year		

*1 January 2021:*

Dr. Accrued expenses	120	
Cr. Interest expense	120	
Reversing entry		

*1 October 2021:*

Dr. Short-term debt	4 000	
Dr. Interest expense	480	(4000*0.12)
Cr. Bank account	4 480	
Payment of the second instalment		

## Exercise 2. - Solution

*1 March:*

Dr. Bank account	2 500	
Cr. Short-term debt	2 500	
Receipt of the bank loan		

*1 June:*

Dr. Short-term debt	1 500	
Dr. Interest expense	94	(2500*0.15/12 months* 3 months)
Cr. Bank account	1 594	
Payment of the first instalment		

*1 September:*

Dr. Short-term debt	1 000	
Dr. Interest expense	38	(1000*0.15/12 months* 3 months)
Cr. Bank account	1 038	
Payment of the second instalment		

**Exercise 3. - Solution**

Dr-	Sales revenue	Cr+
31Dec/	25 000	B: 25 000

Dr-	Interest income	Cr+
31Dec/	2 100	B: 1 500
		31Dec/ 600

Dr-	Other income	Cr+
31Dec/	3 000	B: 3 000

Dr+	Cost of sales	Cr-
B:	12 000	31Dec/ 12 000

Dr+	Salary expense	Cr-
B:	4 000	31Dec/ 4 000

Dr+	Interest expense	Cr-
B:	800	31Dec/ 1 600
31Dec/	800	

Dr+	Other expense	Cr-
B:	1 000	31Dec/ 1 000

Dr+	Depreciation expense	Cr-
31Dec/	1 500	31Dec/ 1 500

*income statement accounts*

Dr+	Accumulated depreciation of assets	Cr-
	31Dec/	1 500

Dr+	Accrued revenues	Cr-
31Dec/	600	

Dr-	Accrued expenses	Cr+
	31Dec/	800

*balance sheet accounts used for adjusting entries*

Dr+	Income summary	Cr-
31Dec/ 12 000	31Dec/ 25 000	
31Dec/ 4 000	31Dec/ 2 100	
31Dec/ 1 600	31Dec/ 3 000	
31Dec/ 1 000		
31Dec/ 1 500		
31 Dec/ 2 000		
31Dec/ 8 000		

Dr+	Income tax liability	Cr-
	31Dec/	2 000

Dr+	Tax expense	Cr-
31Dec/ 2 000	31Dec/ 2 000	

Dr+	Net income for the year	Cr-
	31Dec/	8 000

*other accounts used for closing*

**Profit before tax = (25000+2100+3000)-(12000+4000+1600+1000+1500) = 10 000**

**Tax expense = 10 000 \* 20% = 2 000**

**Net profit = 10 000 - 2 000 = 8 000**

**Exercise 4. - Solution**

Dr -	Sales revenue	Cr+
31Dec/	75 400	B: 75 400

Dr-	Other revenues	Cr+
31Dec/	2 000	B: 2 000

Dr+	Cost of sales	Cr-
B:	42 000	31Dec/ 42 000

Dr+	Salary expense	Cr-
B:	18 000	31Dec/ 18 000

Dr+	Depreciation expense	Cr-
B:	1 400	31Dec/ 1 400

Dr+	Other operating expense	Cr-
B:	3 800	31Dec/ 3 800

Dr-	Interest income	Cr+
31Dec/	3 100	B: 3 100

Dr+	Interest expense	Cr-
B:	5 300	31Dec/ 5 300

Dr-	Income summary	Cr+
31Dec/	42 000	31Dec/ 75 400
31Dec/	18 000	31Dec/ 2 000
31Dec/	1 400	31Dec/ 3 100
31Dec/	3 800	
31Dec/	5 300	
31Dec/	2 000	
31Dec/	8 000	

Dr-	Income tax liability	Cr+
	31Dec/	2 000

Dr-	Tax expense	Cr+
31Dec/	2 000	31Dec/ 2 000

Dr-	Net profit	Cr+
	31Dec/	8 000

**Profit before tax = 75 400 + 2 000 + 3 100 - 42 000 - 18 000 - 1 400 - 3 800 - 5 300 = 10 000**

**Tax liability = 10 000 \* 20% = 2 000**

**Net profit = 10 000 - 2 000 = 8 000**

**POST-CLOSING TRIAL BALANCE**

<b>Name of the account</b>	<b>Debit</b>						<b>Credit</b>					
Software				8	8	0	0					
Machines			2	6	5	0	0					
Accumulated depreciation of machines										8	4	0
Raw materials			1	0	5	0	0					
Accounts receivable				6	7	0	0					
Cash				5	9	0	0					
Paid-in capital										2	0	0
Retained Earnings										2	0	0
Long-term debt										7	8	0
Short-term debt										2	1	0
Accounts payable										8	1	0
Net profit for the year										8	0	0
Income tax liability										2	0	0
<b>TOTAL:</b>				<b>5</b>	<b>8</b>	<b>4</b>	<b>0</b>			<b>5</b>	<b>8</b>	<b>4</b>



**BALANCE SHEET**  
**31 December**

***Assets***

Intangible assets	8 800
Tangible assets (26 500 – 8 400)	18 100
Investments	0
<b>Total fixed assets</b>	<b>26 900</b>
Inventories	10 500
Receivables	6 700
Temporary investments	0
Cash	5 900
Prepaid expenses and accrued revenues	0
<b>Total current assets</b>	<b>23 100</b>
<b>TOTAL ASSETS</b>	<b>50 000</b>

***Shareholders' Equity & Liabilities***

Paid-in capital	20 000
Capital surplus	0
Retained earnings	2 000
Net profit for the year	8 000
<b>Total shareholders' equity</b>	<b>30 000</b>
Long-term liabilities	7 800
Current liabilities (2 100 + 8 100 + 2 000)	12 200
Unearned revenues and accrued expenses	0
<b>Total liabilities</b>	<b>20 000</b>
<b>TOTAL EQUITIES</b>	<b>50 000</b>

## Chapter 10

### Summary of the accounting cycle

#### The accounting cycle: Complex exercise - Solution

"Starter" Ltd. is a merchandising company that started its operations in the current year, on 15 February. The accounts affected by the current year's transactions have the following balances on 31 December (in EUR):

Name of the account	Debit	Credit
Software	12 500	
Buildings	33 400	
Equipment	20 100	
Accumulated depreciation of tangible assets		6 000
Merchandise goods	16 200	
Accounts receivable	13 000	
Notes receivable	1 100	
Marketable securities	3 800	
Cash	7 800	
Bank account	18 500	
Accrued revenues	2 600	
Paid-in capital		40 000
Capital surplus		18 700
Other reserves		3 300
Long-term debt		14 800
Short term debt		18 200
Accounts payable		6 800
Accrued expenses		3 200
Sales revenue		182 600
Cost of sales	113 300	
Salary expense	32 700	
Depreciation expense	6 000	
Other operating expenses	12 600	
Interest income		2 400
Gain on sale of securities		800
Interest expense	3 200	

**The above balances do not contain the effects of the following transactions:**

- 14 March:** Shares "A" were bought for short-term investment. The 1 400 EUR purchase price was paid in cash.
- 20 April:** The firm purchased new office equipment for 15 000 EUR. The supplier offered a 10-day deadline for payment. The planned useful life of the equipment is 5 years, and it will be depreciated according to the straight-line method (the residual value is zero).
- 30 April:** The purchase price of the new equipment was paid by bank transfer.
- 15 May:** The firm borrowed 8 000 EUR from its bank for one year (the money was deposited to the bank account). The loan will be repaid in two equal instalments (on 15 November and on 15 May next year), the interest rate is 15%.

- 1 June:** The firm bought 90 units of newly issued "X" corporate bonds (they plan to sell them next year). Their issue price (identical with the face value) was 100 EUR per unit, the interest rate is 12% (paid semi-annually). The purchase price was immediately paid by bank transfer.
- 15 August:** Shares "A" were sold for cash. The selling price was 1 800 EUR.
- 31 August:** Merchandise goods were sold to a customer. The book value of the goods was 6 400 EURO, the selling price was 8 800 EURO. The firm offered 45 days for payment to the customer.
- 1 October:** The company bought new software on credit, for 4 000 EUR.
- 15 October:** The selling price of merchandise goods sold on 31 August was received from the customer by bank transfer.
- 15 November:** The first instalment of the bank loan (15 May) and the appropriate interest were paid by bank transfer.
- 1 December:** The first semi-annual interest of the "X" bonds was received by bank transfer.

**REQUIRED:**

1. Put the balances on the appropriate side of the T-accounts given and record the additional transactions.
2. Record the *adjusting entries* on 31 December.
3. Record the *closing entries* if the corporate income tax rate is 10%.
4. Prepare the *post-closing trial balance*.
5. Prepare the *balance sheet* and the *income statement*.

**Software**

B:	12 500	
1Oct/	4 000	

**Buildings**

B:	33 400	

**Equipment**

B:	20 100	
20Apr/	15 000	

**Acc. depreciation of tangibles**

	B:	6 000
	31Dec/	2 083

**Merchandise goods**

B:	16 200	31Aug/	6 400

**Accounts receivable**

B:	13 000	15Oct/	8 800
31Aug/	8 800		

**Notes receivable**

B:	1 100	

**Marketable securities**

B:	3 800	15Aug/	1 400
14Mar/	1 400		
1Jun/	9 000		

**Cash**

B:	7 800	14Mar/	1 400
15Aug/	1 800		

**Bank account**

B:	18 500	30Apr/	15 000
15May/	8 000	1Jun/	9 000
15Oct/	8 800	15Nov/	4 600
1Dec/	540		

**Accrued revenues**

B:	2 600	
31Dec/	90	

**Paid-in capital**

	B:	40 000

**Capital surplus**

	B:	18 700

**Other reserves**

	B:	3 300

**Long-term debt**

	B:	14 800
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**Short-term debt**

15Nov/	4 000	B:	18 200
		15May/	8 000

**Accounts payable**

30Apr/	15 000	B:	6 800
		20Apr/	15 000
		10Oct/	4 000

**Accrued expenses**

		B:	3 200
		31Dec/	75

**Sales revenue**

31Dec/	191 400	B:	182 600
		31Aug/	8 800

**Cost of sales**

B:	113 300	31Dec/	119 700
31Aug/	6 400		

**Salary expense**

B:	32 700	31Dec/	32 700
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**Depreciation expense**

B:	6 000	31Dec/	8 083
31Dec/	2 083		

**Other operating expenses**

B:	12 600	31Dec/	12 600
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**Interest income**

31Dec/	3 030	B:	2 400
		1Dec/	540
		31Dec/	90

**Interest expense**

B:	3 200	31Dec/	3 875
15Nov/	600		
31Dec/	75		

**Gain on sale of securities**

31Dec/	1 200	B:	800
		15Aug/	400

**Income summary**

31Dec/	119 700	31Dec/	191 400
31Dec/	32 700	31Dec/	3 030
31Dec/	8 083	31Dec/	1 200
31Dec/	12 600		
31Dec/	3 875		
31Dec/	1 867		
31Dec/	16 805		

**Income tax liability**

		31Dec/	1 867
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**Tax expense**

31Dec/	1 867	31Dec/	1 867
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**Net income**

		31Dec/	16 805
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**Calculations:*****1 June:***

Purchase price paid =  $90 * 100 = 9\,000$  EUR

***15 August:***

Selling price = 1 800 EUR

Book value = 1 400 EUR

Gain on sale = 400 EUR

***15 November:***

Capital instalment =  $8\,000 / 2 = 4\,000$  EUR

Interest for the period =  $8\,000 * 0.15 / 12 \text{ months} * 6 \text{ months [15May-15Nov]} = 600$  EUR

***1 December:***

Semi-annual interest of the "X" bonds =

=  $90 \text{ units} * 100 \text{ EUR/unit} * 0.12 / 12 \text{ months} * 6 \text{ months [1Jun-1Dec]} = 540$  EUR

***31 December – year-end adjusting entries***

Depreciation of the office equipment =

=  $15\,000 / 5 \text{ years} / 360 \text{ days} * 250 \text{ days [20Apr-31Dec]} = 2\,083$  EUR

Accrued interest expense of the bank loan =

=  $4\,000 * 0.15 / 12 \text{ months} * 1.5 \text{ month [15Nov-31Dec]} = 75$  EUR

Accrued interest income of "X" bonds =

=  $90 \text{ units} * 100 \text{ EUR/unit} * 0.12 / 12 \text{ months} * 1 \text{ month [1Dec-31Dec]} = 90$  EUR

***Profit before tax, dividends, net profit for the year***

Profit before tax = balance of Income summary =  $(191\,400 + 3\,030 + 1\,200) - (119\,700 + 32\,700 + 8\,083 + 12\,600 + 3\,875) = 195\,630 - 176\,958 = 18\,672$  EUR

Tax expense =  $18\,672 * 0.1 = 1\,867$  EUR

Net profit =  $18\,672 - 1\,867 = 16\,805$  EUR

**POST-CLOSING TRIAL BALANCE, 31 December**

No.	Name of the account	Debit						Credit					
	Software			1	6	5	0	0					
	Buildings			3	3	4	0	0					
	Equipment			3	5	1	0	0					
	Accumulated depreciation of tangible assets										8	0	8 3
	Merchandise goods				9	8	0	0					
	Accounts receivable			1	3	0	0	0					
	Notes receivable				1	1	0	0					
	Marketable securities			1	2	8	0	0					
	Cash				8	2	0	0					
	Bank account				7	2	4	0					
	Accrued revenues				2	6	9	0					
	Paid-in capital										4	0	0 0 0
	Retained earnings										1	8	7 0 0
	Other reserves											3	3 0 0
	Long-term debt											1	4 8 0 0
	Short-term debt											2	2 2 0 0
	Accounts payable											1	0 8 0 0
	Accrued expenses												3 2 7 5
	Income tax liability												1 8 6 7
	Net income												1 6 8 0 5
<b>TOTAL:</b>				<b>1</b>	<b>3</b>	<b>9</b>	<b>8</b>	<b>3</b>	<b>0</b>		<b>1</b>	<b>3</b>	<b>9 8 3 0</b>

**BALANCE SHEET, 31 December***Assets**Sh. Equity & Liabilities*

Intangible assets	16 500	Paid-in capital	40 000
Tangible assets (33400+35100-8083)	60 417	Capital surplus	0
Investments	0	Other reserves	3 300
<b>Total Fixed Assets</b>	<b>76 917</b>	Retained earnings	18 700
Inventories	9 800	Net income	16 805
Receivables (13000+1100)	14 100	<b>Total Sh. Equity</b>	<b>78 805</b>
Marketable securities	12 800	Long-term liabilities	14 800
Cash (8200+7240)	15 440	Current liabilities (22200+10800+1867)	34 867
Prepaid expenses and accrued revenues	2 690	Unearned revenues and accrued expenses	3 275
<b>Total Current Assets</b>	<b>54 830</b>	<b>Total Liabilities</b>	<b>52 942</b>
<b>TOTAL ASSETS</b>	<b>131 747</b>	<b>TOTAL SH.E.&amp;LIABILITIES</b>	<b>131 747</b>

**INCOME STATEMENT, Year Ended 31 December**

Net Sales	191 400
Cost of Sales	119 700
Gross Profit	<b>71 700</b>
Salary Expense	32 700
Depreciation expense	8 083
Other operating expense	12 600
<b>Operating Income</b>	<b>18 317</b>
Financial revenues (3 030 + 1 200)	4 230
Financial expenses	3 875
<b>Income before tax</b>	<b>18 672</b>
Tax expense	1 867
<b>Net income</b>	<b>16 805</b>