

**Czech University of Life Sciences Prague**

**Faculty of Economics and Management**

**Department of Economics**



**Master's Thesis**

**Financial Analysis of a Chosen Company**

**Albina Jumabekova**

**© 2022 CZU Prague**

# CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

## DIPLOMA THESIS ASSIGNMENT

Bc. Albina Jumabekova

Economics and Management  
Economics and Management

Thesis title

**Financial Analysis of A Chosen Company**

---

### Objectives of thesis

This diploma thesis deals with the financial analysis of a selected company – the Commonwealth Handling Equipment Pool (CHEP), subsidiary of Brambles Ltd., for a particular period from 2015 till 2020. The main objectives of this work is to evaluate the financial health of the CHEP company, make conclusions and recommendations for improving the company's economic results. The partial goal of the work is to define important global trends and industry factors affecting the company's financial situation.

### Methodology

This work is divided into two basic parts: theory and practice. The theoretical part is based on the analysis of the professional literature, scientific articles, and other printed or electronic sources from the financial field. In this part, the basic concepts, methods and data sources for financial analysis are described. Important indicators of the annual report used for the financial analysis are going to be explained in detail. Concepts of expenses and income, costs and revenues, assets and liabilities, various types of profit, cash flow etc. are described.

The practical part of the work has a top-to-bottom structure. It begins with the global analysis, then continues with the industry analysis and finally moves to the most important part – company financial analysis. The research period covers the years 2015-2020.

The financial analysis begins with an analysis of balance sheet and profit and loss account of the company CHEP CZ, s.r.o., using horizontal and vertical analysis. The next chapter is the analysis of ratios, which contains indicators of profitability, activity, leverage and liquidity. Calculated values in this part of the diploma thesis are already compared with the average values of the corresponding sectors CZ-NACE, which are published by the Ministry of Industry and Trade. The financial analysis of a selected company ends with calculation of bankruptcy and creditworthiness models (Altman model, Kralick's Quicktest).

Based on the obtained results of the financial analysis, conclusions are made about the financial health of the company and its possible future development (opportunities and risks). Recommendations are made for the areas of financial management of the company.

Conclusion comprises a discussion of limitations of this research, critical discussion of results obtained and personal experience in data collection and analysis, summarization of the thesis.

**The proposed extent of the thesis**

60-80 stran

**Keywords**

financial analysis, balance sheet, income statement, liquidity, profitability, solvency, ROA, ROE, vertical and horizontal analyses

---

**Recommended information sources**

ALVAREZ, F. – FRIDSON, M S. Financial statement analysis : a practitioner's guide. New York: J. Wiley, 2002. ISBN 978-0-471-40917-5 HELFERT, E A. Financial analysis: tools and techniques : a guide for managers. New York: McGraw-Hill, 2001. ISBN 0-07-137834-0. HOLEČKOVÁ, J. – GRÜNWARD, R. Finanční analýza a plánování podniku. Praha: Ekopress, 2007. ISBN, 978-80-86929-26-2. ŠTEKER, K. – PAVELKOVÁ, D. – KNÁPKOVÁ, A. – REMEŠ, D. Finanční analýza : komplexní průvodce, s příklady. Praha: Grada Publishing, 2017. ISBN 978-80-271-0563-2. ZUTTER, C J. – GITMAN, L J. Principles of managerial finance, brief. Boston: Pearson Prentice Hall, 2015. ISBN 978-1-292-06010-1

---

**Expected date of thesis defence**

2021/22 WS – FEM

**The Diploma Thesis Supervisor**

Ing. Inna Čábelková, Ph.D.

**Supervising department**

Department of Trade and Finance

Electronic approval: 21. 9. 2021

**prof. Ing. Luboš Smutka, Ph.D.**

Head of department

Electronic approval: 19. 10. 2021

**Ing. Martin Pelikán, Ph.D.**

Dean

Prague on 27. 03. 2022

## **Declaration**

I declare that I have worked on my master's thesis titled "Financial analysis of a selected company" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the master's thesis, I declare that the thesis does not break any copyrights.

In Prague on 4. 12. 2021

---

## **Acknowledgement**

I would like to thank my supervisor, Ing. Inna Čábelková, Ph.D., for the advice and support during my work on this thesis.

# Financial analysis of a selected company

## Abstract

The main objectives of this work are evaluation of the financial health of the CHEP CZ, s.r.o., which deals with pallet pooling service, making conclusions and recommendations for improving the company's economic results. The partial goal of the work was to define important global trends and industry factors affecting the company's financial situation. The analysis of trends and industries and financial analysis of CHEP CZ, s.r.o. within the five-year period 2016-2020 were conducted. Methods, used for this purpose and described in the theoretical part of the thesis, included: vertical and horizontal analysis of financial statements, analysis of profitability, activity, liquidity and solvency ratios, bankruptcy and creditworthiness models (Altman model, Kralicek's Quicktest, IN05). The comparaton of the company was made with the average indicators of the CZ-NACE industry 77 – Rental and leasing activities. Based on the results of the analysis, it is possible to confirm the established research assumption: the CHEP CZ, s.r.o. is a financially stable company. It is a solvent company with the scope for improvement.

**Keywords:** asset structure, bankruptcy and creditworthiness models, Brambles, CHEP, company, financial analysis, profit, ratios.

# Finanční analýza vybrané společnosti

## Abstrakt

Hlavním cílem této práce bylo zhodnocení finančního zdraví společnosti CHEP CZ, s.r.o., která se zabývá paletovým poolingem, vypracování závěrů a doporučení pro zlepšení hospodářských výsledků společnosti. Dílčím cílem práce bylo definovat důležité světové trendy a faktory odvětví, ovlivňující finanční situaci společnosti. Analýza trendů a odvětví a finanční analýza CHEP CZ, s.r.o. byly provedeny v rámci pětiletého období 2016-2020. Metody použité k tomuto účelu byly popsány v teoretické části práce a zahrnovaly: vertikální a horizontální analýzu účetních výkazů, analýzu rentability, aktivity, ukazatelů likvidity a solventnosti, aplikaci bankrotních a bonitních modelů (Altmanův model, Kralickův Quicktest, IN05). Porovnání společnosti bylo provedeno s průměrnými ukazateli odvětví CZ-NACE 77 – Pronájem a leasing. Na základě výsledků analýzy lze potvrdit stanovený výzkumný předpoklad: CHEP CZ, s.r.o. je finančně stabilní společnost. Je to solventní společnost s prostorem pro zlepšení.

**Klíčová slova:** bankrotní a bonitní modely, Brambles, CHEP, finanční analýza, poměrové ukazatele, společnost, struktura aktiv, zisk.

# Table of content

<b>1 Introduction .....</b>	<b>13</b>
<b>2 Objectives and Methodology .....</b>	<b>14</b>
2.1 Objectives.....	14
2.2 Methodology .....	14
<b>3 Literature Review.....</b>	<b>16</b>
3.1 Financial analysis .....	16
3.1.1 The main goals of the financial analysis .....	17
3.1.2 The main users of the results of the financial analysis .....	18
3.2 Information sources for the financial analysis .....	19
3.2.1 Balance sheet.....	20
3.2.2 Profit and loss account (income statement) .....	23
3.2.3 Cash flow statement .....	24
3.3 Analysis of absolute indicators.....	25
3.3.1 Horizontal analysis.....	25
3.3.2 Vertical analysis.....	26
3.4 Analysis of difference indicators.....	27
3.5 Analysis of ratios.....	28
3.5.1 Liquidity ratios .....	29
3.5.2 Solvency ratios .....	29
3.5.3 Activity ratios.....	31
3.5.4 Profitability ratios .....	32
3.6 Bankruptcy and creditworthiness models.....	34
3.6.1 Altman's models .....	35
3.6.2 Kralick Quick test .....	37
3.6.3 IN models.....	38
<b>4 Practical Part.....</b>	<b>39</b>
4.1 Characteristic of the company .....	39
4.1.1 Global trends.....	42
4.1.2 Definition and analysis of the industry (sector CZ-NACE 77: Rental and Leasing activities).....	43
4.1.3 Competition on the market of pallet pooling .....	47
4.1.4 Summary of trend and market analysis.....	48
4.2 Analysis of the absolute indicators.....	49
4.2.1 Vertical analysis of the assets .....	49
4.2.2 Vertical analysis of the liabilities.....	50
4.2.3 Vertical analysis of the costs.....	52



4.2.4	Vertical analysis of the revenues .....	53
4.2.5	Vertical analysis of the profit/loss .....	53
4.2.6	Horizontal analysis of the assets .....	54
4.2.7	Horizontal analysis of the liabilities .....	56
4.2.8	Horizontal analysis of the income statement .....	57
4.3	Analysis of ratios .....	61
4.3.1	Profitability ratios .....	61
4.3.2	Activity ratios .....	63
4.3.3	Liquidity ratios.....	66
4.3.4	Solvency ratios.....	67
4.4	Bankruptcy and creditworthiness models .....	67
4.4.1	Altman’s model .....	68
4.4.2	Kralick Quick test .....	69
4.4.3	IN05 model .....	71
<b>5</b>	<b>Results and Discussion.....</b>	<b>73</b>
<b>6</b>	<b>Conclusion.....</b>	<b>76</b>
<b>7</b>	<b>References .....</b>	<b>77</b>
<b>8</b>	<b>Appendix.....</b>	<b>83</b>

## List of pictures

Figure 1	Classification of ratios .....	28
Figure 2	CHEP's offering of the pallets.....	41
Figure 3	Total assets of the sector CZ-NACE 77-Rental and leasing activities, 2016-2019 .....	44
Figure 4	Revenues from own products and services (CZK thousand) of the sector CZ-NACE 77-Rental and leasing activities, 2016-2019 .....	45
Figure 5	Profit before tax (CZK thousand) of the sector CZ-NACE 77-Rental and leasing activities, 2016-2019.....	45
Figure 6	ROA and ROE of the sector CZ-NACE 77-Rental and leasing activities, 2016-2019.....	46
Figure 7	Liquidity ratios of the sector CZ-NACE 77-Rental and leasing activities, 2016-2019.....	47
Figure 8	Development of relative shares of main asset items, CHEP CZ, s.r.o. (%) .....	50
Figure 9	Development of relative shares of main items of liabilities, CHEP CZ, s.r.o. (%) .....	51
Figure 10	Development of operating, financial and total economic result of the CHEP CZ, s.r.o. (CZK thousand).....	60
Figure 11	Comparison of ROA – CHEP CZ and the industry, 2016-2020 .....	61
Figure 12	Comparison of ROE – CHEP CZ and the industry, 2016-2020.....	62
Figure 13	Comparison of ROS – CHEP CZ and the industry, 2016-2020.....	63
Figure 14	Comparison of the activity turnover ratios – CHEP CZ and the industry, 2016-2020.....	65
Figure 14	Cash conversion cycle of the CHEP CZ, 2016-2020 .....	65
Figure 16	Atman's Z-score model – CHEP CZ, s.r.o., 2016-2020.....	69
Figure 17	IN05 model – CHEP CZ, s.r.o., 2016-2020 .....	72

## List of tables

Table 1	Kralicek quick test .....	37
Table 2	Main information about the CHEP CZ, s.r.o. ....	40
Table 3	Vybrané údaje o odvětví CZ-NACE 77-Rental and leasing activities, 2016-2019 .....	44
Table 4	Vertical analysis of the assets, CHEP CZ, s.r.o. (%).....	49
Table 5	Vertical analysis of the liabilities, CHEP CZ, s.r.o. (%) .....	51
Table 6	Vertical analysis of the costs, CHEP CZ, s.r.o. (%) .....	52
Table 7	Vertical analysis of the revenues, CHEP CZ, s.r.o. (%).....	53
Table 8	Vertical analysis of the profit, CHEP CZ, s.r.o. (%).....	53
Table 9	Horizontal analysis of the assets, CHEP CZ, s.r.o. (absolute changes, CZK thousand).....	54
Table 10	Horizontal analysis of the assets, CHEP CZ, s.r.o. (relative changes, %).....	55
Table 11	Horizontal analysis of the liabilities, CHEP CZ, s.r.o. (absolute changes, CZK thousand).....	56
Table 12	Horizontal analysis of the liabilities, CHEP CZ, s.r.o. (relative changes, %) ..	57
Table 13	Horizontal analysis of the income statement of the CHEP CZ, s.r.o. (absolute changes, CZK thousand), 2016-2020 .....	58
Table 14	Horizontal analysis of the income statement of the CHEP CZ, s.r.o. (relative changes, %).....	59
Table 15	ROA, ROE, ROS of the CHEP CZ, s.r.o. (2016-2020).....	61
Table 16	Activity ratios of the CHEP CZ, 2016-2020 .....	63
Table 17	Capital requirement to cover current assets of the CHEP CZ, 2016-2020.....	66
Table 18	Liquidity ratios of the CHEP CZ, s.r.o. and the industry (2016-2020) .....	66
Table 19	Solvency ratios of the CHEP CZ, s.r.o. and the industry (2016-2020) .....	67
Table 20	Atman's Z-score model – CHEP CZ, s.r.o., 2016-2020.....	68
Table 21	Kralick Quick test – CHEP CZ, s.r.o., 2016-2020 .....	70
Table 22	Cash flow calculation .....	70
Table 23	IN05 model – CHEP CZ, s.r.o., 2016-2020 .....	71

## List of abbreviations

CF	Cash flow
EAT	Earning after tax (net profit)
EBIT	Earnings before interest and tax
EBT	Earnings before tax
IFRS	International Financial Reporting Standards
IPSAS	International Public Sector Accounting Standards
LT	Long-term
MIT	Ministry of Industry and Trade of the Czech Republic
NWC	Net Working Capital
SMEs	Small and Medium Enterprises
ST	Short-term

# 1 Introduction

The relevance of the issues of the financial analysis of a company is great, and it is unacceptable to neglect this area. An enterprise should constantly monitor the financial and economic situation in a business entity, and financial analysis is the main element of financial management, in the basis of which it is decided on further operation of a company. The main goal of financial analysis and assessment is to obtain a clear picture of financial and economic activities for a certain period of time and to search for key factors that influence this activity (Vasilyeva, 2017). It evaluates the financial health of the company, whether it is able to repay loans, invoices, pay wages and salaries to employees on time and in full, and whether it is able to make a profit or increase its equity, etc. The outputs of the financial analysis are interesting for various groups of stakeholders – investors, managers, employees, suppliers, customers. The relevance of the issue lies in the fact that for the successful functioning of an economic entity, it is necessary to timely analyze the level of financial indicators and the dynamics of their development.

This diploma thesis deals with the financial analysis of a selected company – the Commonwealth Handling Equipment Pool (CHEP CZ, s.ro.), subsidiary of Brambles Ltd., for a particular period from 2016 till 2020. Brambles operates in more than 60 countries. It is one of leading supply chain logistics companies and also one of the best sustainable and responsible companies in the category of business services and supply industry in the world (CHEP, 2019). CHEP is a supply chain logistics company specializing in pooling of unit-load equipment and associated services, focusing on the outsourced management of pallets, crates, and containers.

Covid-19 began to affect the business and financial situation of most companies as early as March 2020. In contrast to many industries, business in the logistics sector was positively affected by the pandemic due to growing demand in the B2B and B2C segments. This was due to the blocking measures and the consequent changes in customer behavior through stockpiling and “domestic” consumption. Along with revenue growth, serving additional customer demand, and managing volatility, costs of the logistics companies' increased during the pandemic (especially transportation, handling, and repair costs). Economic slowdowns and declining GDP are factors that negatively affect companies and increase uncertainty about their future development. Reviewing global and industry trends is therefore very important to take into account the financial risks of companies today.

## **2 Objectives and Methodology**

This diploma thesis deals with the financial analysis of a selected company – the Commonwealth Handling Equipment Pool (CHEP CZ, s.r.o.), subsidiary of Brambles Ltd., for a particular five-year period from 2016 till 2020.

### **2.1 Objectives**

The main objectives of this work are to evaluate the financial health of the CHEP company, make conclusions and recommendations for improving the company's economic results.

The partial goal of the work is to define important global trends and industry factors affecting the company's financial situation.

Research hypothesis: the selected company can be assessed as financially stable.

### **2.2 Methodology**

The thesis is divided into two basic parts: theory and practice. The theoretical part is based on the analysis of the professional literature, scientific articles, and other printed or electronic sources from the financial field. In this part, the basic concepts, methods and data sources for financial analysis are described. Important indicators of the annual report used for the financial analysis are going to be explained in detail. Concepts of expenses and income, costs and revenues, assets and liabilities, various types of profit, cash flow etc. are described. This part also includes an important description of the methodology, used in the term of financial analysis.

The practical part of the work has a top-to-bottom structure. It begins with the global analysis, then continues with the industry analysis and finally moves to the most important part – company financial analysis. The research covers five-year period: 2016-2020.

The secondary data are used there: analysis of Ministry of Industry and Trade of the Czech Republic (MIT), articles in electronic resources about the development and trends of the industry and the company, financial statements of the CHEP CZ, s.r.o.

Within the financial analysis, various methods are used to evaluate the structure of assets and costs, analysis of working capital, profit dynamics, indicators of liquidity, profitability, leverage, activity etc. Bankruptcy and creditworthiness models are used to

assess the financial health of companies. For individual calculations of the financial analysis, it is necessary to use numerical data from the financial statements of the selected company.

It should be noted that the company's financial statements, available on the portal eJustice.cz cover the accounting periods from 1 July of the selected year to 30 June of the following year. In this work, an abbreviated designation is used for simplification:

2016 = 1. 7. 2015 – 30. 6. 2016

2017 = 1. 7. 2016 – 30. 6. 2017

.....

2020 = 1. 7. 2019 - 30. 6. 2020

The financial analysis of the company begins with an analysis of balance sheet and profit and loss account of the company CHEP CZ, s.r.o., using horizontal and vertical analysis. The next chapter is the analysis of ratios, which contains indicators of profitability, activity, leverage and liquidity. Calculated values in this part of the diploma thesis are already compared with the average values of the corresponding sector CZ-NACE, which are published by the MIT or can be calculated by own based on MIT data. The financial analysis of a selected company ends with calculation of bankruptcy and creditworthiness models (Altman model, Kralicek's Quicktest, IN05). A specific description of these methods of financial analysis and formulas are given in the theoretical part of the work are not repeated here.

Based on the obtained results of the financial analysis, conclusions are made about the financial health of the company and its possible future development (opportunities and risks). Recommendations are made for the areas of financial management of the company.

Conclusion comprises a discussion of limitations of this research, critical discussion of results obtained and personal experience in data collection and analysis, summarization of the thesis.

### **3 Literature Review**

Due to the current permanently changing economic environment, it is necessary to forecast the future financial development of business entities. No successful company make do without analyzing its financial situation. Financial analysis is one of the basic skills of every financial manager. The conclusions and findings of financial analysis serve not only for strategic and tactical decisions about investments and financing, but also for reporting to owners and creditors (Kislingerová 2010). It is therefore considered, that it is important to clarify the objectives and functions of financial analysis in this part of the thesis. Furthermore, it is necessary to describe the various methods of financial analysis, which will be subsequently applied in the practical part of the thesis.

#### **3.1 Financial analysis**

Financial analysis is an inseparable element of corporate management (Kislingerová and Hnilica 2008). Opinions on the nature of financial analysis usually do not differ and therefore the definitions of financial analysis are usually very similar in the literature.

Salevych and Kobyletskii (2015) describe financial analysis of the enterprise as the process of analysing and reviewing firm's financial statements, which allows to estimate the overall performance of business and its financial health, using different calculations, indicators and trend lines. This means that the content of financial analysis is the analysis of financial statements of the company, its tools are various financial indicators, indicators and trend lines, and the goal – evaluation of the overall performance and financial health. It should be emphasized that the motivation for applying the financial analysis is different for each group of users, so the goals of its using can differed (see chapters 3.1.1. and 3.1.2).

According to Hanif and Mukherjee (2020, p. 5-6), the most commonly used tools of the financial analysis are the following:

- comparative statements (comparing of the financial statements covering several accounting periods; it is a form of horizontal analysis),
- common-size statements (stating the each item of the financial statement as a percentage of total; it is a form of vertical analysis),
- index-number trend analysis,



- ratio analysis,
- cash flow analysis.

### 3.1.1 The main goals of the financial analysis

Robinson et al. (2015, p. 1) states that the main task of financial analysis is „*examining of a company’s performance in the context of its industry and economic environment in order to arrive at a decision or recommendation.*“ Based on this, it can be argued that financial analysis is an important support tool for making managerial decisions in various areas.

Dluhosová (2008) states that main goals of financial analysis include:

- comprehensively review of the level of the current financial situation of the company (financial health),
- review of the prospects for the financial situation of the company in the future,
- preparing measures to improve the economic situation and ensure further prosperity of the company.

These goals suggest that the main task of financial analysis is to make recommendations for the future development of the company, which are based on comprehensive analyzes of the current and possible future situation of the company.

The following statements can also be found in the literature: „*The purpose of the financial analysis is to provide information to financial managers and analysts to make thorough decisions about their business.*“ (Hasanaj, Kuqi, 2019, p. 17). This definition point out the main users of the outputs of financial analysis – i.e. managers (although there may be more users – see in detail chapter 3.1.2). The authors also see the main goal of financial analysis in ensuring the need for quality information for the right management decisions.

Within corporate management, financial analysis is linked to the identification of weaknesses that could lead to problems in the future and determine the strengths on which the company could build its success. The impulse for the analysis comes from the internal and external environment (Blaha, Jindřichovská, 2011). A dynamically changing environment increases the requirements for quality and the constant updating of the results of financial analysis.

Intelligent financial managers should consider the overall impact of financial and investment decisions and ensure that they develop strategies that will help the company's future growth (Brealey et al. 2008). As Sedláček (2011) writes, to create order from mistakes, financial analysts should evaluate several key financial indicators that summarize the financial situation, strengths and weaknesses of the company.

Nevertheless, there are various number of methods used in the field of the financial analysis. They include specifically calculations of ratios, differences indicators and results of bankruptcy and creditworthiness models. The results of all the above indicators and models have a certain telling ability about the management of the financial situation in the company. Depending on the objectives of the financial analysis and the needs of the users of its outputs, different methods are used. It is necessary to define who are the typical users of the results of the financial analysis.

### **3.1.2 The main users of the results of the financial analysis**

Information concerning the financial situation of a company, as stated by Grünwald and Holečková (2007), is an object of interest to many entities that come into contact with the company. These entities (users) include (Kayode, 2015, p. 4-7):

- owners,
- customers,
- suppliers,
- managers,
- the lenders,
- the government and its agencies,
- the financial analyst and advisors,
- the employees,
- the public.

Users can be classified into two main groups: internal and external. Internal group is made by directors, shareholders, partners, managers etc. External group include investors, suppliers, lenders, labour union, customers etc. (Hanif, Mukherjee, 2020, p. 6-3).

The objectives of the financial analysis directly correlate to the decision-making requirements of the users (Kayode, 2015, p. 3). Management of the company's financial stability is important, for example, for shareholders, lenders, other creditors and other external users, as well as for corporate managers (Knápková, Pavelková, 2010). Creditors and suppliers mainly focus on the company's ability to pay due liabilities, shareholders – on the company's ability to create the value and profits. Credit institutions monitor current indebtedness of the company, evaluate its past and future.

### **3.2 Information sources for the financial analysis**

An analyst collects a great deal of information to perform a comprehensive financial analysis for the company. In order to review the external environment, information sources typically include economic statistics, industry reports, trade publications, databases with information about the competitors (Robinson et al., 2015, p. 7). Additional sources of information are important for the purpose of predicting the future development of the company's financial situation, which may be affected by the external environment.

Recently, there has been a growing interest in using Big Data for financial analysis. Many companies have a large amount of different data. Diversification of data types, real-time needs and decision-making cause an increase in interest in Big Data analysis in the field of financial analytics (Bach et al., 2019, p. 8).

Company's financial reports, included financial statements, provide the core information for the financial analysis.

*“Financial statements are the result of an accounting recordkeeping process that records economic activities of a company, following the applicable accounting standards and principles.”* (Robinson et al., 2015, p. 7). They can be considered as *“a structured financial presentation and transactions undertaken in an organization.”* (Hasanaj, Kuqi, 2019, p. 19).

In the Czech Republic, the creation of financial statements is governed by Czech accounting standards. The scope and manner of an accountancy is regulated by Act No. 564/1991 Coll., on Accounting, which follows the relevant regulations of the European Union.

Special international standards are also created for the creation of financial statements, for example:

- IFRS (International Financial Reporting Standards),
- IPSAS (International Public Sector Accounting Standards),
- IFRS for SMEs.

Act No. 564/1991 Coll., On Accounting, § 19a, defines that international accounting standards regulated by EU law must be used by accounting entities that are commercial companies and are issuers of investment securities admitted to trading on a European regulated market. IFRS applies primarily to companies whose securities are listed on stock exchanges and large public interest entities (Libroten.cz, n/d). Their financial statements and other financial reports submitted are intended to provide high quality, transparent and comparable information that would assist global capital market participants and other users in their economic decisions. IPSAS is intended for public sector companies, IFRS for SMEs – for the Small and Medium Enterprises.

Financial statements prepared for the balance sheet date form the financial statements. According to § 19 of Act No. 564/1991 Coll., balance sheet date means the day on which the books are closed. Entities prepare financial statements in full or in abbreviated form. It contains:

- Balance sheet,
- Profit and loss account (P&L report),
- Notes to the financial statements, which explain accounting methods or specific terms and include additional information.

The annual financial statements may also include a cash flow statement. Individual financial statements need to be described in detail, especially because in the practical part their individual items are worked with.

### **3.2.1 Balance sheet**

Balance sheet – is a financial statement that informs the user about the state of the composition of the asset and the sources of its coverage (liabilities) as of a certain date, ie the balance sheet date (Šteker, Otrusínová, 2016, p. 20).

The types of the balance sheets according to the time of compilation are followings (Šteker, Otrusínová, 2016, p. 20):

- initial balance sheet, made at the moment of the entity establishment, representing the assets, contributed by the owners and the corresponding sources of cover for those assets, in particular the share capital,
- opening balance sheet, compiled at the beginning of the accounting period, that represents assets available to use by the entity in a subsequent period,
- final balance sheet, compiled at the end of the accounting period, which expresses the state of assets after the economic activity in the given period.

In the balance sheet total assets are equal to total liabilities – it is a basic principle of double-entry bookkeeping or the principle of balance sheet equality (Šteker, Otrusínová, 2016, p. 21).

Assets are resources a business owned (Weygandt, Kimmel, Kieso, 2019, p. 27). Total assets include:

- A. Receivables from subscribed capital
- B. Fixed assets (non-current assets)
- C. Current assets
- D. Accrued assets

The two main groups of assets are fixed assets and current assets. Fixed assets are not consumed at once in the company, but usually their value is gradually transferred to costs through depreciation. This is not always the case, land and works of art are not depreciated, collections for which, on the contrary, the value increases over time. Fixed assets can be divided into three basic groups

- tangible,
- intangible,
- financial.

Tangible assets include, for example, land and buildings, tangible movables and their sets, permanent crops and adult animals. Assets that cannot be materialized (licenses, primary funds, goodwill, software, trade lacks etc.) belong to the intangible assets (Elandi, 2019). Financial assets include securities, shares, loans, credits etc. (Křížová et al, 2012).

Conversely, current assets are consumed all at once or at short intervals not exceeding one year. Current assets can be divided into the following groups:

- inventories,
- receivables,
- current financial assets and resources (cash in treasury and on account).

Inventories are for example material, merchandise. Receivables consist of classic trade receivables, but also, for example, deferred tax receivables or estimated active accounts (Křížová, Sedláček, Hýblová, Valouch, 2012).

An integral part of assets is accruals, which include prepaid expenses and prepaid income. One of the accounting principles is implemented using accruals, namely the principle of a true and fair presentation of accounting (Landa, 2008).

From the point of view of financial analysis, assets are important for us, for example, for calculating the turnover time of current assets, inventory turnover, or receivables turnover. The very structure of assets (ie vertical analysis of assets) is no less important for financial analysis.

Total liabilities – sources of asset coverage, include:

- A. Equity
- B. Provisions
- C. Payables (liabilities)
- D. Accrued liabilities

Equity includes share (legal) capital and reserves, reserves from profit and transferred income. The value of equity is also linked to, or based on, its value from the current profit and loss statement.

Provisions and payables (liabilities) belong to the foreign sources. Foreign sources represent the current debts or liabilities of the company, which come from the past and for which it is expected that their payment will cause the company to lose economic benefits (Kracík, 2016). Liabilities can be divided into:

- short-term (maturity up to one year to suppliers, employees, banks, the state),

- long-term (maturity over one year; issued bonds, bank loans, received advances).

Accruals also appear in total liabilities, which include deferred expenses and deferred income.

### **3.2.2 Profit and loss account (income statement)**

The profit and loss account (the same is income statement, P&L statement) provides information about the amount of the entity's profit or loss, which was achieved on the basis of costs incurred in order to achieve revenue in the followed period. The entity makes a profit when the revenues exceed the costs, and the entity makes losses when the costs exceed the revenues (Vochozka, 2011).

The profit and loss account can be compiled on the basis of two approaches of the breakdown of costs and revenues: by their types or by their purpose. The breakdown of costs by type provides an overview of the types of costs that the entity has used for its economic activity. These are, for example, material consumption, depreciation, social costs, labor costs etc. The purpose breakdown of costs shows the relationship of costs to the cause of their occurrence, for what purpose they were incurred. This includes, for example, cost of services sold, sales overheads, (packaging, personnel costs, depreciation, rent, travel costs etc.), administrative costs (material costs, telecommunication costs, insurance costs, lighting and heating costs).

In Czech accounting, a distinction is made between current costs (revenues from operations and financial activities) and extraordinary costs. The operating area is the main area of activity of the company. The costs and revenues that result from the company's field of activity should be stated here. The financial area is met by costs and revenues, which relate to, for example, securities, interest and exchange rate differences. Extraordinary areas include natural disasters, state intervention in the company's activities and other costs of an unusual nature (Vančurová, 2013).

The difference between the sales of goods and the costs of goods sold is called the trade margin. For manufacturing companies, we can call the margin from its activities the production margin and determine it as the difference between output and output consumption (Vančurová, 2013).

For the needs of financial analysis, it is appropriate to define various categories of positive economic results (profit) (Sekhar, 2018, p. 5):

- EBITDA (profit before interest, taxes and depreciation) – revenue minus all operating expenses except interest, taxes and depreciation,
- EBIT (operating profit) – earnings before interest and taxes,
- EBT (earnings (profit) before tax) – difference between EBIT and interest charges; may also include the non-operating profit,
- EAT (net profit or earning after tax) – EBT minus taxes,
- NOPAT (net operating profit after tax) – EBIT minus tax on EBIT. The formula is  $[\text{EBIT} (1 - \text{tax rate})]$  or  $[\text{EAT} + \text{after tax interest}]$ .

### 3.2.3 Cash flow statement

The cash flow statement provides a real view of the financial situation in the company, as it provides information about cash flows throughout the accounting period. Cash flows are the increase (income) and decrease (expense) of cash and cash equivalents. This includes cash, money in an account, securities and money on the way. Cash equivalents are short-term liquid assets that can be converted into cash for a pre-agreed amount (Růčková, 2019).

The cash flow statement monitors three basic activities, as stated in § 41 of the Decree No. 500/2002 Coll. – operating, investment and financial activities. The most important part of the statement is the operating activity, which relates to the main gainful activity of the company. Investment activity refers to investments, ie the acquisition and sale of fixed assets. Results of the financial activities are changes in the amount and composition of equity.

According to the § 42 of the above-mentioned Decree, the entity reports cash flows from operating activities using one of two methods:

- a direct method – the entity presents appropriately selected and structured groups of cash inflows and outflows, for example, following a breakdown in the income statement; or
- an indirect method for which the entity's profit or loss is adjusted in particular by: non-monetary transactions, unpaid costs and revenues of previous or future



accounting periods, items of income and expenditure related to financial and investment activities.

The form of the cash flow statement is not specified, the choice of method and content is entirely at the discretion of the entity.

### 3.3 Analysis of absolute indicators

The values of absolute indicators can be got directly from the financial statements. As part of the analysis of absolute indicators, a horizontal and vertical analysis of the balance sheet and profit and loss statement are applied.

#### 3.3.1 Horizontal analysis

Horizontal analysis include analysis of the dynamics of the financial data from several years – at least two periods. Typically at least three-five years of historical financial data are used. Another name of the horizontal analysis is comparative analysis, because it helps to compare the most basic indicators in financial statements from several periods.

This type of analysis deals with the determination a growth or decrease of the assets, foreign sources, costs, profit et c. The trend (increase or decrease) is evidenced by the calculation of absolute and relative changes in indicators.

The absolute change of the selected indicator in the period  $t$  compared to this indicator in the period  $t-1$  can be calculated as follows:

$$\text{Absolute change}_{t-(t-1)} = \text{Indicator}_t - \text{Indicator}_{t-1} \quad (1)$$

The relative change (percentage change) is calculated by the dividing the absolute change figure by the amount of the initial period or date:

$$\text{Relative change}_{t/(t-1)} = \frac{\text{Absolute change}_{t-(t-1)}}{\text{Indicator}_{t-1}} \times 100 \quad (2)$$

If the values in period  $t-1$  are negative, the denominator is multiplied by the value  $-1$  (Febmat, 2016):

$$\text{Relative change}_{t/(t-1)} = \frac{\text{Absolute change}_{t-(t-1)}}{-\text{Indicator}_{t-1}} \times 100 \quad (3)$$

The obvious disadvantage of the methods of the horizontal analysis is impossibility to calculate the relative change, if the value of the previous period ( $t-1$ ) is zero.

Due the providing of the horizontal analysis, an user can easily understand the performance of the company and its dynamics with help of diagrams. As Hanif and Mukherjee (2020, p. 5-7) state, disadvantage of this type of analysis is that comparative annual statements many not be able to reflect all relevant changes. Market conditions are changing very fast because of competition and product innovation, so annual statement cannot reflect important changes which took place during the year. Chibili (2019, p. 107) also draws attention to another shortcoming of the horizontal analysis, which lies in the impossibility to adequately take into account effects of the inflation. This leads to erroneous conclusions about the causes of the change in indicators.

### 3.3.2 Vertical analysis

Vertical analysis (also known as common size analysis) is a form of the financial analysis in which all the indicators in the financial statements are reduced to percentages (Chibili, 2019, p. 108). It helps to understand such key metrics as gross profit as a percent of revenue, depreciation as a percent of revenue, earnings before tax (EBT) as a percent of revenue etc. (CFI Education Inc., 2021).

Vertical analysis of the balance sheets uses the total assets (or total liabilities) as the denominator (100 %). The method of calculation is shown by this formula (Abor, 2017, p. 182):

$$\text{Percentage of total assets} = \frac{\text{Statement of financial position item}}{\text{Total assets}} \times 100 \% \quad (4)$$

As it concerns income statements, the total sales of the company is usually used as the denominator (Abor, 2017, p. 182):

$$\text{Percentage of sales} = \frac{\text{Income statement item}}{\text{Sales}} \times 100 \% \quad (5)$$

Vertical analysis is very much suitable for comparing companies of different sizes, because it presents percentage values (not absolute values). Vertical analysis is especially useful for inter-firm comparisons, because it highlights the weakness and strengths of the company against the competitors (Hanif, Mukherjee, 2020, p. 5-18). Chibili (2019, p. 110) also agrees with this and states that the ability to compare a company with competitors is the main useful function of vertical analysis.

For the purposes of comparing the company with the average of the industry in the Czech Republic, financial analyses of the corporate sphere of the Ministry of Industry and Trade (MIT, 2020) can be used.

### **3.4 Analysis of difference indicators**

The difference between certain items of the balance sheet can be used to calculate the following three indicators, relating to the current assets. Differential indicators are used in the area of current assets management, their liquidity (Růčková, 2019). Liquidity expresses the degree of difficulty in converting current assets into cash.

The basic difference indicator is net working capital. Net working capital represents a part of current assets financed by long-term resources and can be interpreted as follows by the following formula (Sedláček, 2011, p. 35):

$$\text{Net working capital (NWC)} = \text{current assets} - \text{short-term liabilities} \quad (6)$$

Looking at the calculation, it can be deduced that this is a relatively free part of capital, which is not tied to short-term liabilities. In the case of unfavourable events affecting the company, net working capital allows the company to continue its economic activity, even if a higher part of the funds would have to be spent. The higher value of net working capital indicates the more liquid company.

Changes in NWC for a certain period can be expressed by the difference between the state of NWC at the end of the reference period and the state of NWC at the beginning of the observed period. To determine the cause of the change in NWC, it is necessary to analyze inflows and outflows. The increase in NWC from the asset position represents in the balance sheet any increase in current assets or any decrease in the value of the company's short-term liabilities. From the position of liabilities, it is possible to distinguish which item was the source of cash flow and which, on the contrary, caused its consumption. The source of cash flow is a growth of equity and long-term debt, a decrease of fixed assets or a company's profit. Cash flow consumption means a decrease in long-term capital, an increase in fixed assets or a company's loss. To ensure the company's liquidity, the value of NWC must be positive; if it is negative, part of the fixed assets is financed from short-term sources (Sedláček, 2011). The golden balance rule appears here, where long-term assets are paid mainly from own or long-term external sources; short-term assets, on the contrary, - from short-term sources (Vochozka, 2011).

Net cash (cash fund) is used to monitor immediate liquidity and can be expressed by the following difference (Sedláček, 2011, p. 38):

$$\text{Net cash} = \text{ready money} - \text{immediately payable liability} \quad (7)$$

Ready money includes cash in hand, in accounts, and short-term securities may also appear here (Sedláček, 2011).

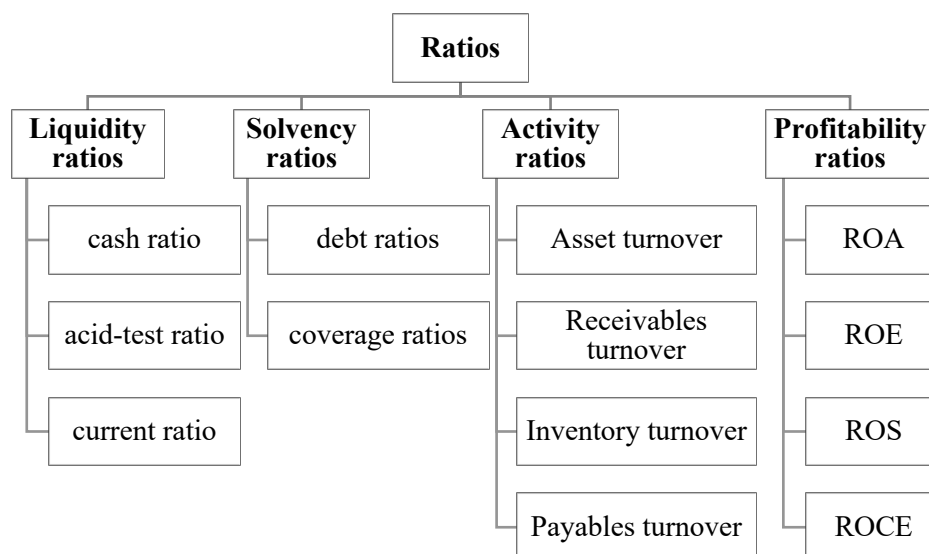
Net cash-receivable financial fund is roughly among the above liquidity ratios. Assets do not include inventories or even illiquid receivables, short-term liabilities are then deducted from the adjusted assets. The formula is following (Sedláček, 2011, p. 39):

$$\text{Net cash} - \text{receivable financial fund} = \text{current assets} - \text{inventories} - \text{illiquid receivables} - \text{short-term liabilities} \quad (8)$$

### 3.5 Analysis of ratios

“A ratio is the relationship between one value and another. It is an expression of a mathematical relationship between one quantity and another. The ratio of 200 : 100 is 2 : 1 or 2.” (Hanif, Mukherjee, 2020, p. 6-1). The calculation and analysis of ratio is an important method for understanding balance sheets and profit and loss accounts. Ratios are classified in different ways. For example diagram below (see Figure 1) divides ratio into four groups: liquidity ratio, solvency ratio, activity ratio and profitability ratio. The names of specific ratios in the selected groups can differ in individual professional sources.

Figure 1 Classification of ratios



Source: own processing based on Hanif, Mukherjee (2020, p. 6-3)

### 3.5.1 Liquidity ratios

Liquidity was already defined in the part of the analysis of difference indicators. As a briefly summarize, it can be stated, that Liquidity ratios measure an ability of the company to convert its assets to cash. It is an important ability, because it means, that the company can meet its short/term debt obligations. Liquidity ratios have also a significant effect on bond ratings (Suratmi, 2020, p. 3).

The liquidity ratios are divided according to the liquidity of asset items (Sedláček, 2011) to the following types:

- cash ratio (1<sup>st</sup> liquidity level),
- acid-test ratio, also called quick ratio (2<sup>nd</sup> liquidity level),
- current ratio (3<sup>rd</sup> liquidity level).

Liquidity ratios are calculated according to the formulas (Chandra, 2008, p. 174-175):

$$\text{Cash ratio} = \frac{\text{cash and cash equivalents}}{\text{current liabilities}} \quad (9)$$

$$\text{Acid – test ratio} = \frac{\text{current assets – inventories}}{\text{current liabilities}} \quad (10)$$

$$\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}} \quad (11)$$

Liquidity ratios are sometimes considered as less effective tool for comparing business of different sizes and financial structures in different locations (Newstex, 2019), so another types of ratios are also used.

### 3.5.2 Solvency ratios

Solvency ratios measure an ability of the company to meet its long term financial obligations.

*“The solvency ratio measures a firm's actual cash flow – rather than net income – by adding back depreciation and other non-cash expenses to assess the company's capacity to stay afloat. It measures this cash flow capacity in relation to all liabilities, rather than only short-term debt. This way, the solvency ratio assesses a company's long-term health by evaluating its repayment ability for its long-term debt and the interest on that debt.”* (Newstex, 2019).

There are two types of ratios: debt ratios and coverage ratios. Debt ratios measure the risk related to the financial structure (equity vs. debt). Coverage ratios measure the risk related to the inability of the company to pay its debt costs (interest, lease payments etc.) (Kalinová, 2020, p. 14).

Examples of debt ratios are:

- Debt to asset ratio

This ratio expresses, what share of assets is financed by debt, or in contrary, what share of assets is financed by equity. The formula is (Kalinová, 2020, p. 20):

$$\text{Debt to asset ratio} = \frac{\text{Total debt}}{\text{Total assets}} \quad (12)$$

“Usual” values of the ratio are around 50 %. Values over 70 % are considered very high, but it is necessary to take into account the total context and industry.

- Debt to equity ratio

This ratio is useful to understand the balance of debt and equity. If the value of the ratio is 1, it means, that debt and equity are in balance and every crown of equity there is one crown of debt. The formula is (Kalinová, 2020, p. 20):

$$\text{Debt to equity ratio} = \frac{\text{Total debt}}{\text{Total equity}} \quad (13)$$

- Debt to capital ratio

Higher values of the ratio expresses higher indebtedness. It shows, what part of assets is supported by equity. The formula is (Kalinová, 2020, p. 20):

$$\text{Debt to capital ratio} = \frac{\text{Total debt}}{\text{Total capital}} \quad (14)$$

The second type of solvency ratios include coverage ratios, eg. times interest earned, fixed charge coverage, coverage of fixed assets by long-term (LT) resources. Especially important ratio is the last one, which is calculated by this formula (Kalinová, 2020, p. 26):

$$\text{Coverage of fixed assets by LT resources} = \frac{\text{LT resources}}{\text{Fixed assets}} \quad (15)$$

where LT resources = equity + LT (long-term) debt.

Ratio value more than 1 shows that LT resources cover also part of current assets. It is a prudent approach of the company. Ratio value less than 1 shows that LT assets are partly covered by short-term debt. It is a risky situation.

The next ratio is times interest earned, also called as interest coverage. The formula is (Kalinová, 2020, p. 26):

$$\text{Times interest earned} = \frac{\text{EBIT}}{\text{interest expense}} \quad (16)$$

where interest expense means all interest expenses. The value of the ratio means, how many crowns of operating profit cover every crown of interest cost.

### 3.5.3 Activity ratios

Activity ratios are referred to the asset management of the company and are used to measure how efficiently the assets are employed by a company (Chandra, 2008, p. 178). These ratios can be divided into two main groups:

- turnover ratios – measure how many times per period the asset turns over,
- ratios measuring the same in days.

The formulas for the calculation of the main important activity ratios are (Chandra, 2008, p. 178-179):

$$\text{Asset turnover ratio} = \frac{\text{Net sales}}{\text{Average total assets}} \quad (17)$$

The value of asset turnover should be as high as possible, but at least equal to 1.

According to Sedláček (2011, p. 61), the reverse form of the formula shows the binding of assets, which, on the contrary, should be as low as possible:

$$\text{Total assets turnover} = \frac{\text{Average total assets}}{\text{Net sales}} \quad (18)$$

There are also other types of ratios, used in the ratio analysis and related to the turnover (CFI, 2021):

- Receivables turnover ratio

$$\text{Receivables turnover ratio} = \frac{\text{Net sales}}{\text{Average receivables}} \quad (19)$$

High value of the ratio signals that the business is able to convert its receivables into cash very quickly.

- Inventory turnover ratio

$$\text{Inventory turnover ratio} = \frac{\text{Cost of Goods sold}}{\text{Average Inventory}} \quad (20)$$

A low value of the ratio shows, that inventory is moving too slowly and is tying up capital. In the other hand, too high value of the ratio signals, that it can lead to shortages and lost sales.

- Payables turnover ratio

$$\text{Payables turnover ratio} = \frac{\text{Cost of Goods sold}}{\text{Average Payables}} \quad (21)$$

This ratio measures how quickly a company is paying off its accounts payables to creditors.

### 3.5.4 Profitability ratios

The concept of profitability can be imagined the ability to create new resources and achieve net profit, which is the main criterion for the allocation of investor's capital. Profitability indicators evaluate the return on invested capital, it is the ratio of profit to some basis by which the profit was achieved. The essence of profitability indicators is the evaluation of the relative profitability of the company, which should be as high as possible (Mulačová, Mulač, 2013).

The main profitability ratios are:

- Return on assets (ROA)

ROA shows how effectively a profit in the company is created, regardless of its sources (whether it is own or foreign sources) (Atlantis, 2021). The formula for calculating ROA is (Rejnuš, p. 272):

$$\text{ROA} = \frac{\text{EAT}}{\text{Total assets}} \times 100 \% \quad (22)$$

where the numerator is EAT – earnings after taxes or net profit. This variant of the calculation serves mainly portfolio investors who are interested in the final result of their



business activities. The second variant of the calculation includes EBIT (earnings before interest and taxes) in the numerator (Rejnuš, p. 272):

$$ROA = \frac{EBIT}{Total\ assets} \times 100 \% \quad (23)$$

This variant is focused on the quality of company management. This follows from the fact that EBIT expresses the company's overall ability to have a certain effect, regardless of the way it is financed and the tax rates paid. This formula is used by investors primarily when performing fundamental analysis.

- Return on equity (ROE)

ROE measures the efficiency with which the company uses the capital of the owners. It measures how much net profit fall on a crown of invested capital by a shareholder. The formula for calculating ROE is (Deusen, Williamson, Babson, 2007, p. 134):

$$ROE = EAT / total\ equity \quad (24)$$

Especially for shareholders, ROE is a particularly key indicator. They put pressure on the company's management to maximize profit before tax, minimize profit taxation and use capital resources as efficiently as possible. ROE should always be higher than the possible return on the same risky investment or, for example, the average annual return on five-year government bonds until maturity,

- Return on sales (ROS)

It measures the share of net profit, which falls on 1 crown of sales. In order to interpret the ratio correctly, it is necessary to know the long-term development trend in the given company and the value of the relevant sector. This indicator must always be evaluated in context. This is because the low value of ROS, when fast inventory turnover and high absolute sales are achieved, may be more favorable than the high value of ROS accompanied by slow inventory turnover and low absolute sales. The formula for calculating ROS is (Kalinová, 2020, p. 24):

$$ROS = \frac{Profit}{Sales} \quad (25)$$

where profit is gross profit (gross profit margin) or EBIT or EAT. Sales mean the sales from the main business of the company. For example, if the ROS = 50 %, it means, that

every time the business makes 100 crowns in sales, it makes also 50 crowns in profit. Higher ROS is usually considered better.

- Return on capital employed (ROCE)

ROCE provides the profitability of long-term resources. In other words, ROCE helps to understand, how well a business is generating profits from its capital. The formula is (Kalinová, 2020, p. 23):

$$ROCE = \frac{EBIT}{Average\ equity + Average\ LT\ debt} \quad (26)$$

Average equity and LT debt mean all capital that bears cost.

Advantages of the ratio analysis include the simplification of comprehension of financial statements, providing data for inter-firm comparison and predicting the future performance (Hanif, Mukherjee, 2020, p. 6-1). It is important to state, that the ratios are constructed from the financial statements, so ratios include possible weaknesses of the accounting system of the company.

### 3.6 Bankruptcy and creditworthiness models

In recent decades, a large number of prediction models have emerged (Isil, 2017), thanks to the development of statistical methods, information technology, increased interest from banks and businesses. The majority of models are based on financial ratios calculated from absolute indicators of financial statements.

Prediction models are able to distinguish indicators of prosperous (creditworthiness) and bankrupt companies and using statistical methods are able to classify the surveyed companies into one of two groups, ie the group of solvent companies or the group of companies at risk of insolvency (Růčková 2011).

Bankruptcy models inform whether it is possible for a company to get into such serious problems during the observed period that it would lead to bankruptcy. These models are intended to provide early warning of probable bankruptcy. Foreign bankruptcy models include (Sušický, 2011, p. 55):

- Beaver model,
- Altman's models (Z-score, ZETA etc.),

- Altman's and Lavallo's model,
- Taffler's and Tisshaw's model.
- Bulderbeck' model.

These bankruptcy models were created in the Czech Republic (Sušický, 2011, p. 74):

- IN models (IN95, IN99, IN01, IN05),
- Ch-index,
- Gurčík's index.

Creditworthiness models are rather limited to the definition of the creditworthiness of rated companies, without a more precise expression of the threat of its bankruptcy. They are therefore oriented towards investors and owners and answer the question of whether the company is good or bad according to the chosen criterion (currently most often according to the ability to generate economic profit) (Kubíčková, Jindřichovská, 2015, p. 202).

There are also combined models – bankruptcy-creditworthiness. These are, for example, the Grunwald index, the Kralick Quick test. Selected models are described further.

### 3.6.1 Altman's models

The first variant of Altman's model was the so-called Z-score. This model was published in 1968 by Professor Edward I. Altman. The first modification of the mentioned model came in 1983. Over time, several other modifications were created, including Altman's model for Czech conditions.

The model called Z-score ( $Z$ ) is the result of an analysis that was performed on a sample of 66 companies over a period of 19 years. The model was designed to predict the further development of the financial situation of companies listed on the capital markets. From the 22 indicators originally tested (potential indicators of financial failure), five indicators were selected using multiple discriminatory analysis, which distinguished bankrupt and successful companies the most. The selected indicators were considered to be the most reliable in the area of detecting the symptoms of financial distress. Based on their intensity of influence, it was possible to derive the weight of individual indicators. The model is often presented in the form (Cucaro, 2019):

$$Z = 1,2 \times x_1 + 1,4 \times x_2 + 3,3 \times x_3 + 0,6 \times x_4 + 1,0 \times x_5 \quad (27)$$

where:  $x_1$  = working capital / total assets

$x_2$  = retained earnings / total assets,

$x_3$  = earnings before interest and taxes / total assets,

$x_4$  = market value equity / book value of total liabilities,

$x_5$  = sales / total assets,

Z = overall index.

The value of the Z score helps to evaluate the company (Cucaro, 2019; Vochozka, 2011):

$Z \leq 1,81$                       the probability of failure is very high

$1,81 < Z < 2,69$               probability of failure within 2 years

$2,7 < Z < 2,99$               caution in handling

$Z \geq 2,99$                       financially solid company

An enterprise can be considered creditworthy if the resulting value of the Altman model is greater than or equal to 2,99. Results lower than or equal to 1,81, on the other hand, are characteristic of bankrupt companies. Between the two extreme points is the so-called grey zone, in which it is not possible to clearly determine whether it is a bankruptcy or creditworthy company (Vochozka, 2019). It is important whether the resulting value is closer to the upper or lower limit of the interval.

The Czech version of the Altman's model ( $Z_{CZ}$ ) is based on the original variant published in 1968. With regard to the Czech environment, it is extended by a new ratio indicator  $x_6$  (overdue liabilities / revenues) (Vochozka, 2019). This indicator was included in the modified model with a negative sign (a higher share of overdue liabilities negatively affects the financial stability of the company and increases the likelihood of bankruptcy). The formula for calculating this variant of the Altman's model was determined in the form (Kubičková, Jindřichovská, 2015):

$$Z_{CZ} = 1,2 \times x_1 + 1,4 \times x_2 + 3,3 \times x_3 + 0,6 \times x_4 + 1,0 \times x_5 - 1,0 \times x_6 \quad (28)$$

The limit values of the  $Z_{CZ}$  for Czech conditions are shown below (Vochozka, 2011):

$Z \leq 1,80$                       the probability of failure is very high

$1,80 < Z < 2,99$       grey zone  
 $Z \geq 2,99$               financially solid company

### 3.6.2 Kralick Quick test

The quick test was created by Kralicek (1991) and then modified in 1999. It takes into account different financial ratios and evaluated the company's financial and revenue position (Machek, 2014, p. 15).

As part of the test, it is necessary to calculate four indicators and assign points to the company according to their final values. The first indicator shows the financial strength of the company, the second – shows the company's ability to pay its debts. The other two indicators focus on profitability – return on sales and assets. An overview of indicators and scores is given in Table 1.

Table 1 Kralicek quick test

Indicators		Points				
		1 – very good	2 – good	3 – average	4 – weak	5 – very weak
X <sub>1</sub>	Equity quota	>30 %	>20 %	>10 %	>0 %	Negative
X <sub>2</sub>	Debt repayment period with CF	< 3 years	< 5 years	< 12 years	>12 years	>30 years
X <sub>3</sub>	CF in sales	>10 %	>8 %	>5 %	>0 %	Negative
X <sub>4</sub>	ROA	>15 %	>12 %	>8 %	>0 %	Negative

Source: Kiskingerová, 2008, p. 75

The indicatorars are calculated as following (Kislíngerová, 2008, p. 75):

$$X_1 = \text{Equity quota} = \text{Equity} / \text{assets} * 100 \%$$

$$X_2 = \text{Debt repayment period with cash flow} = (\text{Liabilities} + \text{loans}) / \text{CF}$$

$$\text{CF} = \text{EAT} + \text{depreciation} + \text{change in reserves}$$

$$X_3 = \text{CF in sales} = \text{CF} / \text{sales}$$

$$X_4 = \text{ROA} = \text{EAT} + \text{interest} (1-t) / \text{Assets}$$

### 3.6.3 IN models

The IN models (Neumaierová, Neumaier, 2005) were created by the couple Inka and Ivan Neumaier on the basis of mathematical-statistical procedures. They created a total of 4 models. Some of them are bankrupt, others are creditworthy.

IN95 was the first to be created in 1995 as a bankruptcy model. The second was IN99, which was a credit model (Neumaierová, Neumaier, 2008). IN01 is a combination of bankruptcy and creditworthiness model, which was subsequently updated to model IN05 (Vochozka, 2011).

The value of IN05 is calculated according to the following formula (Vochozka, 2011, p. 96):

$$IN05 = 0,13 \times A + 0,04 \times B + 3,97 \times C + 0,21 \times D + 0,09 \times E \quad (29)$$

where:

A = total assets / liabilities

B = EBIT / interest payable

C = EBIT / total assets

D = sales / total assets

E = current assets / current liabilities

The company is considered creditworthy at a value greater than 1,6 and, conversely, at a value lower than 0,9, it is a bankrupt enterprise. Between 0,9 and 1,6 there is a so-called grey zone (Vochozka, 2011, p. 96).

## **4 Practical Part**

This part is focused on the introduction of the company, the analysis of the global trends and the market, and the application of the financial indicators, described in the previous part.

### **4.1 Characteristic of the company**

CHEP CZ, s.r.o. is a part of the Australian Brambles Group, which has been operating on the world pallet and container rental market since 1946. The company's name is an abbreviation for Commonwealth Handling Equipment Pool, the company originally founded by the Australian Government (Brambles, 2021). In 1949 the company was privatised and then began to grow. During the period of twenty years it has been expanded in 14 countries across the world. CHEP has been operating on the Czech market since 1999.

CHEP CZ is part of a group in which the controlling entity is the multinational group Brambles Limited, which indirectly controls the company through CHEP Europ B.V. The group includes over 250 entities, of which 20 units operate in the European Union. The company's main business is the rental of pallets, containers and other similar equipment. It transports goods efficiently, sustainably and safely. In particular, Brambles provides fast transport of consumer goods (eg dry food, food and health and personal care products), fresh products, beverages, retail goods and manufacturing goods. The group employs about 12 000 people, owns approximately 330 million pallets (120 million pallets in Europe), crates and containers and operates more than 750 service centers (220 of them are in Europe). Brambles operates in approximately 60 countries, with the largest plants in North America and Western Europe (CHEP, 2021).

In the Czech Republic, CHEP CZ has two service centers for folding, repairs and technical inspection of all pallets. From the beginning, the company cooperated with its international customers, such as Procter & Gambler, Nestlé or Lego, but over time it also gained Czech customers, including Kofola, Budějovický Budvar or Europasta (Kubát, 2016).

The main information about the company is given in the Table 2.

Table 2 Main information about the CHEP CZ, s.r.o.

Name of the company	CHEP CZ, s.r.o.
Registration number	257 96 828
Registered office	Karla Engliš 3219/4, Smíchov, 150 00 Praha 5, 15000 Praha, Czech Republic
Company type	Limited liability company (společnost s ručením omezeným)
Date of registration	14. 9. 1999
Agents	Bohumila Bennette Frédéric Willy Richard Rotrou
Shareholder	Chep Europ B.V. (Netherlands)
Registered capital	43 300 000 CZK
CZ-NACE	77.39 Rental and leasing of other machinery, equipment and tangible goods n.e.c.
Number of employees	61 employees in 2020

Source: own processing based on eJustice, 2021

The Czech branch joined the group later than other European entities and its share in CHEP Europ B.V. not too big yet. However, recently its net turnover on the Czech market has been growing faster. If we compare the sales of CHEP Europ B.V. for 2019, where total sales grew by 2 %, and the division in the Czech Republic with a 26 % increase in sales (Best Communications, 2020), it can be said that the Czech company can gain a stronger position over time. In the same year, the number of pallets issued to customers increased proportionally within the Czech company by 20 percent (Best Communications, 2020). Pallet leasing in the Czech Republic is not very widespread yet, when, for example, in England companies similar to CHEP occupy a total of 90 percent of the market (Kubát, 2016). Estimated share of CHEP CZ, s.r.o. in the Czech market is 18 percent, which makes it a leading provider of pallet pooling and other services in the supply chain in the Czech Republic (Best Communications, 2020).



The business model of the CHEP's pallet pooling is perfectly circular. The services include the sharing of quality pallets with many customers. All the customer have to do is let the company know, how many pallets he needs, when and where to send them with the goods. The pallets are then picked up at the destination and taken to the nearest CHEP's service center, where they are inspected, cleaned and, if necessary, repaired before returning to circulation. For manufacturers and distributors, wholesalers and retailers, this model



means better efficiency and a reduction in the real costs of purchasing pallets, their storage, repairs, losses and related administration. By repeatedly using pallets instead of producing new ones, the environmental impact is reduced (CHEP, 2021).

The company offers plastic and wooden pallets. The examples of the company's pallets are given in the Figure

Figure 2 CHEP's offering of the pallets

Plastic pallets	Wooden pallets
	
<ul style="list-style-type: none"> <li>• Plastic europallet 1200 × 800 mm</li> <li>• Plastic half-pallet 800 × 600 mm</li> <li>• Static quarter pallet 600 × 400 mm</li> <li>• Quarter pallet on wheels 600 × 400 mm</li> <li>• Plastic UK pallet 1200 × 1000 mm</li> </ul>	<ul style="list-style-type: none"> <li>• Wooden europallet 1200 × 800 mm</li> <li>• Wooden and metal half-pallet 800 × 600 mm</li> <li>• Wooden UK pallet 1200 × 1000 mm</li> </ul>

Source: own processing based on CHEP, 2021

Attention in the analysis of the external environment is paid to the following areas:

- analysis of global trends that may affect the demand for pallet pooling services,
- definition of industries according to CZ-NACE in the Czech Republic and analysis of industries according to financial data provided by the Ministry of Industry and Trade of the Czech Republic (2016-2019),
- definition and analysis of competition of companies providing pallet pooling services.

Finally, conclusions are drawn about market developments, opportunities and threats. The financial analysis of the industry and selected competitors is then used for comparison with CHEP CZ.

### 4.1.1 Global trends

Modern sustainable logistics is undoubtedly a global trend. Sustainability is currently an issue in all fields, and logistics is no exception, especially in the area of sustainable packaging. Space-saving and cost-effective solutions in transport are very important and in demand (Schoellerallibert, 2021). For example, the Penny Market chain (Retail News, 2020) states that it would welcome all suppliers to deliver on circular packaging; however, only about 20 percent of suppliers work with Penny Market in this way so far. This is mainly due to the inertia of the original model (Retail News, 2020). However, demand for pallet pooling can be expected to grow for several reasons.

The first reason is the growing emphasis on environmental protection and environmentally friendly business. Businesses are suppressed both by legal obligations and by their own attitudes or commitments in CSR strategies to make them more feasible. The recyclability of materials is one way to reduce the impact of business on the environment (Schoellerallibert, 2021). Pallet pooling or leasing pallets to various companies for a certain period of time is currently very trendy. And another trend, ie the production of logistics packaging from a sustainable material - plastic, has also affected the pooling industry (Schoellerallibert, 2021). Recycled material used by pallets is one of the options that can be used by suppliers of various goods.

The second reason is that the use of a pooling system also helps suppliers to reduce emissions. According to the Penny chain and one of its largest suppliers, Unilever (Retail News, 2020), using a pallet system helps save 200-300 tons of emissions per year. "The need for pallets is lower. We used to bring the goods and pallets to the customer, he gave us the same number in exchange and I drove empty pallets. That is inefficient," he describes. According to Pavel Hampejs, the second possibility is that so-called pallet accounts are kept, where the number of euro pallets is recorded. When they release their quantity to a truck dealer, the manufacturer withdraws them. But they have to wait for them, and especially the supplier and the trader have quite a lot of money in the pallets. " (Hampejs in: Retail News, 2020).

Shared pallets are usually better maintained and repaired by service centers as needed, while pallets that are not involved in the circular system have no one to age. Hiring a shared payroll service costs something, but on the other hand, it helps companies save significant costs associated with administration, sorting damaged pallets, subsequent maintenance and

minimizing theft. This is especially appreciated by small businesses, such as Pekárny Nopek. In addition, wooden pallets are often stolen because the entire black shop operates with them (Retail News, 2020).

#### **4.1.2 Definition and analysis of the industry (sector CZ-NACE 77: Rental and Leasing activities)**

According to the NACE-CZ classification, the industry in which CHEP CZ, s.r.o. operates can be described as follows:

N – Administrative And Support Service Activities

77 – Rental and leasing activities

77.39 – Rental and leasing of other machinery, equipment and tangible goods n.e.c.

The Ministry of Industry and Trade (MIT, 2020) provides financial data on the development of the corporate sector, but does not provide data specifically on industry 77.39. Data on the development of industry 77 – Rental and leasing activities can be drawn from the MIT data.

According to data from the Ministry of Industry and Trade (2020), a total of 25 companies operated in the sector in 2019, as in 2018, of which 17 were private companies under foreign control. The average registered number of employees in the sector is 1 676 in 2019. Selected key data on the sector are given in Table 3. They include values of the total assets, revenues and profit, as well as calculated relative changes of these indicators. There are also calculated shares of revenues from own products and services in the total sales, share of the long-term assets and inventory in the total assets. Basic ratios, as ROE, ROA and liquidity ratios are also indicated in the table.

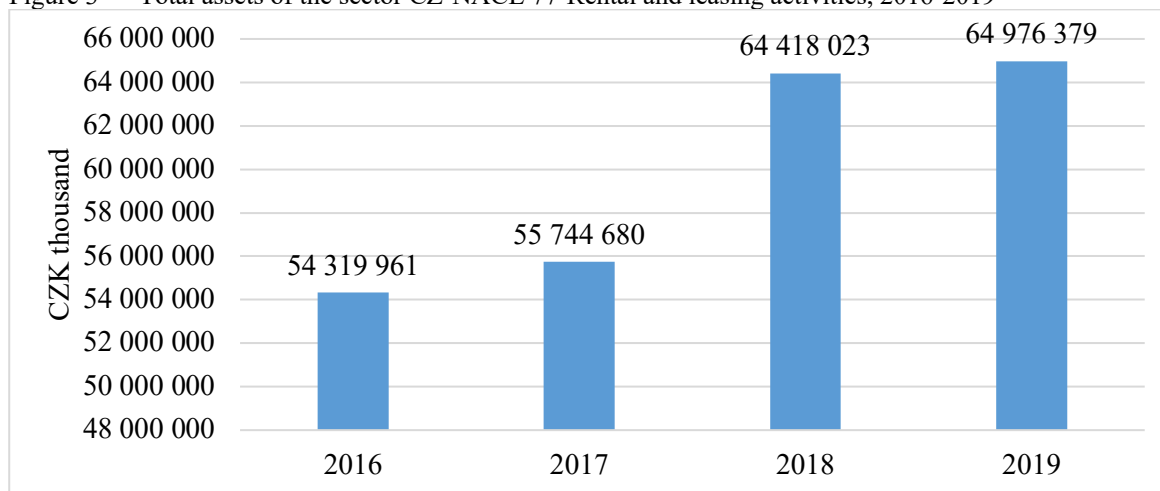
Table 3 Vybrané údaje o odvětví CZ-NACE 77-Rental and leasing activities, 2016-2019

<b>77 – Rental and leasing activities</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Assets total (CZK thousand)	54 319 961	55 744 680	64 418 023	64 976 379
<i>Relative change (%)</i>	-	2,6 %	15,6 %	0,9 %
Revenues from own products and services (CZK thousand)	13 187 719	14 135 012	13 881 453	14 358 673
<i>Relative change (%)</i>	-	7,2 %	-1,8 %	3,4 %
<i>Share of total sales, %</i>	92,59 %	87,56 %	88,50 %	89,19 %
Profit/loss before tax (+/-) (CZK thousand)	2 238 465	1 793 410	1 634 223	2 934 531
<i>Relative change (%)</i>	-	-19,9 %	-8,9 %	79,6 %
Long-term assets (share of total assets, %)	81,08 %	84,50 %	83,78 %	78,89 %
Inventory (share of total assets, %)	0,55 %	0,68 %	0,63%	1,00 %
ROE	6,91 %	6,09 %	4,69 %	8,55 %
ROA (EBIT/Assets)	5,25 %	4,28 %	3,35 %	6,05 %
L3 - current ratio	0,94	0,62	0,85	0,96
L2 - acid-test ratio	0,92	0,59	0,82	0,92
L1 - cash ratio	0,28	0,29	0,40	0,51

Source: own processing based on MIT data (2017-2020)

The assets of the entire industry amount to CZK 64,976.4 million. The sector is characterized by growth in total assets (see Figure 3). In the years 2018-2019, the increase in assets associated with the entry into the sector of 4 new companies under foreign control is particularly noticeable (in the years 2016-2017 there were a total of 13, in the years 2018-2019 - a total of 17). The sector's assets increased by 15.6% year-on-year in 2018.

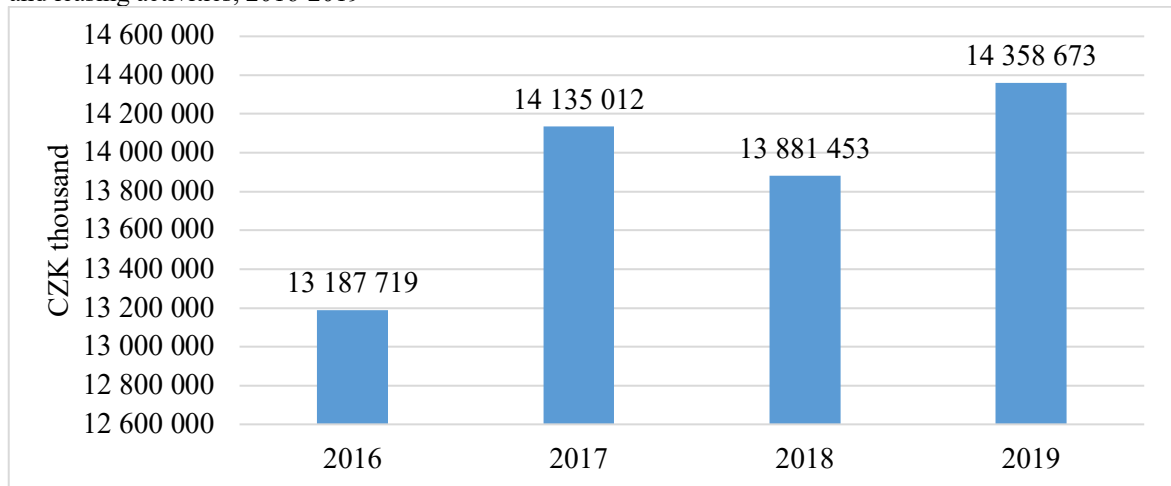
Figure 3 Total assets of the sector CZ-NACE 77-Rental and leasing activities, 2016-2019



Source: own processing based on MIT data (2017-2020)

Less significant changes are observed in the dynamics of the industry's sales. In the period under review, they amounted to CZK 13-14 billion (see Figure 4). The year-on-year growth rate of sales was the highest in 2017 - it was 7.2%. This growth was a factor that increased the attractiveness of the industry and caused the entry of new companies in 2018.

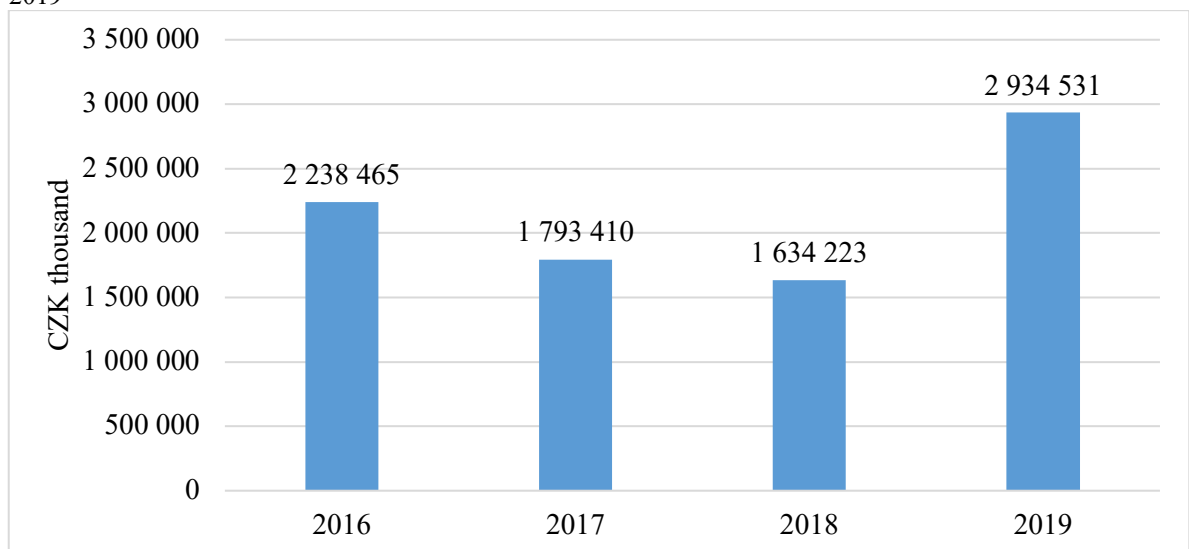
Figure 4 Revenues from own products and services (CZK thousand) of the sector CZ-NACE 77-Rental and leasing activities, 2016-2019



Source: own processing based on MIT data (2017-2020)

The growth of the sector's costs in 2017-2019, especially associated with pressure from the labor market (wage growth, very low unemployment) caused the sector's profits to decline in 2017-2018. In 2019, however, a very positive trend can be observed – the growth of the sector's profit up to the level of CZK 2,934.5 million (see Figure 5).

Figure 5 Profit before tax (CZK thousand) of the sector CZ-NACE 77-Rental and leasing activities, 2016-2019

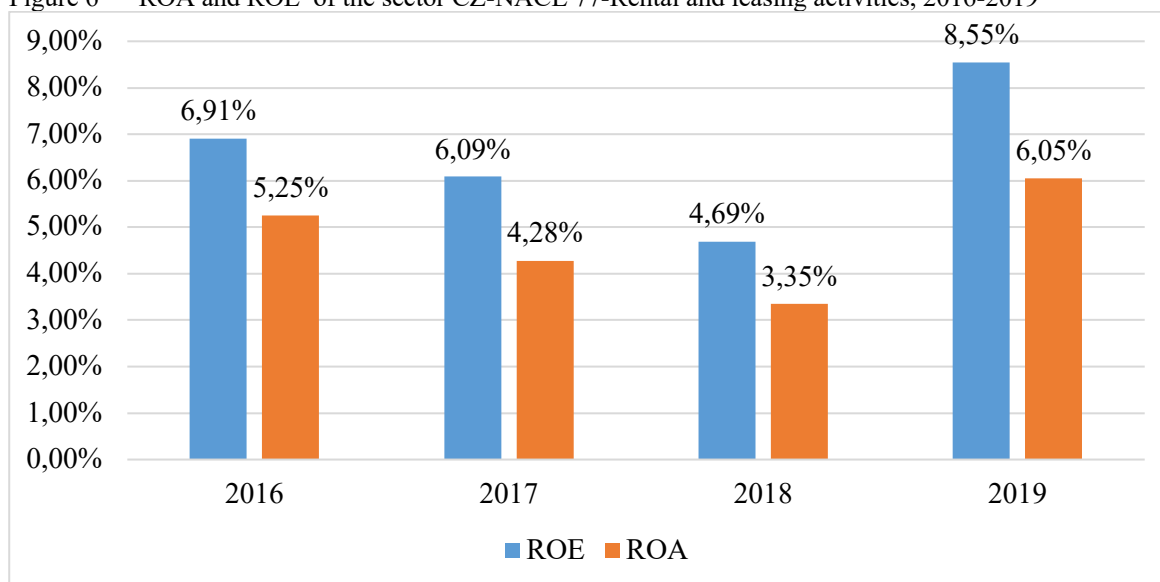


Source: own processing based on MIT data (2017-2020)

The sector is characterized by a relatively high long-term assets in total assets (approximately 80%), however, in the period under review in 2017-2019, their share is declining. In 2019, it was already 78.89% (in 2017 the highest value was 84.5%). Another typical feature is the very low share of inventories in total assets - it is max. 1% (MIT, 2020).

Regarding the analysis of ratios, it is evident that the values of ROE and ROA are lower than the theoretical generally recommended values (ROA min. 8%, ROE min. 10% according to (Kotěšovcová, 2020, p. 2)) (see Figure 6). The trend in the development of indicators can be seen in 2019, which is associated with a significant increase in the sector's profit. Until 2019, on the other hand, there was a clear negative trend - the indicators decreased every year.

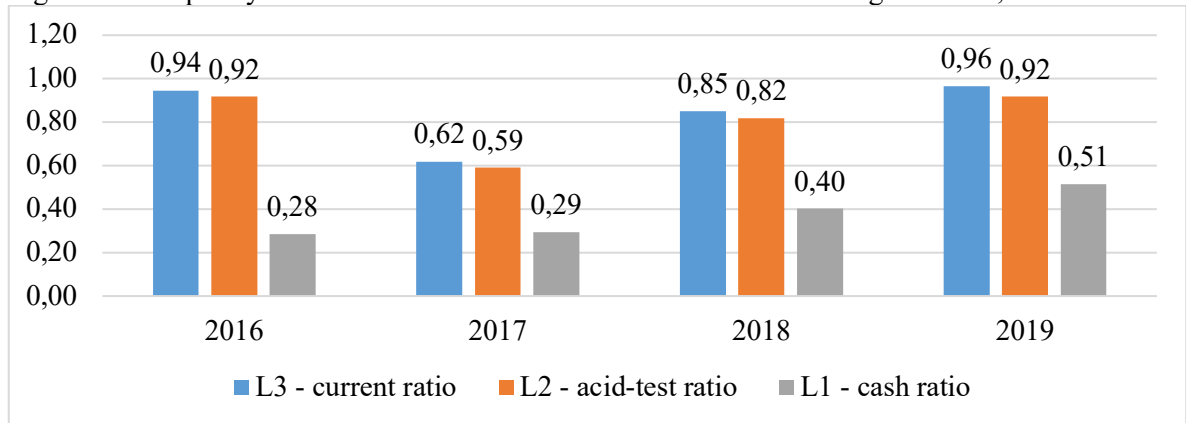
Figure 6 ROA and ROE of the sector CZ-NACE 77-Rental and leasing activities, 2016-2019



Source: own processing based on MIT data (2017-2020)

The sector's liquidity indicators are shown with the help of Figure 7. Only one indicator - the L1 cash ratio is in the range of generally recommended values  $<0.2, 1>$  (Kotěšovcová, 2020, pp. 3-4). Indicators L2 and L3 are well below the minimum recommended value (1 for L2 and 1.5 for L3). From the point of view of banks or creditors, this can be assessed negatively.

Figure 7 Liquidity ratios of the sector CZ-NACE 77-Rental and leasing activities, 2016-2019



Source: own processing based on MIT data (2017-2020)

#### 4.1.3 Competition on the market of pallet pooling

Furthermore, it is appropriate to focus specifically on the pallet rental industry in sector 77, which includes the research company CHEP CZ. The data for this industry are relatively limited, so this section focuses more on the specifications of competing companies, which will then be compared with CHEP CZ.

CHEP with its blue pallets is the leader on the Czech market of shared pallets. Since 2019, the French company Less Palletes Rouge (LPR) has also become more active on the market with its red pallets (Retail News, 2020). It is still second in the market and is trying to gain more market share mainly through an aggressive pricing strategy. Another competitor on the Czech market is Derpal Logistic, s.r.o., which leases and sells pallets for storing goods.

##### **LPR La Palette Rouge Poland sp. z o.o.**

LPR is part of the Dutch logistics company Euro Pool Group, which is one of the largest providers of returnable and reusable standard packaging services in Europe. Euro Pool Group consists of two divisions: Euro Pool System and LPR. Euro Pool System deals with the rental of crates in the food industry, LPR leases pallets. The color of LRP pallets is red with white marking. The company LPR was founded in 1992 and has been operating on the Polish market since 2013. It has no representation in the Czech Republic yet, but the company works with Czech customers and provides services in the Czech language. LPR's largest customers include Coca-Cola, Heinz and Heineken. The pallet rental system is the same as at CHEP (LPR, 2021). The annual turnover of LPR Poland sp. z o.o. is around EUR 10 million.

### **Derpal Logistic s.r.o.**

The supplier Derpal Logistic s.r.o. deals with the sale and rental of wooden pallets and packaging materials. The company was founded in 2011. The company uses a state-of-the-art pallet production and repair line that repairs about 100 pallets per hour. Unused pallets are used for recycling and production of biomass, which is used to subsequently obtain heat for heating buildings. The company's annual turnover is around CZK 140 million. The company operates not only in the Czech Republic, but also in Germany, Austria and Slovakia. The average number of employees is 25 and its production centers are located in České Budějovice, in Bor and Pticích (Derpal Logistic, 2021).

#### **4.1.4 Summary of trend and market analysis**

##### **Opportunities:**

- The Czech market is still poorly covered by the pallet pooling service.
- Emphasis on sustainability, environmental protection, emission reduction, recyclability. Development of sustainable logistics in general.
- Black market for wooden pallets (the use of pallet pool helps reduce the risk of theft)
- Growing interest in pallet service from smaller companies.

##### **Threats:**

- The threat is mainly posed by the second largest player in the market - the French company LPR with an aggressive growth strategy of low prices.
- The inertia of the original pallet utilization model, suppliers see no reason to change and switch to pallet pooling.

From the analysis, it can be concluded that the pallet pooling market is very attractive for new competitors, but so far it faces problems in overcoming existing business patterns and customer habits. A company operating in this sector must be financially stable enough to inspire trust in suppliers and gain significant customers in the large and small business sector. At the same time, the company must have sufficient financial resources for the period of development, when it does not yet have enough customers to achieve the required profits



and sales. The financial analysis of CHEP CZ will provide additional information in relation to the current and future position in this market.

## 4.2 Analysis of the absolute indicators

The first part of the financial analysis of the company CHEP CZ, s.r.o.

The analysis of absolute indicators examines the items from the balance sheet and profit and loss statement. First, a vertical analysis is performed, which provides an overview of the company's asset and capital structure. The vertical analysis of the balance sheet is divided into assets and liabilities, the vertical analysis of the profit and loss statement into costs, revenues and profit or loss. The vertical analysis is followed by a horizontal analysis, which shows the development of individual items in the balance sheet and profit and loss statement in the years 2015 to 2019. All calculations are performed on the basis of financial statements, which are listed in Appendix A and B.

### 4.2.1 Vertical analysis of the assets

The balance sheet total of assets, to which the value of fixed assets, current assets and accrued assets are measured, is chosen as the basis for percentage expression. Subsequently, the above items were also selected as sub-bases in order to identify a closer structure of the company's assets.

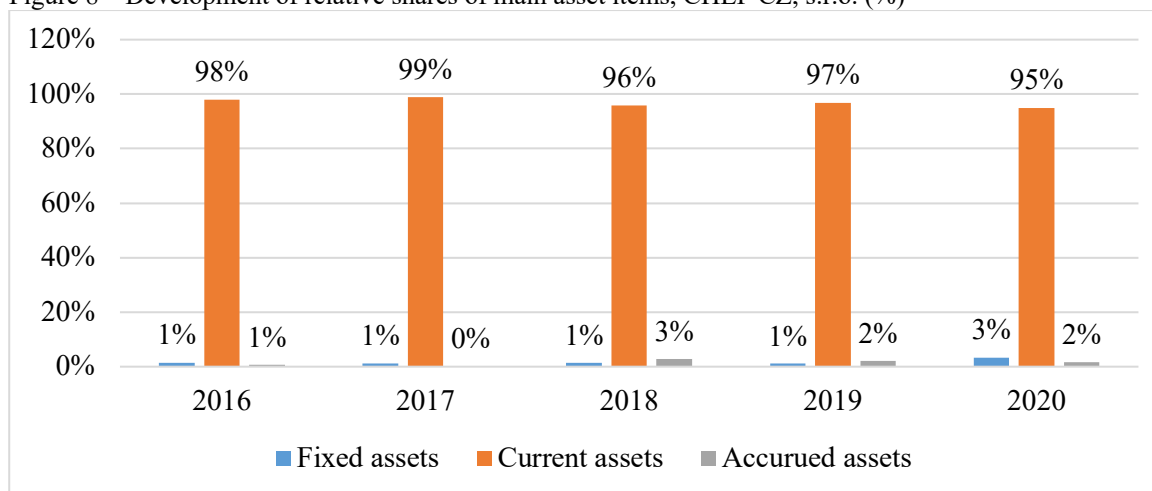
Table 4 Vertical analysis of the assets, CHEP CZ, s.r.o. (%)

	2016	2017	2018	2019	2020
<b>Total assets (CZK thousand) = 100 %</b>	<b>89 137</b>	<b>90 841</b>	<b>158 910</b>	<b>208 692</b>	<b>284 487</b>
<b>Fixed assets</b>	1 %	1 %	1 %	1 %	3 %
Intangible fixed assets	0 %	0 %	0 %	0 %	0 %
Tangible fixed assets	1 %	1 %	1 %	1 %	3 %
Long-term financial assets	0 %	0 %	0 %	0 %	0 %
<b>Current assets</b>	98 %	99 %	96 %	97 %	95 %
Inventory	0 %	0 %	0 %	0 %	0 %
Long-term receivables	0 %	2 %	1 %	1 %	2 %
Short-term receivables	76 %	87 %	87 %	89 %	85 %
Funds	22 %	10 %	8 %	6 %	8 %
Accrued assets	1 %	0 %	3 %	2 %	2 %

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

Reverse asset analyzes show that current assets accounted for the largest share of total assets. The largest share consisted of short-term receivables, where their value gradually increased over the entire period. It can be seen from Figure 8 that the structure of assets has hardly changed over time. Furthermore, we can say that a very small part of assets are fixed assets (less than 1.5% of total assets and their share also decreases almost constantly over time). CHEP CZ, s.r.o. is a logistics company and most of their assets are leased from other subsidiaries under CHEP Europ B.V.

Figure 8 Development of relative shares of main asset items, CHEP CZ, s.r.o. (%)



Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

#### 4.2.2 Vertical analysis of the liabilities

The vertical analysis of liabilities is shown in Table 5.

The share of equity in total liabilities had a growing course throughout the period under review, with the exception of 2019, in which it decreased. The reason was the decrease in share capital in 2019 by 21,300,000. CZK. On the other hand, the share of external resources is still declining, but this does not mean that the amount of external resources is also declining. In the years 2019-2020, the share of accrued liabilities in the company's total liabilities increased.

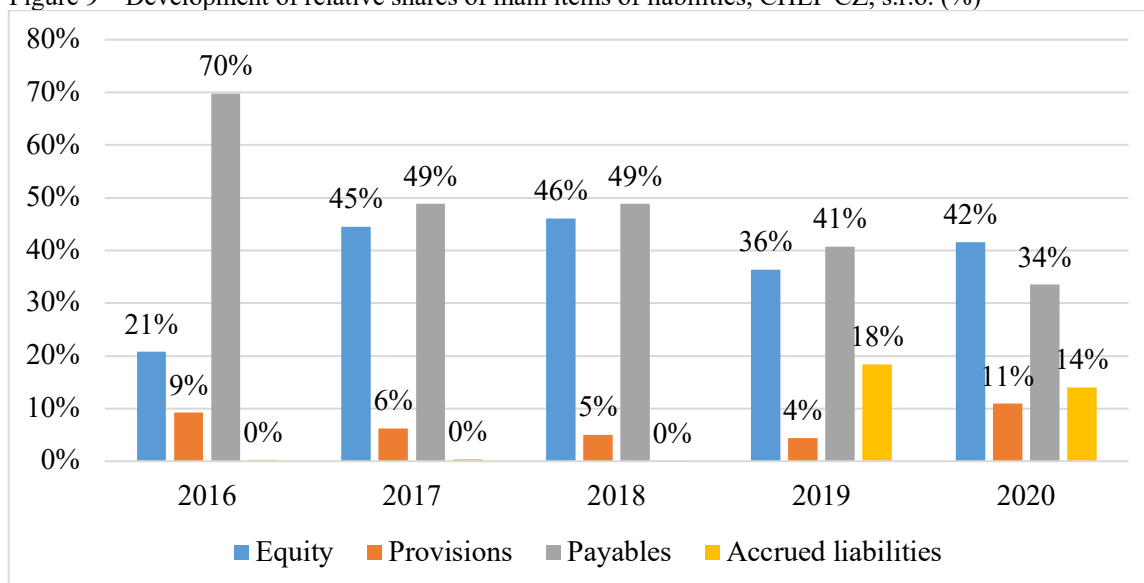
Table 5 Vertical analysis of the liabilities, CHEP CZ, s.r.o. (%)

	2016	2017	2018	2019	2020
<b>Total Liabilities (CZK thousand) = 100 %</b>	<b>89 137</b>	<b>90 841</b>	<b>158 910</b>	<b>208 692</b>	<b>284 487</b>
<b>A. Equity</b>	<b>21%</b>	<b>45 %</b>	<b>46 %</b>	<b>36 %</b>	<b>42 %</b>
A.I. Registered capital	72 %	71 %	41 %	21%	15 %
A.II. Capital surplus and capital finds	34 %	33 %	19 %	14 %	11 %
A.III. Funds from profit	0 %	0 %	0 %	0 %	0 %
A.IV. Net profit or loss from previous years (+/-)	-87 %	-84 %	-34 %	-13 %	1%
A.V. Net profit or loss for the current period (+/-)	2 %	24 %	21 %	14 %	15 %
<b>B.+C. Liabilities (external resources)</b>	<b>79 %</b>	<b>55 %</b>	<b>54 %</b>	<b>45 %</b>	<b>44 %</b>
<b>B. Provisions</b>	9 %	6 %	5 %	4 %	11 %
<b>C. Payables</b>	70 %	49 %	49 %	41%	34 %
C.I. Long-term payables	0 %	0 %	0 %	0 %	0 %
C.II. Short-term payables	70 %	49 %	49 %	41 %	34 %
<b>D. Accrued liabilities</b>	0 %	0 %	0 %	18 %	14 %

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

Figure 9 shows that in 2016 and 2017, foreign sources accounted for the largest share of total liabilities. In 2017, the share of equity increased to 44% and external sources, on the other hand, decreased by 23%. In 2019, accrued liabilities accounted for 18 percent of total liabilities.

Figure 9 Development of relative shares of main items of liabilities, CHEP CZ, s.r.o. (%)



Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

### 4.2.3 Vertical analysis of the costs

The total value of cost items in individual years is determined as the basis for percentage expression. The table 6 lists the selected main cost items. Other sub-bases that were further analyzed are power consumption and personnel costs.

Table 6 Vertical analysis of the costs, CHEP CZ, s.r.o. (%)

CHEP CZ, s.r.o.	2016	2017	2018	2019	2020
A. Consumption for products	84 %	88 %	85 %	82 %	78 %
A.2. Material and energy consumption	3 %	3 %	3 %	3 %	3 %
A.3. Services consumption	97 %	97 %	97 %	97 %	97 %
B. Changes in inventory of own products	0 %	0 %	0 %	0 %	0 %
C. Capitalization (-)	0 %	0 %	0 %	0 %	0 %
D. Personal costs	12 %	12 %	12 %	14 %	16 %
D.1. Wages and salaries	76 %	75 %	74 %	74 %	74 %
D.2. Social security and health insurance costs and other costs	24 %	23 %	26 %	26 %	26 %
E. Operating part adjustments	1 %	0 %	0 %	0 %	0 %
F. Other operating costs	3 %	0 %	1 %	1 %	4 %
J. Interest costs and similar costs	0 %	0 %	0 %	0 %	0 %
K. Other financial costs	0 %	0 %	0 %	0 %	1 %
L. Income tax	0 %	0 %	2 %	1 %	2 %
<b>Total costs (CZK thousand) = 100 %</b>	<b>333 858</b>	<b>357 682</b>	<b>450 003</b>	<b>578 876</b>	<b>604 070</b>

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

In all monitored years, consumption for products, which accounted for about 80% of the total value of costs, contributed to the creation of costs. Within power consumption, the consumption of services reaches the highest values, where it had a 97% share. Power consumption is part of operating costs. Other items have a minimum share, below 4%, only worth mentioning the cost item Personnel costs, which 12-16% of the company's total costs. They make up about two thirds of labor costs (74-76%). The share of personnel costs in the company's total costs has a growing trend, which can be combined with the general trend of wage growth in the Czech Republic and business development (employing more labor).

#### 4.2.4 Vertical analysis of the revenues

In the case of revenue, the total value of revenues is selected as the basis for the percentage achieved revenues in individual years. The results are given in the Table 7.

Table 7 Vertical analysis of the revenues, CHEP CZ, s.r.o. (%)

CHEP CZ, s.r.o.	2016	2017	2018	2019	2020
I. Revenues from own products and services	89,5 %	88,4 %	83,2 %	79,9 %	77,0 %
II. Revenues from merchandise	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %
III. Other operating revenues	10,5 %	11,6 %	16,7 %	19,9 %	22,7 %
VI. Interest revenues and similar revenues	0,0 %	0,0 %	0,1 %	0,2 %	0,3 %
VII. Other financial revenues	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %
<b>Total revenues (CZK thousand) = 100 %</b>	335 290	379 591	482 817	608 314	646 350

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

At first glance, it is clear that revenues from own products and services are the main contributors to revenue generation. Together with other operating revenues, they account for more than 99% of the total revenue for the accounting period from 2016 to 2020. In the last three years, the share of interest revenues and similar revenues has been increasing, yet it is still negligible (0.1 - 0.3%). The two most important sales lines are part of operating income.

#### 4.2.5 Vertical analysis of the profit/loss

The vertical analysis of the economic result (see Table 8) shows how large the operating and financial profit is in the total profit before tax.

Table 8 Vertical analysis of the profit, CHEP CZ, s.r.o. (%)

CHEP CZ, s.r.o.	2016	2017	2018	2019	2020
<b>Operating profit/loss</b>	181 %	107 %	101 %	102 %	88 %
<b>Profit/loss from financial operations</b>	-81 %	-7 %	-1 %	-2 %	-4 %
<b>Profit/loss before tax</b> (CZK thousand) = 100 %	1 432	20 157	41 276	37 650	63 984

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

The pre-tax profit achieved in individual years is mainly due to the operating profit due to a significant cost item Power consumption and revenue items Sales of products and services. In the financial area, the company makes a loss, which in 2016 significantly

contributed to the overall profit. The drawdown of the loan and the high value of interest expenses (CZK 972 thousand) contributed to this.

#### 4.2.6 Horizontal analysis of the assets

The horizontal analysis of assets monitors the development of individual items of fixed and current assets and the accrual of assets over time. The following Table 9 shows the absolute change in asset items between years.

Table 9 Horizontal analysis of the assets, CHEP CZ, s.r.o. (absolute changes, CZK thousand)

Absolute changes (CZK thousand)	2017	2018	2019	2020	2020/2016
<b>Total assets</b>	1 704	68 069	49 782	75 795	195 350
<b>Fixed assets</b>	-203	1 024	282	7021	0
Intangible fixed assets	0	0	0	0	0
Tangible fixed assets	-203	1 024	282	7021	8 124
Long-term financial assets	0	0	0	0	0
<b>Current assets</b>	2 435	62 722	49 536	68 174	182 867
Inventory	0	18	426	-339	707
Long-term receivables	1 614	88	357	2 856	4 915
Short-term receivables	10 926	59 975	47 485	55 449	173 835
Funds	-10 105	2 641	1 268	10 208	4 012
Accrued assets	-528	4323	-36	600	4 359

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

The horizontal analysis can also be observed in the relative changes of asset items in individual years, they are shown in the following table 10. The limitation of this calculation is that some balance sheet items have a value of zero (the calculation of relative change requires division by the value of the item, but cannot be divided by zero).

Table 10 Horizontal analysis of the assets, CHEP CZ, s.r.o. (relative changes, %)

Relative changes (%)	2017	2018	2019	2020	2020/2016
<b>Total assets</b>	2 %	75 %	31 %	36 %	219 %
<b>Fixed assets</b>	-16 %	96 %	13 %	296 %	640 %
Intangible fixed assets	-	-	-	-	-
Tangible fixed assets	-16 %	96 %	13 %	296 %	640 %
Long-term financial assets	-	-	-	-	-
<b>Current assets</b>	3 %	70 %	32 %	34 %	209 %
Inventory	-	-	2367 %	-76 %	-
Long-term receivables	-	5 %	21 %	139 %	-
Short-term receivables	16 %	76 %	34 %	30 %	256 %
Funds	-52 %	28 %	11 %	77 %	21 %
Accrued assets	-100 %	-	-1 %	14 %	826 %

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

Until 2019, CHEP CZ did not have its own pallets and containers. All stocks were owned by the main company CHEP Europ B.V. Current assets have a generally growing development (+ 209% in 2020 compared to 2016), mainly due to the growth of short-term trade receivables (+ 256% in 2020 compared to 2016). The reason for the high share of short-term receivables is the fact that CHEP applies the fiscal year as the accounting period, when receivables are mostly due at the end of the calendar year.

The analysis shows the highest increase in assets in 2018 by 75%. This was largely due to increases in short-term receivables (+ 76%) and increases in tangible fixed assets (+ 96%). The notes to the financial statements for 2018 show that the largest increase was in "Receivables from controlled and managed entities". The receivables reported on this line represent a credit facility provided to a related party of the CHEP Europ B.V. The annual report also shows that the interest rate on these loans for 2017/2018 ranged from 1.24 to 4.03%.

In 2018, the company achieved high growth in terms of total turnover, and thus the volume of money in bank accounts grew (+ 28% in 2018). In 2019, there was also a significant change in the balance sheet total, which increased by almost CZK 50 million (+ 31%). Growth continued in 2020 - total assets increased by CZK 75.8 million (+ 36%), due to an increase in almost all items of fixed and current assets. Overall, the horizontal asset analysis shows a very positive growth trend of the company.

#### 4.2.7 Horizontal analysis of the liabilities

The horizontal analysis of assets monitors the development of individual items of equity, liabilities and accrued liabilities over time. The following table shows the absolute changes in liability items.

Table 11 Horizontal analysis of the liabilities, CHEP CZ, s.r.o. (absolute changes, CZK thousand)

	2017	2018	2019	2020	2020/2016
<b>Total Liabilities (CZK thousand) = 100 %</b>	1 704	68 069	49 782	75 795	-284 487
<b>A. Equity</b>	21 909	32 814	2 707	42 281	-118 242
A.I. Registered capital	0	0	-21 300	0	-43 300
A.II. Capital surplus and capital finds	0	0	0	0	-30 000
A.III. Funds from profit	0	0	0	0	0
A.IV. Net profit or loss from previous years (+/-)	1 432	21 909	27 383	29 439	-2 662
A.V. Net profit or loss for the current period (+/-)	20 477	10 905	-3 376	12 842	-42 280
<b>B.+C. Liabilities (external resources)</b>	-20 375	35 530	8 783	32 108	-126 445
<b>B. Provisions</b>	-2 554	2 352	1 240	21 778	-31 013
<b>C. Payables</b>	-17 821	33 178	7 543	10 331	-95 433
C.I. Long-term payables	0	0	0	0	0
C.II. Short-term payables	-17 821	33 178	7 543	10 331	-95 433
<b>D. Accrued liabilities</b>	170	-275	38 292	1 405	-39 799

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

Even in the case of liabilities, it is possible to monitor the relative changes of items in individual years, which are shown in the following table.

During the period under review, equity grew steadily year-on-year, mainly due to the growth of the company's economic result and the reduction of losses from previous years. The company's annual reports for the years 2016 to 2020 show that in all years the company used the entire amount of profit to cover the accumulated losses of previous years.

In 2018, the stock of external sources increased significantly due to an increase in short-term liabilities by approximately CZK 33.2 million. These, like short-term receivables, are due at the end of the calendar year. The company's liabilities are not covered by material guarantees and do not have a maturity of more than 5 years.



Table 12 Horizontal analysis of the liabilities, CHEP CZ, s.r.o. (relative changes, %)

	2017	2018	2019	2020	2020/2016
<b>Total Liabilities (CZK thousand) = 100 %</b>	2 %	75 %	31 %	36 %	219 %
<b>A. Equity</b>	<b>118 %</b>	<b>81 %</b>	<b>4 %</b>	<b>56 %</b>	<b>538 %</b>
A.I. Registered capital	0 %	0 %	-33 %	0 %	-33 %
A.II. Capital surplus and capital finds	0 %	0 %	0 %	0 %	100 %
A.III. Funds from profit	-	-	-	-	-
A.IV. Net profit or loss from previous years (+/-)	2 %	29 %	51 %	110 %	103 %
A.V. Net profit or loss for the current period (+/-)	1430 %	50 %	-10 %	44 %	2853 %
<b>B.+C. Liabilities (external resources)</b>	<b>-29 %</b>	<b>71 %</b>	<b>10 %</b>	<b>34 %</b>	<b>80 %</b>
<b>B. Provisions</b>	-31 %	42 %	16 %	236 %	278 %
<b>C. Payables</b>	-29 %	75 %	10 %	12 %	53 %
C.I. Long-term payables	-	-	-	-	-
C.II. Short-term payables	-29 %	75 %	10 %	12 %	53 %
<b>D. Accrued liabilities</b>	82 %	-73 %	37541 %	4 %	19127 %

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

From the analysis of the balance sheet in full (eJustice, 2021) it can be concluded that short-term estimated liabilities (sub-item of cathode liabilities) increased by approximately CZK 22 million, where the company charges unbilled services, energy and debts to cover liability for damage. This is damage caused by destroying the pallet. Furthermore, it is evident that the reserves increased between 2017 and 2020 (reserves for wage bonuses and reserves for untaken leave).

The company's statements (see Appendices A and B) show that in 2019 the unpaid loss from previous years was 26,777 thousand. CZK and the economic result in this period is less than 30 mil. CZK. The executives decided to use the profit to pay the accumulated losses in 2020 as in previous years. As a result, the loss from previous years was paid in full and the profit will remain for further use.

#### 4.2.8 Horizontal analysis of the income statement

The horizontal analysis of the income statement monitors changes in individual items in the income statement. Table 13 calculates how large absolute changes occurred year-on-year in the observed periods.

Table 13 Horizontal analysis of the income statement of the CHEP CZ, s.r.o. (absolute changes, CZK thousand), 2016-2020

CHEP CZ, s.r.o.	2017	2018	2019	2020	2020/16
I. Revenues from own products, services	35 332	66174	84484	11816	197 806
II. Revenues from merchandise	0	0	0	0	0
A. Consumption for products	34 504	65134	95487	-6095	189 030
A.2. Material and energy consumption	793	1 017	3 764	1 276	6 850
A.3. Services consumption	33 711	64 117	91 723	-7 371	182 180
B. Changes in inventory of own products	0	0	0	0	0
C. Capitalization (-)	0	0	0	0	0
D. Personal costs	3 644	11744	28257	12787	56 432
D.1. Wages and salaries	2 263	8510	20439	9976	41 188
D.2. Social security and health insurance costs and other costs	381	4234	7818	2811	15 244
E. Operating part adjustments	-1 174	76	655	-1024	-1 467
III. Other operating revenues	9 060	36687	40088	25542	111 377
F. Other operating costs	-11 537	5893	3215	13964	11 535
<b>Operating profit/loss (+/-)</b>	<b>18 955</b>	<b>20014</b>	<b>-3042</b>	<b>17726</b>	<b>53 653</b>
VI. Interest revenues and similar revenues	0	365	925	678	1 968
J. Interest costs and similar costs	-457	-515	174	-174	-972
VII. Other financial revenues	-91	0	0	0	-91
K. Other financial costs	596	-225	1335	2244	3 950
<b>Profit/loss from financial operations (+/-)</b>	<b>-230</b>	<b>1105</b>	<b>-584</b>	<b>-1392</b>	<b>-1 101</b>
<b>Profit/loss before tax (+/-)</b>	<b>18 725</b>	<b>21119</b>	<b>-3626</b>	<b>26334</b>	<b>62 552</b>
L. Income tax	-1 752	10214	-250	3492	11 704
<b>Profit/loss after tax (+/-)</b>	<b>20 477</b>	<b>10905</b>	<b>-3376</b>	<b>12842</b>	<b>40 848</b>
<b>Profit/loss of accounting period (+/-)</b>	<b>20 477</b>	<b>10905</b>	<b>-3376</b>	<b>12842</b>	<b>40 848</b>
<b>Net turnover of accounting period</b>	<b>44 301</b>	<b>103226</b>	<b>125497</b>	<b>38036</b>	<b>311 060</b>

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

Even in the case of the profit and loss statement, year-on-year changes can also be expressed in relative terms, which is shown in Table 15.

Table 14 Horizontal analysis of the income statement of the CHEP CZ, s.r.o. (relative changes, %)

CHEP CZ, s.r.o.	2017	2018	2019	2020	2020/16
I. Revenues from own products, services	12 %	20 %	21 %	2 %	66 %
II. Revenues from merchandise	-	-	-	-	-
A. Consumption for products	12 %	21 %	25 %	-1 %	67 %
A.2. Material and energy consumption	9 %	11 %	36 %	9 %	79 %
A.3. Services consumption	12 %	21 %	25 %	-2 %	67 %
B. Changes in inventory of own products	-	-	-	-	-
C. Capitalization (-)	-	-	-	-	-
D. Personal costs	9 %	27 %	52 %	15 %	143 %
D.1. Wages and salaries	8 %	26 %	50 %	16 %	137 %
D.2. Social security and health insurance costs and other costs	4 %	43 %	56 %	13 %	162 %
E. Operating part adjustments	-64 %	11 %	89 %	-73 %	-80 %
III. Other operating revenues	26 %	83 %	50 %	21 %	318 %
F. Other operating costs	-117 %	355 %	76 %	187 %	117 %
<b>Operating profit/loss (+/-)</b>	<b>730 %</b>	<b>93 %</b>	<b>-7 %</b>	<b>46 %</b>	<b>2068 %</b>
VI. Interest revenues and similar revenues	-	-	253 %	53 %	-
J. Interest costs and similar costs	-47 %	-100 %	-	-100 %	-100 %
VII. Other financial revenues	-100 %	-	-	-	-100 %
K. Other financial costs	211 %	-26 %	204 %	113 %	1401 %
<b>Profit/loss from financial operations</b>	<b>-20 %</b>	<b>79 %</b>	<b>-203 %</b>	<b>-160 %</b>	<b>-95 %</b>
<b>Profit/loss before tax (+/-)</b>	<b>1308 %</b>	<b>105 %</b>	<b>-9 %</b>	<b>70 %</b>	<b>4368 %</b>
L. Income tax	-	583 %	-3 %	43 %	-
<b>Profit/loss after tax (+/-)</b>	<b>1430 %</b>	<b>50 %</b>	<b>-10 %</b>	<b>44 %</b>	<b>2853 %</b>
<b>Profit/loss of accounting period (+/-)</b>	<b>1430 %</b>	<b>50 %</b>	<b>-10 %</b>	<b>44 %</b>	<b>2853 %</b>
<b>Net turnover of accounting period</b>	<b>13 %</b>	<b>27 %</b>	<b>26 %</b>	<b>6 %</b>	<b>93 %</b>

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

Revenues grew throughout the analyzed period - they increased by CZK 311.1 million for the entire period. In 2020, they reached the highest value of over CZK 646.4 million. However, the most significant increase was evident in previous years - in the period 2018-2019, when total sales increased by more than a quarter year on year.

It can be said that the overall performance of CHEP in the Czech Republic significantly outpaced the general growth in Europe in the period 2018-2019. The consolidated financial

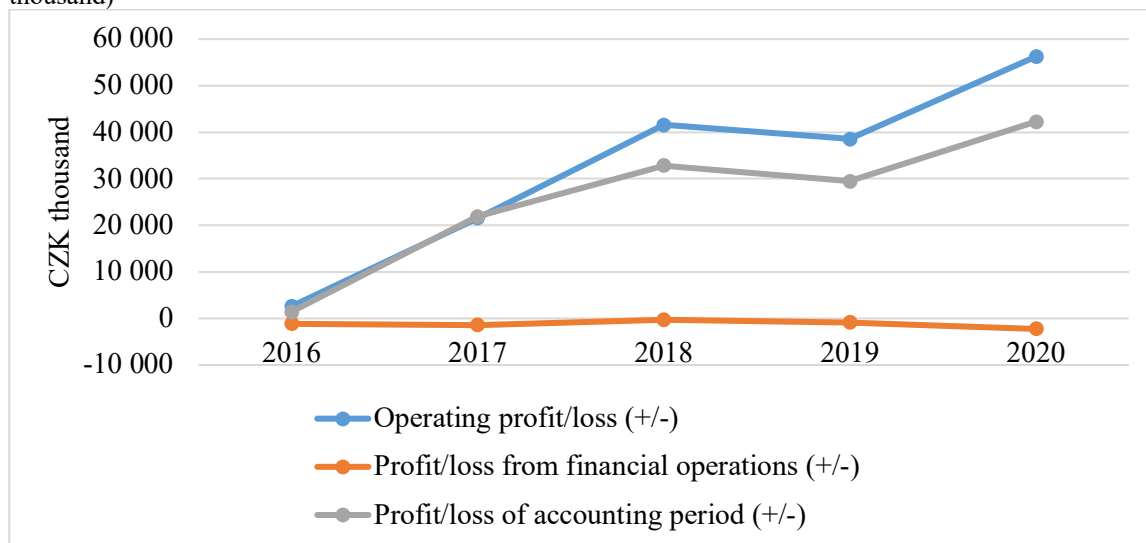
statements of Brambles Group for 2019 show an increase in sales of CHEP Europ B.V. by 2% (Brambles 2019), while Revenues from own products and services CHEP CZ increased by 21% year-on-year in 2019.

From the annual report of CHEP CZ, s.r.o. shows that sales growth is mainly related to further business development and close cooperation with key customers. The company primarily focuses on retail, respectively. manufacturers and distributors of retail goods (especially in the beverage and food sector). In 2018, the company saw increased interest in pallet rental. Compared to 2017, it increased the number of issued blue pallets by one million pieces. The main reason was the growth in demand from local smaller producers, who appreciate the logistical advantages of the service (CHEP, 2018).

However, with the growth of sales, the total costs of CHEP CZ also increased. With the ever-increasing number of employees and average wages, personnel costs also increased. For example, in 2019, year-on-year growth in wages and salaries was 50%. From 2016 to 2020, the number of employees increased from 26 to 61.

The profit for the accounting period 2014/2015 showed a loss of almost CZK 16 million. Since 2016, the company has still reported a profit, which it used to cover losses from previous years. In 2018, the highest profit was CZK 32.8 million in absolute terms, but in 2019 the profit fell by 10%. It can be seen from Figure 10 that the financial result has hardly changed. The decrease in operating profit for 2019 affected the overall profit for the accounting period.

Figure 10 Development of operating, financial and total economic result of the CHEP CZ, s.r.o. (CZK thousand)



Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

### 4.3 Analysis of ratios

This part is focused on the calculations of ratios described in the theoretical part and their more detailed analysis. The comparison of the CHEP CZ, s.r.o. and the industry CZ-NACE 77 – Rental and leasing activities is made.

#### 4.3.1 Profitability ratios

Calculation of profitability ratios for the CHEP CZ, s.r.o. is presented in Table 15. According to the comparison with the accompanying values, it is evident that since 2017 the company has been meeting the requirements for profitability. Only in 2017 and 2019 was the value of ROS below the recommended value, which was caused in 2017 by a slower increase in sales, in 2019 - with a sharp increase in costs (especially personnel).

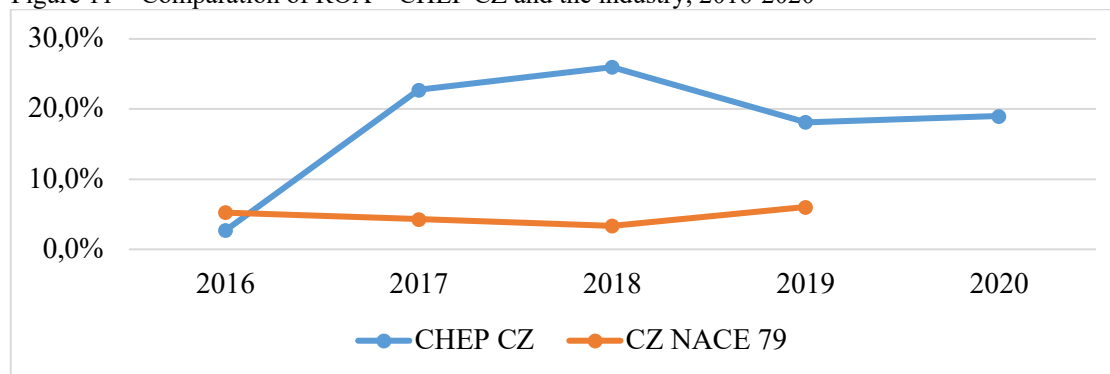
Table 15 ROA, ROE, ROS of the CHEP CZ, s.r.o. (2016-2020)

	Min.value	2016	2017	2018	2019	2020
ROA	8 %	3 %	23 %	26 %	18 %	19 %
ROE	10 %	8 %	54 %	45 %	39 %	36 %
ROS	10 %	1 %	6 %	10 %	8 %	11 %
EBIT (CZK thousand)	-	2 404	20 672	41 276	37 824	53 984

\*ROA and ROS use value of the EBIT in their calculations. Calculation of ROS is based on the EAT value. Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021), min. value according to Kotěšovcová (2020)

Figure 11 compares the company's ROA values with the industry average (CZ NACE 79). Sectoral data for 2020 are not published. The profitability of CHEP's total assets grew until 2018 and then decreased in 2019. In recent years, the overall efficiency of CHEP CZ, s.r.o. higher values than the industry, but in 2019 it fell by almost 10%. In the future, however, the company should focus on more efficient use of its capital.

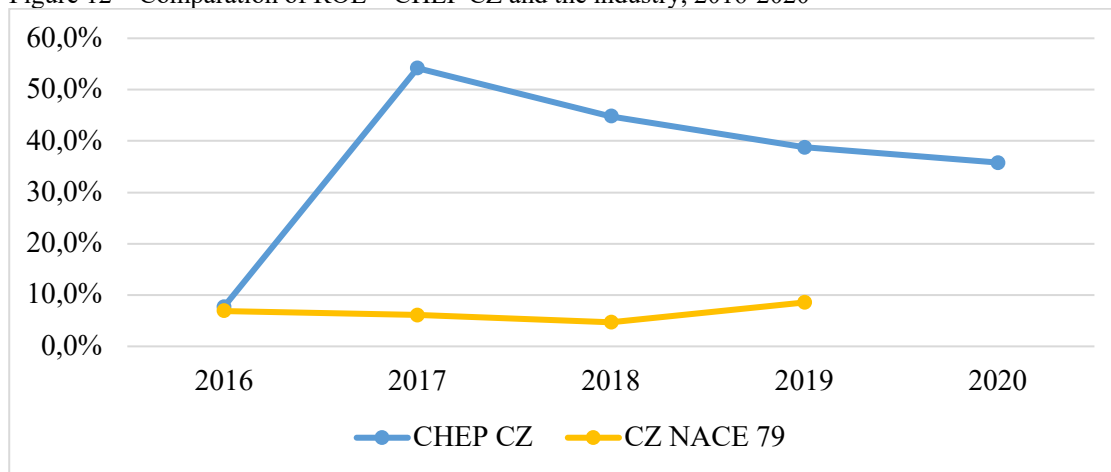
Figure 11 Comparison of ROA – CHEP CZ and the industry, 2016-2020



Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021) and analysis by MPO (2016-2020)

The comparison of return on equity indicators is performed with the help of Figure 12. The company CHEP CZ, s.r.o. reported a loss of 16,607 thousand CZK in 2015, and only in 2016 did it manage to make a profit. Since then, its economic result has continued to grow and there has also been a significant increase in return on equity (ROE). The largest changes were in 2017, as shown in Figure 12. Return on equity has stabilized with a slight decline since 2017, the main reason being that assets grew more than reported sales and asset turnover decreased. Since 2017, the company has had a higher profitability compared to the CZ-NACE 79 branch. From the perspective of a potential investor, it is therefore better to invest in CHEP CZ, s.r.o. than other average companies in the industry, but the decline in the indicator indicates the need for more caution.

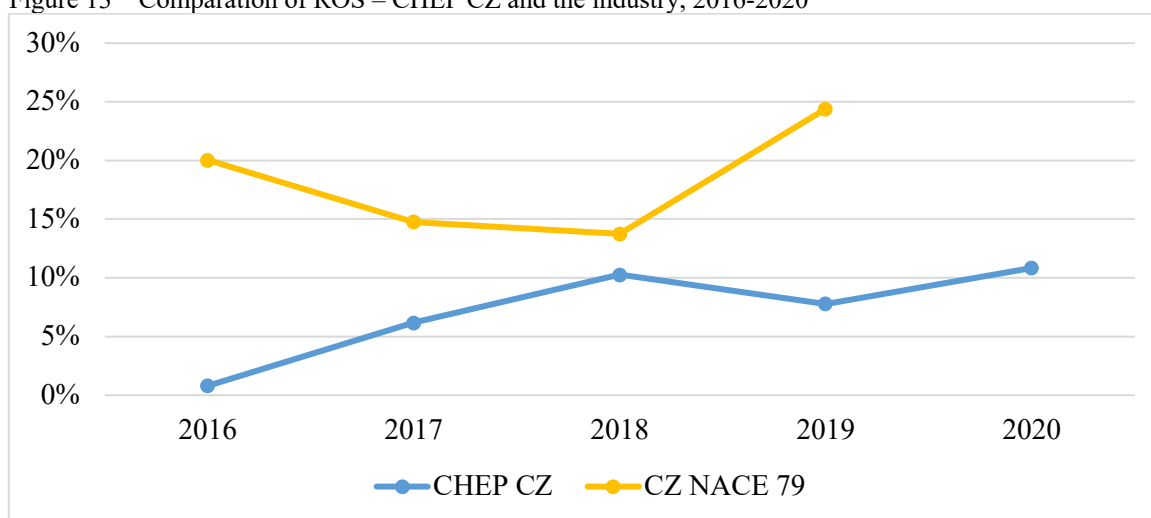
Figure 12 Comparison of ROE – CHEP CZ and the industry, 2016-2020



Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021) and analysis by MPO (2016-2020)

Figure 13 shows that in recent years, CHEP has converted 6 to 11 percent of sales into profit. However, the industry's profitability is much higher on average, especially in 2019 it reached an incredible 24.4%. In general, it can be said that the company CHEP CZ, s.r.o. has lower profitability than the industry, but has stable growth in this area and positive changes can be expected in the near future.

Figure 13 Comparison of ROS – CHEP CZ and the industry, 2016-2020



Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021) and analysis by MPO (2016-2020)

#### 4.3.2 Activity ratios

The calculation of activity indicators is performed in Table 16. The lowest values of turnover ratios (number of days) and the highest values of turnover ratio (number of turnovers) are desirable.

Table 16 Activity ratios of the CHEP CZ, 2016-2020

	2016	2017	2018	2019	2020
Total assets turnover	106,92	97,49	142,44	154,55	205,68
Receivables turnover	81,39	86,27	125,90	139,45	178,29
Inventory turnover	0,00	0,00	0,02	0,33	0,08
Payables turnover	74,61	47,63	69,52	63,02	69,00
Assets turnover ratio	3,37	3,69	2,53	2,33	1,75
Receivables turnover ratio	4,42	4,17	2,86	2,58	2,02
Inventory turnover ratio	-	-	22312,94	1094,86	4742,22
Payables turnover ratio	4,83	7,56	5,18	5,71	5,22

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

The turnover of the analyzed company shows a value greater than 2 in each year, except in 2020, which means that the company's assets have more than doubled and the company has used its assets efficiently. It is logical that the asset turnover time increases as the asset turnover decreases. In 2017, turnover decreased slightly and was the shortest (97 days). The horizontal analysis shows that the reason for the decline is the growth of the economic result by almost 50%, while assets increased by less than 2%. Assets turnover ratio

gradually decreased from 2018 to 2020, when it was 1.75 turnover. As total assets grew, asset turnover increased and reached 205.7 days in 2019. The company should either increase sales or consider selling unused assets.

The receivables turnover of the analyzed company CHEP CZ was between 81 and 177 days until 2020. The reason for the growth of the indicator is the growth of trade receivables by 88%.

Payables turnover was between 68-75 days. The indicator has a slight declining trend, which is a rather negative factor from the company's point of view, especially with regard to the growth of the receivables turnover ratio.

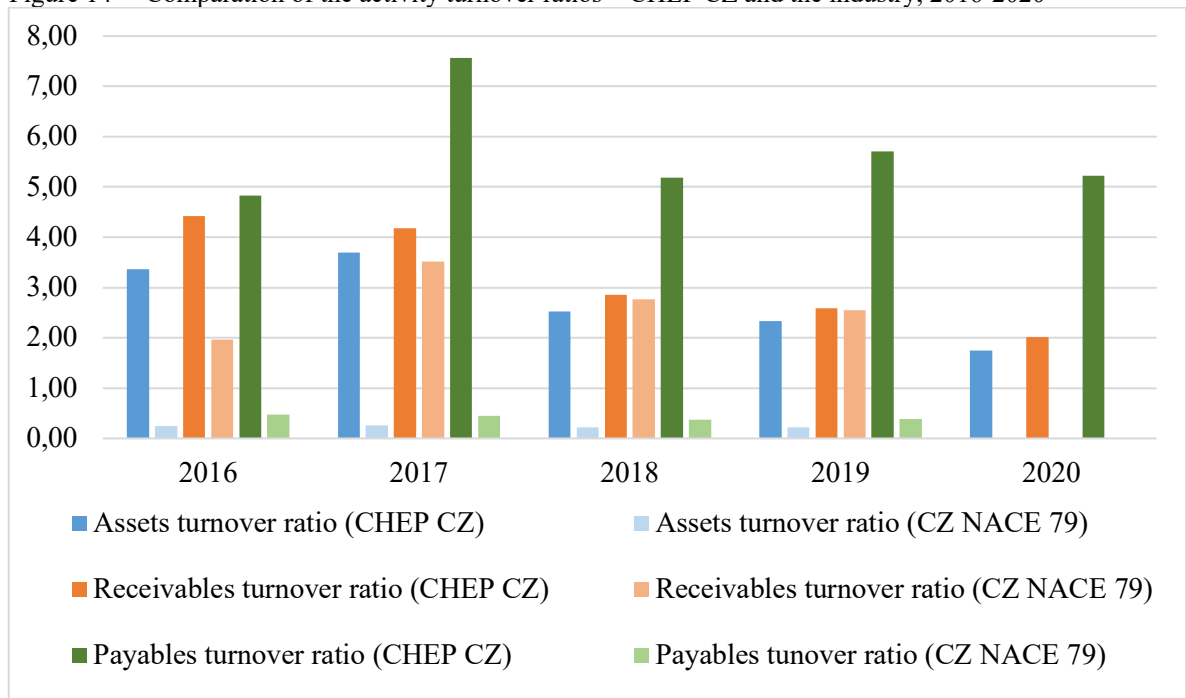
The trade deficit for all companies is positive, ie the turnaround time for receivables is higher than for liabilities. Companies repay debts to their creditors before they collect receivables from their customers, which is not advantageous for them. The growing trend of receivables turnover may mean the need for additional sources of financing, or a large difference between the time of turnover of receivables and the time of turnover of liabilities can also lead to insolvency by the company.

The Inventory turnover ratio is unusually high due to the fact that the company has almost no stocks. Only in 2018-2020 did this item appear in the company's balance sheet. The highest value was represented by stocks in 2018 (444 thousand CZK). Revenues from own products and services amounted to 486.1 million CZK this year, which explains more than 1,000 stock images. In 2018, the situation was even clearer - inventories amounted to 44,000 CZK, while revenues amounted to 401.6 million CZK. It is not necessary to compare the inventory turnover ratio with the industry.

A comparison of the company's turnover ratios with the industry is made with the help of Figure 14. 2020 data for the industry are not available. It is clear that the number of turnover of the assets, receivables and payables is significantly higher in the company than in the industry, which is good. However, this is due to the specific structure of the company's balance sheet, and points to the differences between the company and the industry in this respect. In terms of trends, the company shows a declining trend of indicators, which can be assessed as a negative signal. This trend is less pronounced in the industry.



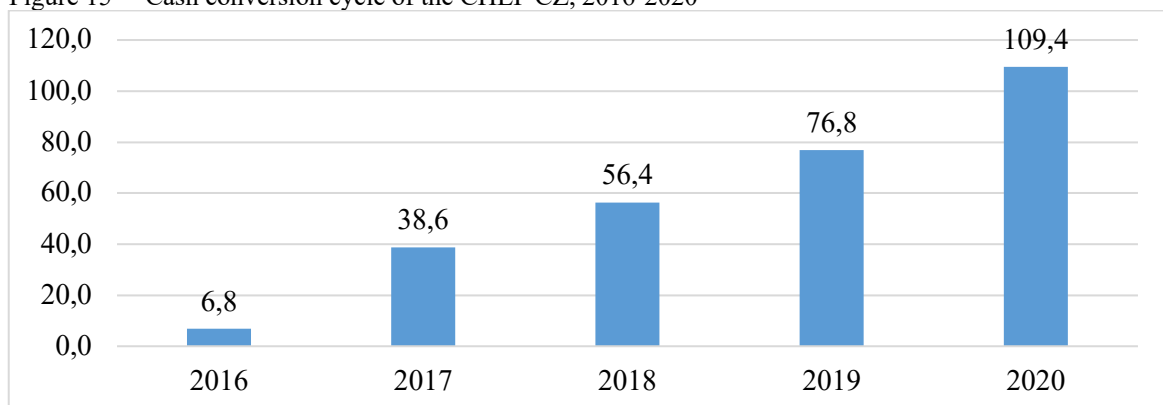
Figure 14 Comparison of the activity turnover ratios – CHEP CZ and the industry, 2016-2020



Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021) and analysis by MPO (2016-2020)

The cash conversion cycle is calculated based on the turnover indicators (see Figure 15). Although the inventory lead time is very low, it has positive values. Specifies the time that elapses between payment for purchased material, production of products from the material, their sale and acceptance of the collection from the sale of products made of the same material. Due to the significant increase in receivables and a slight decrease in the turnover of liabilities, the indicator has a very significant growth trend. Usually, the lower the cash conversion cycle, the more advantageous it is for the company. The growing indicator indicates that the capital needs to cover current assets is increasing.

Figure 15 Cash conversion cycle of the CHEP CZ, 2016-2020



Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

Capital requirement to cover current assets is calculated in the Table 17.

Table 17 Capital requirement to cover current assets of the CHEP CZ, 2016-2020

	2016	2017	2018	2019	2020
Cash conversion cycle	<b>6,8</b>	<b>38,6</b>	<b>56,4</b>	<b>76,8</b>	<b>109,4</b>
One day cost = total annual costs / 360	927,4	993,6	1250,0	1608,0	1678,0
Capital requirement to cover current assets	6286	38398	70492	123416	183520

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

A significant increase in capital requirement is a negative signal. The company's working capital can be reduced by:

- shortening the collection time, e.g. by involving customers in earlier payment of invoices by providing discounts (discounts) for earlier payments
- Extending the deferral period, as long as this extension does not increase the company's costs and damage relations with suppliers.
- The need for capital also depends on the volume of sales, receivables and inventories. With the expansion of the company, all three components grow spontaneously, the first two of which are essentially independent of the company's management. It often happens that the growth of a company is so fast that it threatens the very existence of the company.

### 4.3.3 Liquidity ratios

The calculation of liquidity ratios for the company CHEP CZ is performed in Table 15. The values are compared with the recommended values and the values of the industry.

Table 18 Liquidity ratios of the CHEP CZ, s.r.o. and the industry (2016-2020)

CHEP CZ	Recommended value	2016	2017	2018	2019	2020
cash ratio	< 0,2 , 1 >	0,31	0,21	0,16	0,16	0,25
quick ratio	< 1 ; 1,5 >	1,40	1,99	1,94	2,34	2,78
current ratio	< 1,5 ; 2,5 >	1,40	2,02	1,97	2,37	2,83
CZ NACE 79		2016	2017	2018	2019	2020
cash ratio	< 0,2 , 1 >	0,94	0,62	0,85	0,96	-
quick ratio	< 1 ; 1,5 >	0,92	0,59	0,82	0,92	-
current ratio	< 1,5 ; 2,5 >	0,28	0,29	0,40	0,51	-

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021), recommended values according to Kotěšovcová (2020)

It is obvious that the quick and current ratios of CHEP CZ are in the recommended interval or are higher, which can be evaluated positively from the point of view of stakeholders. Compared to the industry, it is clear that the cash ratio is higher in the industry than in the company. Other liquidity indicators, on the other hand, are very low. The company's liquidity can be assessed as better than the industry average.

#### 4.3.4 Solvency ratios

The calculation of solvency ratios is performed in Table 19.

Table 19 Solvency ratios of the CHEP CZ, s.r.o. and the industry (2016-2020)

	2016	2017	2018	2019	2020
Debt to asset ratio	0,79	0,55	0,54	0,45	0,44
Debt to equity ratio	3,80	1,24	1,17	1,24	1,07
Debt to capital ratio	3,80	1,24	1,17	1,24	1,07
Coverage of fixed assets by LT resources	14,60	37,94	35,05	32,02	12,59
Times interest earned	2,47	40,14	-	217,38	-

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

Debt to asset ratio shows, what share of assets is financed by debt. Values in the last years were around 50 %, that is normal. Debt to equity ratio is falling and was 1,07 in 2020, which means, that for every crown of equity, the firm has 1,07 crowns in leverage. Debt to capital ratio shows, that all assets are supported by equity. The value of the ratio is declining, that shows lower indebtedness.

The coverage of fixed assets by long-term resources shows a prudent approach of the company, because long-term resources cover also part of current assets. Times interest earned show, how many crowns of operating profit cover every crown of interest cost. In 2018 and 2020 there were no interest costs.

#### 4.4 Bankruptcy and creditworthiness models

The bankruptcy model assesses whether a company is at risk of bankruptcy. In this work, the Altman Z-score model, Kralicek's Quicktest and IN model were chosen.

#### 4.4.1 Altman's model

The results of the Altman's Z-score calculation is given in the Table 20. The company does not provide information on overdue liabilities / revenues, therefore the variable  $x_6$  was not used in the calculation of the Z-score, therefore a modified calculation model cannot be applied. The results show, that Altman's Z-score is more than 2,99, which places the company in the "green safe zone" of financially stable companies.

At the beginning of the period under review in 2016, the Z-score values were 3,09, ie just above the minimum allowable limit of the "green zone". The results have remained high in the prosperity zone in the last three years compared to the previous period. In 2017, the share of equity in external sources increased the most, from 0,26 to 0,81. This year, the Z-score is well above the "green zone".

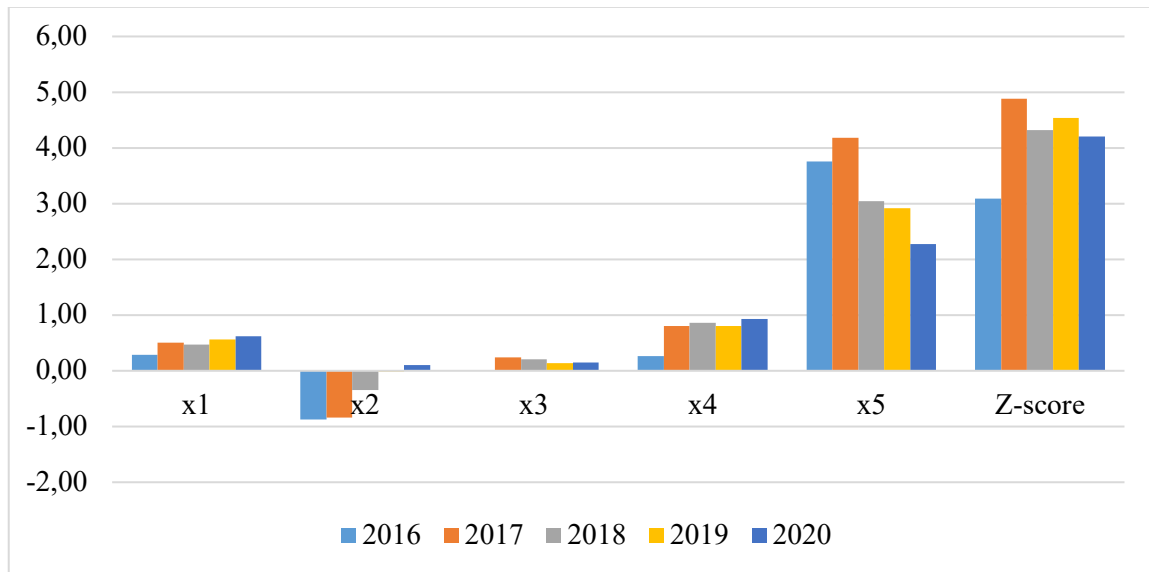
Table 20 Altman's Z-score model – CHEP CZ, s.r.o., 2016-2020

	2016	2017	2018	2019	2020
$x_1$ working capital / total assests	0,28	0,50	0,47	0,56	0,61
$x_2$ retained earnings / total assests	-0,87	-0,84	-0,34	0,00	0,10
$x_3$ earnings before interest and taxes / total assets	0,02	0,24	0,21	0,14	0,15
$x_4$ market value equity / book value of total liabilities	0,26	0,81	0,86	0,81	0,94
$x_5$ sales / total assets	3,76	4,18	3,04	2,91	2,27
Z-score	3,09	4,89	4,32	4,54	4,21

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

Changes in individual variables and the resulting Z-score values are illustrated with Figure 16. The variable  $x_3$  in the model most of all variables affects the resulting Z-score because it is multiplied by the largest coefficient of 3,3. The company's assets are growing steadily in the period under review, but profits do not have a stable growth trend. In 2019, there was even a decline in profits, and the value of the variable  $x_3$  decreased. For the same reason, the declining trend of variable  $x_5$  can be seen: the company's assets are steadily increasing, but sales are growing at a slower pace.

Figure 16 Atman's Z-score model – CHEP CZ, s.r.o., 2016-2020



Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

Based on the analysis of the model, it can be concluded that the situation of the company is very favorable. However, it may be recommended for the company to focus more on stabilizing sales and profit growth in order to avoid a decline in the value of the Z-score and to remain in the eyes of stakeholders as a financial solid company.

#### 4.4.2 Kralick Quick test

Kralicek's Quicktest is chosen as the creditworthiness model, which consists of an analysis of a system of four equations, on the basis of which the company's situation is evaluated. The calculation is shown in Table 21.

A remarkable improvement in the company's situation was in 2017 compared to 2016, when financial stability was very weak, mainly due to poorer debt and financial performance indicators, as well as slower profitability growth.

Then it is known that the company's situation in terms of sales and profits has improved significantly and this is reflected in the evaluation of the test – the company is moving to the “green zone”.

In 2019, the final evaluation was negatively affected by the variable X<sub>4</sub> (ROA), but a detailed examination shows that X<sub>4</sub> is 14% in 2019, on the border of placement in the lower band with a rating of 2 points. This means that the deterioration of the situation is not so significant and the company can still be considered financially stable.

The final assessment is the best in 2020, mainly due to the improvement of the variables X<sub>3</sub> (cash flow in sales) and X<sub>4</sub> (ROA). In the period 2017-2019, the assessment of the company's financial stability was a little worse, but still at a very high level.

Table 21 Kralick Quick test – CHEP CZ, s.r.o., 2016-2020

		2016	2017	2018	2019	2020
X <sub>1</sub> – equity quota	value	21%	45%	46%	36%	42%
	points	2	1	1	1	1
X <sub>2</sub> – Debt repayment period with CF	value	15,6	2,0	2,0	2,5	1,8
	points	4	1	1	1	1
X <sub>3</sub> – Cash flow in sales	value	1,0%	5,3%	7,4%	5,3%	8,9%
	points	4	3	3	3	2
X <sub>4</sub> – ROA	value	3%	25%	21%	14%	15%
	points	4	1	1	2	1
<b>X</b>		<b>3,50</b>	<b>1,50</b>	<b>1,50</b>	<b>1,75</b>	<b>1,25</b>

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

The auxiliary data for determining the cash flow (CF) required to calculate X<sub>2</sub> are given in Table 22.

Table 22 Cash flow calculation

CZK thous.	2016	2017	2018	2019	2020
Cash flow	3 269	20 018	35 908	32 073	57 294
EAT	1 432	21 909	32 814	29 438	42 280
Depreciation	478	663	742	768	876
Change in reserves	1359	-2554	2352	1867	14138

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

From the results of the test, it can be concluded that the company has moved to the category of creditworthy companies in recent years and the situation is improving. Due to the fact that the company paid the entire amount of losses from previous years (as already mentioned in the analysis of the horizontal analysis of liabilities), it can be expected that the financial situation will continue to improve in the coming years. However, the company must pay attention to stabilizing profit and sales growth.

#### 4.4.3 IN05 model

The calculation of indicators needed for the IN05 model is performed in Table 23.

In the case of a low-indebted company, the value of IN05 can be significantly affected by indicator B (EBIT / Interest expense), which is based on a very high number or even cannot be calculated due to zero in the denominator. This case is characteristic of CHEP CZ in the years 2017-2020. For these reasons, it is recommended to use a value of 9 instead of very high B values (in 2017 and 2019) or in a situation where interest expense is zero (as in 2018 and 2020).

The calculation shows that the company was in the so-called “gray zone”, but since 2017 it has managed to get into the zone of companies that create value. In 2017, all variables increased. The variable B, which indicates a very low need or no need for the company to pay interest, had a particularly positive effect on the final value of IN05.

Table 23 IN05 model – CHEP CZ, s.r.o., 2016-2020

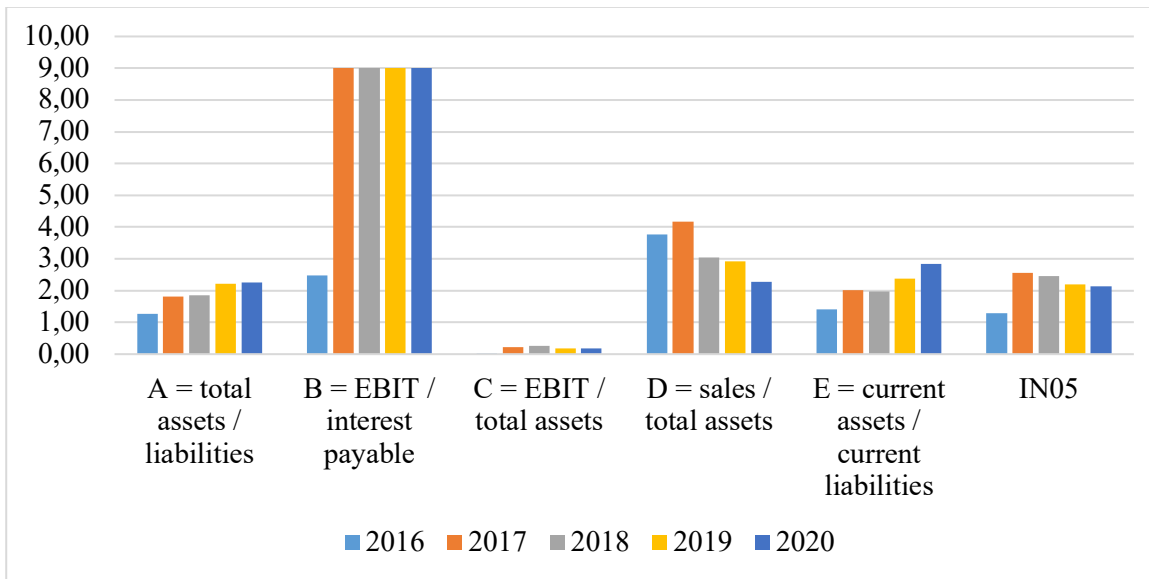
	2016	2017	2018	2019	2020
A = total assets / liabilities	1,27	1,82	1,86	2,21	2,25
B = EBIT / interest payable	2,47	40,14 (9,00)	*(9,00)	217,4 (9,00)	*(9,00)
C = EBIT / total assets	0,03	0,23	0,26	0,18	0,19
D = sales / total assets	3,76	4,18	3,04	2,91	2,27
E = current assets / current liabilities	1,40	2,02	1,97	2,37	2,83
IN05	1,29	2,56	2,45	2,19	2,14

\*cannot be calculated, because Interest payable = 0.

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

The evolution of the variables used in the IN05 model is illustrated by Figure 17. Higher values contribute positively to the resulting IN05 value. The results of the horizontal analysis revealed a positive development of the company's total assets, which is reflected in the growth of variables A and E. Conversely, less stable sales situation and especially their decline in 2020 is reflected in the reduction of variable D. The values of variable C are also very low, because the company's profits are not high enough compared to the assets.

Figure 17 IN05 model – CHEP CZ, s.r.o., 2016-2020



Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

From the results of the calculation of the IN05 index, it can be concluded that the company is in a good situation where it can create value for its stakeholders. Based on this model, as well as the results of other models used, the company can be recommended to focus on sales and profit growth.



## 5 Results and Discussion

In the practical part of the work was performed industry analysis and financial analysis of the company CHEP CZ, s.r.o., which is engaged in the service of pallet pooling.

From the analysis, it can be concluded that the pallet pooling market is very attractive for new competitors, but so far it faces problems in overcoming existing business patterns and customer habits. A company operating in this sector must be financially stable enough to inspire trust in suppliers and gain significant customers in the large and small business sector. At the same time, the company must have sufficient financial resources for the period of development, when it does not yet have enough customers to achieve the required profits and sales. The financial analysis of CHEP CZ provided additional information in relation to the current and future position in this market.

The horizontal and vertical analysis of the balance sheet showed that the company was constantly increasing its total assets. The largest increase was achieved in 2018, and the company itself wrote on its website that it increased the number of leased pallets by more than a million pieces. This growth was also seen in the horizontal analysis of the income statement. A large part of the company's liabilities consisted of the accumulated loss from previous years, but since 2016 the company has used all its profits to cover this loss. In 2020, the company managed to cover the loss of previous years from the current accounting period, which can be assessed as a great success.

It is also interesting that the company has no long-term liabilities. External sources had the largest share in liabilities, which continued to decline in the period under review, while the share of equity increased by more than 20 percent in the period under review. Current assets accounted for the largest share, accounting for more than 90 percent of total assets. This makes CHEP CZ different from the average industry CZ-NACE 77– Rental and leasing activities, where current assets make up about one-fifth of the company's total assets. This is due to the fact that CHEP CZ has most of its assets leased from other subsidiaries under CHEP Europ B.V.

The analysis of the profit and loss statement showed that revenues were still growing in 2016-2020. From 2016 to 2020, sales almost doubled. In 2020, they amounted to CZK 646,4 million. After the loss in 2015, the economic result always showed a profit.

The company's return on equity showed significant growth until 2017, but has stagnated in recent years with a slight decline. In recent years, the company CHEP CZ, s.r.o. has achieved a competitive comparison in terms of ROE and ROA of the Czech market. better results. From the point of view of a potential investor, it would be better to invest in CHEP CZ, s.r.o. However, the company has lower profitability compared to the industry (in terms of ROS). However, stable and strong growth in this area recently indicates positive expectations in relation to future developments.

The company CHEP CZ, s.r.o. seeks to maintain an average liquidity management strategy, as it has adhered to the corresponding values of this strategy in recent years. The company holds sufficient funds to pay its short-term liabilities. On the contrary, industries in this indicator reached low levels, which indicate a low ability to repay short-term liabilities at once.

Assets turnover ratio CHEP CZ, s.r.o. showed a declining trend, which is not positive for the company. The company should increase sales to achieve higher asset turnover now and in the future. Compared to the industry, CHEP CZ, s.r.o. has significantly shorter asset turnover time. The turnover time of receivables is longer than the turnover time of liabilities, and in this respect the values of the cash conversion cycle indicator are increasing. It is opposite to the comparison with the industry, where this indicator has negative values. The company repays trade debts before it collects receivables, and the increasing value of the trade deficit may necessitate additional sources of financing. This is also confirmed by the growing indicator of capital needs.

Another group of indicators monitored was solvency ratios. The development of the debt to asset ratio decreased throughout the period under review and reached its lowest value in 2020 (0,44). Creditors would prefer a lower level of risk and CHEP CZ, s.r.o. approaching. Looking at the development of Times interest earned indicators, it is clear that CHEP CZ, s.r.o. has sufficient funds to cover interest expenses. The company has no problem in this area to obtain potentially new loans.

At the end of the work, bankruptcy and creditworthiness models were applied to determine the financial health of the analyzed company or its threat due to financial distress. Altman's Z-score was chosen as the bankruptcy model. At the beginning of the period under review in 2016, the company was just above the crisis zone, but it already belonged to the

zone of prosperity, when over time it managed to consolidate its position. Company does not face bankruptcy based on the Z-score.

Kralicek's Quicktest was used from the creditworthiness model, which showed that the company is doing well in terms of financial health and creditworthiness, and only in 2016 was it not included among creditworthy companies. The positive trend of values is gradually increasing and placing the company in the creditworthiness zone. The financial situation was stable throughout and the revenue situation continued to improve. If the company maintains its development in this trend, it will rank among the very creditworthy companies.

The calculation of the IN05 index shows results very similar to the conclusions of the Altman's model: in 2016, the company was in the "gray" zone of uncertainty, but since 2017 the company's financial situation has been improving. The positive assessment is mainly driven by a stable increase in the company's assets. The fact that they consist mainly of current assets can be assessed as risky, but taking into account the specifics of the industry and the company's relationships with subsidiaries, this does not raise too much concern. The results also suggest that the company should focus on stabilizing sales and profit growth. The possible entry of competition into the attractive and promising pallet pooling market, as well as rising price levels and wages in the country may hinder compliance with this recommendation.

The ongoing pandemic crisis should not have any noticeable impact on the company's finances in the short or long term, as most clients still need logistics and warehousing needs for their production, which use pallet pooling services and which means savings for them.

## 6 Conclusion

The main objectives of this work were evaluation of the financial health of the CHEP CZ, s.r.o., making conclusions and recommendations for improving the company's economic results. The partial goal of the work was to define important global trends and industry factors affecting the company's financial situation. These goals were met within the performed analysis of trends and industries and financial analysis of CHEP CZ, s.r.o. within the five-year period 2016-2020.

Based on the results of the analysis of financial statements and especially the results of selected bankruptcy and creditworthiness models (Altman model, Kralicek's Quicktest, IN05), as well as the results of the company comparison with the industry CZ-NACE 77 – Rental and leasing activities, it is possible to confirm the established research assumption: the CHEP CZ, s.r.o. is a financially stable company. It is a solvent company with the scope for improvement.

During the period under review, the company continued to increase its economic result and at the same time regularly covered the accumulated losses from previous years. If the company continues to maintain the growth rate of total turnover, then it can gain a stronger position within the Czech Republic and in other companies of the CHEP group. As stated in the annual report, over the years the range of corporate customers in the Czech market continues to expand and more and more companies use pallet pooling, similarly to Western markets. In recent years, this fact has also been seen in the company's financial condition, where almost all values of indicators show a positive development trend.

It is recommended for the company to focus on stabilizing sales and profit growth. The company wants to achieve its goals by establishing long-term relationships with important clients – wholesalers and retailers. Limitations on its growth may lie in the overall growth of the price level in the Czech Republic, as well as in the concerns of entrepreneurs about future economic development and the reluctance to enter into long-term contracts. On the contrary, the trend of sustainable logistics and circular economy has a positive effect.

CHEP CZ, s.r.o. can so far be evaluated as a successful example of innovator and its penetration on the Czech market with a strong support of foreign entities.

## 7 References

- ABOR, Joshua Y., 2017. *Entrepreneurial Finance for MSMEs*. Cham: Springer. 444 p. ISBN 978-3-319-34021-0.
- ATLANTIS, 2021. *70+ poměrových ukazatelů používaných ve FinAnalysis* [online]. Available at: <<https://www.finanalysis.cz/pouzite-pomerove-ukazatele.html>>. Accessed 5 August 2021.
- BACH, Mirjana et al., 2019. Text Mining for Big Data Analysis in Financial Sector: A Literature Review. *Sustainability*. Basel: MDPI AG, 11(5), pp. 1-27. DOI:10.3390/su11051277
- BEST COMMUNICATIONS, 2020, 5. March. Double-Digit Growth For CHEP In The Czech Republic. *Best Communications* [online]. Available at: <<https://www.bestcg.com/press-releases/double-digit-growth-for-chep-in-the-czech-republic/>>. Accessed 10 September 2021.
- BLAHA, Z., JINDŘICHOVSKÁ, I., 2011. *Jak posoudit finanční zdraví firmy*. 3<sup>rd</sup> edition. Prague: Management Press. ISBN 80-7261-145-3.
- BRAMBLES. Our History. *Brambles* [online]. Available at: <<https://www.brambles.com/our-history/>>. Accessed 10 September 2021.
- BREALEY, R. A., S. C. MYERS a F. ALLEN. 2008. *Principles of Corporate finance*. McGraw-Hill International Editions. ISBN 978-007-126675-8.
- ČESKO. § 19a zákona č. 563/1991 Sb., o účetnictví. In: *Zákony pro lidi.cz* [online]. © AION CS 2010-2021. Available at: <<https://www.zakonyprolidi.cz/cs/1991-563#p19a>>. Accessed 10 August 2021.
- ČESKO. Vyhláška č. 500/2002 Sb., kterou se provádějí některá ustanovení zákona č. 563/1991 Sb., o účetnictví, ve znění pozdějších předpisů, pro účetní jednotky, které jsou podnikateli účtujícími v soustavě podvojného účetnictví. In: *Zákony pro lidi.cz* [online]. © AION CS 2010-2021. Available at: <<https://www.zakonyprolidi.cz/cs/2002-500#cast1>>. Accessed 20 August 2021.
- CFI, 2021. Activity Ratios. *Corporate Finance Institute* [online]. © 2015 to 2021 CFI Education Inc. Available at: <<https://corporatefinanceinstitute.com/resources/knowledge/finance/activity-ratios/>>. Accessed 12 August 2021.

- CFI, 2021. Analysis of Financial Statements. *Corporate Finance Institute* [online]. © 2015 to 2021 CFI Education Inc. Available at: <<https://corporatefinanceinstitute.com/resources/knowledge/finance/analysis-of-financial-statements/>>. Accessed 12 August 2021.
- CHANDRA, Prasanna, 2008. *Investment analysis and portfolio management*. New Delhi: Tata McGraw Hill Education Private Ltd. ISBN 978-0-07-024907-3.
- CHEP, 2018, 16. July. Rychlý Nárůst Využití Poolingového Řešení V Čechách A Na Slovensku. *CHEP* [online]. Available at: <<https://www.chep.com/cz/cs/fresh/rychly-narust-vyuziti-poolingoveho-reseni-v-cechach-na-slovensku>>. Accessed 10 September 2021.
- CHEP, 2019. Společnost Brambles je mezi třemi nejudržitelnějšími společnostmi na světě. *CHEP – A Brambles Company*. [online]. Available at: <<https://www.chep.com/cz/cs/fresh/spolecnost-brambles-je-mezi-tremi-nejudrzitelnejsimi-spolecnostmi-na-svete>>. Accessed 5 July 2021.
- CHEP, 2021, 28. June. Brambles, mateřská společnost CHEP, dosáhla provozní uhlíkové neutrality. *CHEP – A Brambles Company* [online]. Available at: <<https://www.chep.com/cz/cs/brambles-materska-spolecnost-chep-dosahla-provozni-uhlikove-neutrality>>. Accessed 10 September 2021.
- CHEP, 2021. Palety CHEP. *CHEP – A Brambles Company* [online]. Available at: <<https://www.chep.com/cz/cs/products>>. Accessed 10 September 2021.
- CHIBILI, Michael, 2019. *Basic Management Accounting for the Hospitality Industry*. 2<sup>nd</sup> edition. Houten: Noordhoff Uitgevers. 380 p. ISBN 978-90-01-86733-1.
- CLAESSENS, Ruben, 2020. *A Start With Corporate Finance* [Kindle edition]. Claessens Ruben. 56 p. ASIN B0878RJQLB.
- CUCARO, Olga M. S., 2019. *The bankruptcy prediction model Z-ScoreM for Italian Manufacturing Listed Companies and Z'-ScoreM for Italian Industrial Company*. Olga Maria Stefania Cucaro. 35 p. ISBN 978-8-829-59167-1.
- DERPAL LOGISTIC, 2021. *Derpal logistic* [online]. Available at: <<https://www.derpall-logic.cz>>. Accessed 10 September 2021.
- DEUSEN, Van, Cheryl, WILLIAMSON, Steven, BABSON, Harold C., Chris, 2007. *Business Policy and Strategy: The Art of Competition*. 7<sup>th</sup> edition. New York: CRC Press. 241 p. ISBN 978-0-8493-8325-0.

- DLUHOŠOVÁ, D. 2008. *Finanční řízení a rozhodování podniku. Analýza investování, oceňování, riziko, flexibilita*. 2<sup>nd</sup> edition. Prague: Ekopress, s.r.o., ISBN 978-80-86929-44-6.
- EJUSTICE, 2021. Sbíрка listin: CHEP CZ, s.r.o. *Veřejný rejstřík a Sbíрка listin* [online]. Available at: <<https://or.justice.cz/ias/ui/vypis-sl-detail?dokument=51752484&subjektId=714607&spis=157000>>. Accessed 10 September 2021.
- ELANDI, François, 2019. *Bilingual Dictionary of Terms: Banks. Finances. Money. Financial Markets*. Xlibris Corporation. 954 p. ISBN 978-1-984-57526-5.
- FEBMAT, 2016. *Horizontální analýza*. [online]. Available at: <<https://www.febmat.com/clanek-horizontalni-analyza/>>. Accessed 5 July 2021.
- FRIDSON, M. AND ALVAREZ, F., 2002. *Financial statement analysis*. Hoboken: John Wiley & Sons. ISBN 978-0-471-40917-5.
- GRÜNWARD, R., HOLEČKOVÁ, J., 2007. *Finanční analýza a plánování podniku*. Prague: Ekopress, ISBN 978-80-86929-26-2.
- HANIF, M., MUKHERJEE, A., 2020. *Financial Reporting and Financial Statement Analysis for Calcutta University*. Chennai: McGraw-Hill Education. 648 p. ISBN 978-93-89691-70-2.
- HELFERT, E., 2001. *Financial analysis: tools and techniques*. Boston: McGraw-Hill, ISBN 0-07-137834-0.
- KALINOVÁ, Kateřina, 2020. *Financial analysis* [online]. Prague: VŠFS. Available at: <[https://is.vsfs.cz/auth/el/vsfs/leto2021/BA\\_FA/um/](https://is.vsfs.cz/auth/el/vsfs/leto2021/BA_FA/um/)>. Accessed 5 July 2021.
- KAYODE, Musbau, 2015. The Users of Accounting Information and their Needs. *An Introduction to Accounting and its Branches*. GRIN Verlag. ISBN 978-3-668-06768-4.
- KISLINGEROVÁ, E. a kol. 2010. *Manažerské finance*. 3<sup>rd</sup> edition. Prague: Nakladatelství C. H. Beck, ISBN 978-80-7400-194-9.
- KISLINGEROVÁ, Eva, 2008. *Finanční analýza krok za krokem*. 2<sup>nd</sup> edition. Prague: C. H. Beck. 135 p. ISBN 978-80-7179-713-5.
- KNAPKOVÁ, A. et al., 2017. *Finanční analýza*. Prague: Grada Publishing, ISBN 978-80-271-0563-2.
- KNÁPKOVÁ, A., PAVELKOVÁ, D., 2010. *Finanční analýza. Komplexní průvodce s příklady*. Praha: Grada Publishing,a.s., ISBN 978-80-247-3349-4.

- KOTĚŠOVCOVÁ, Jana, 2020. 3. *POMĚROVÉ UKAZATELE (financial ratios)*. [online]. Available at: <[https://is.vsfs.cz/auth/el/vsfs/leto2020/N\\_MaEk\\_B/um/cviceni\\_kotesovcova\\_jana/ME\\_II\\_cast\\_Financni\\_analyza\\_Pomerove\\_ukazatele\\_FA.pdf](https://is.vsfs.cz/auth/el/vsfs/leto2020/N_MaEk_B/um/cviceni_kotesovcova_jana/ME_II_cast_Financni_analyza_Pomerove_ukazatele_FA.pdf)>. Accessed 10 September 2021.
- KRACÍK, Lukáš, 2016. Naučte se číst v účetních výkazech: co jsou aktiva a pasiva? *Měšec.cz*. [online]. Available at: <<https://www.mesec.cz/clanky/naucte-se-cist-v-ucetnich-vykazech-co-jsou-aktiva-a-pasiva/>>. Accessed 5 August 2021.
- KŘÍŽOVÁ, Zuzana et al., 2012. *Finanční účetnictví*. 2<sup>nd</sup> edition. Brno: Masarykova univerzita. ISBN 978-80-210-5832-3.
- KUBÁT, Vojtěch, 2016. Největší půjčovnu palet na světě využívají Kofola, Budvar či Lego. Firma CHEP v Česku stále roste. *Hospodářské noviny* [online]. Available at: <<https://archiv.hn.cz/c1-65359460-nejvetsi-pujcovnu-palet-na-svete-firmu-chep-vyuzivaji-i-kofola-budvar-ci-lego>>. Accessed 10 September 2021.
- KUBĚNKA, Michal, 2016. The Success of Business Failure Prediction Using Financial Creditworthy Models. *European Financial Systems 2016 : proceedings of the 13th International Scientific Conference* [online]. Brno: Masaryk University. ISBN 978-80-210-8308-0. Available at: <<https://dk.upce.cz/handle/10195/67288>>. Accessed 5 August 2021.
- KUBÍČKOVÁ, Dana, JINDŘICHOVSKÁ, Irena, 2015. *Finanční analýza a hodnocení výkonnosti firmy*. Prague: C. H. Beck. 364 p. ISBN 978-80-7400-538-1.
- LANDA, Martin, 2008. *Základy účetnictví*. Key publishing. 254 p. ISBN 978-80-87071-86-1
- LPR, 2021. *LPR – main page* [online]. Available at: <<https://www.lpr.eu/cs/>>. Accessed 10 September 2021.
- MACHEK, Ondřej, 2014. Long-term predictive ability of bankruptcy models in the Czech republic: evidence from 2007-2012. *Central European Business Review*. Prague: VŠE, 3(2), pp. 14-17. DOI: 10.18267/j.cebr.80
- Mezinárodní účetní standardy. *Linroten.cz* [online]. n/d. Available at: <<https://www.libroten.cz/blog/mezinarodni-ucetni-standardy>>. Accessed 15 August 2021.
- MIT, 2020. Finanční analýza podnikové sféry za rok 2019. *Ministry of Industry and Trade* [online]. Available at: <<https://www.mpo.cz/cz/rozcestnik/analyticke-materialy-a->



- statistiky/analyticke-materialy/financni-analyza-podnikove-sfery-za-rok-2019--255382/>. Accessed 10 September 2021.
- MIT, 2020. Finanční analýza podnikové sféry za rok 2019. *Ministry of Industry and Trade*. [online]. Available at: <<https://www.mpo.cz/cz/rozcestnik/analyticke-materialy-a-statistiky/analyticke-materialy/financni-analyza-podnikove-sfery-za-rok-2019--255382/>>. Accessed 5 August 2021.
- MONTAÑÉS, E. and DIAZ, A., 2012. Redesigning organisation, systems and networks: the transformation of the European network of CHEP. *International Journal of Business Excellence*. Inderscience Enterprises Ltd, 5(5), p.521. DOI: 10.1504/IJBEX.2012.048801
- NEWSTEX, 2019. *Solvency ratios vs. liquidity ratios* [online]. New York: Newstex. Available at: <https://www.proquest.com/blogs-podcasts-websites/solvency-ratios-vs-liquidity/docview/2251440429/se-2?accountid=37662>>. Accessed 5 August 2021.
- Petrit HASANAJ & Beke KUQI. Analysis of Financial Statements: The Importance of Financial Indicators in Enterprise. *Humanities and Social Science Research*. Ideas Spread, 2(2). DOI:10.30560/hssr.v2n2p17.
- RETAIL NEWS, 2020, 16. November. Sdílené palety zvyšují podíl na trhu. *Retail News* [online]. Available at: <<https://www.retailnews.cz/2020/11/16/sdilene-palety-zvysuji-podil-na-trhu/>>. Accessed 10 September 2021.
- ROBINSON, Thomas et al., 2015. *International Financial Statement Analysis*. John Wiley & Sons. 1072 p. ISBN 978-1-1190-2974-8.
- RŮČKOVÁ, Petra, 2019. *Finanční analýza: metody, ukazatele, využití v praxi*. Praha: Grada Publishing. ISBN 978-80-271-2028-4.
- SAKEVYCH, Alex, KOBYLETSKII, Patrick, 2015. *An Introducing to the Financial Statement Analysis*. Finstanon Books. 38 p. ISBN 978-3-739-62467-9.
- SCHOELLERALLIBERT, 2021. *Co nás čeká a nemine: Moderní udržitelná logistika*. [online]. Available at: <<https://www.schoellerallibert.com/cz/novinky/produkty/co-nas-ek-a-nemine-modern-udriteln-logistika/>>. Accessed 10 September 2021.
- SEDLÁČEK, J. 2011. *Finanční analýza podniku*. 2<sup>nd</sup> edition. Brno: Computer Press, a.s., ISBN 978-80-251-3386-6.
- SEKHAR, Chandra, 2018. *Capital Budgeting: decision methods*. Independently publishing. ISBN 978-1-9802-0345-2.

- ŠTEKER Karel, OTRUSINOVÁ Milana, 2016. *Jak číst účetní výkazy: Základy českého účetnictví a výkaznictví*. 2<sup>nd</sup> edition. Prague: Grada Publishing a.s. 288 p. ISBN 978-80-271-0048-4.
- SURATMI, Rahmawati I. Y., 2020. *The effect of profitability ratio, liquidity ratio, leverage ratio, and company size on sukuk rating corporation during 2014-2017 periods*. Les Ulis: EDP Sciences, 86, 10 p. DOI: 10.1051/shsconf/20208601027
- SUŠICKÝ, Jan, 2011. *Využitelnost bankrotních modelů a jejich aplikace v podmínkách České republiky* [Dissertation]. Prague: CULS. Supervisor: Rosochatecká, Eva. 217 p.
- TENG, X., CHANG, B. and WU, K., 2021. The Role of Financial Flexibility on Enterprise Sustainable Development during the COVID-19 Crisis – A Consideration of Tangible Assets. *Sustainability*. Basel: MDPI, 13(3), p.1245. DOI: 10.3390/su13031245
- TRACY, Axel, 2012. Ratio Analysis Fundamentals. *RatioAnalysis.net*. 86 p. ISBN 978-1-291-23567-8.
- VANČUROVÁ, Pavlína, 2013. Druhové a účelové členění výsledovky - jaké přináší výhody a nevýhody? *DAUC*. Prague: Wolters Kluwer. ISSN 2533-4484. [online]. Available at: <<https://www.dauc.cz/dokument/?modul=li&cislo=46145>>. Accessed 7 August 2021.
- VASILYEVA, O., 20 The value of the analysis of the financial activities. *International Journal of the Humanities and Natural Sciences*. Novosibirsk, Russia: OOO Capital, 2(3), pp. 101-103. ISSN 2500-1086.
- VOCHOZKA, Marek, 2011. *Metody komplexního hodnocení podniku*. Prague: Grada. Finanční řízení. ISBN 978-80-247-3647-1
- WEYGANDT, Jerry, KIMMEL, Paul, KIESO, Donald, 2019. *Financial Accounting*. Hoboken: John Wiley & Sons. 848 p. ISBN 9781-1-1959-459-8.
- ZUTTER, C. and GITMAN, L., 2015. *Principles of Managerial Finance: Brief*. 1<sup>st</sup> edition. Boston: Pearson Presence Hall, ISBN 978-1-292-06010-1.

## **8 Appendix**

Appendix A	Balance sheet of the CHEP CZ, s.r.o. (CZK thousand), 2016-2020.....	84
Appendix B	Income statement of the CHEP CZ, s.r.o. (CZK thousand), 2016-2020....	85

Appendix A Balance sheet of the CHEP CZ, s.r.o. (CZK thousand), 2016-2020

<b>CHEP CZ, s.r.o.</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>Total assets</b>	<b>89 137</b>	<b>90 841</b>	<b>158 910</b>	<b>208 692</b>	<b>284 487</b>
A. Receivables for the subscribed capital stock	0	0	0	0	0
B. Fixed assets	1 269	1 066	2 090	2 372	9 393
B.II. Tangible fixed assets	1 269	1 066	2 090	2 372	9 393
B.II.2. Fixed movables and the collections of fixed movables	1 269	1 066	2 090	2372	1 976
B.II.5. Advance payments for tangible fixed assets and tangible fixed assets in progress	0	0	0	0	7 417
C. Current assets	87 340	89 775	152 497	202 033	270 207
C.I. Inventory	0	0	18	444	105
C.I.1. Material	0	0	18	444	105
C.II. Receivables	67 853	80 393	140 456	188 298	246 603
C.II.1. Long-term receivables	0	1 614	1 702	2 059	4 915
C.II.2. Short-term receivables	67 853	78 779	138 754	186 239	241 688
C.IV. Funds	19 487	9 382	12 023	13 291	23 499
C.IV.1. Cash in treasury	0	69	30	0	0
C.IV.2. Cash on bank account	19 487	9 313	11 993	13 291	23 499
D. Accrued assets	528	0	4 323	4 287	4 887
D.1. Prepaid expenses	528	0	4 323	4 287	4 887
<b>Total Liabilities</b>	<b>89 137</b>	<b>90 841</b>	<b>158 910</b>	<b>208 692</b>	<b>284 487</b>
A. Equity	18 531	40 440	73 254	75 961	118 242
A.I. Registered capital	64 600	64 600	64 600	43 300	43 300
A.II. Capital surplus and capital finds	30 000	30 000	30 000	30 000	30 000
A.III. Funds from profit	0	0	0	0	0
A.IV. Net profit or loss from previous years (+/-)	-77 501	-76 069	-54 160	-26 777	2 662
A.V. Net profit or loss for the current period (+/-)	1 432	21 909	32 814	29 438	42 280
B.+C. Liabilities (external resources)	70 399	50 024	85 554	94 337	126 445
B. Provisions	8 197	5 643	7 995	9 235	31 013
C. Payables	62 202	44 381	77 559	85 102	95 433
C.I. Long-term payables	0	0	0	0	0
C.II. Short-term payables	62 202	44 381	77 559	85 102	95 433
D. Accrued liabilities	207	377	102	38 394	39 799

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)

Appendix B Income statement of the CHEP CZ, s.r.o. (CZK thousand), 2016-2020

CHEP CZ, s.r.o.	2016	2017	2018	2019	2020
I. Revenues from own products and services	300 127	335 459	401 633	486 117	497 933
II. Revenues from merchandise	0	0	0	0	0
A. Consumption for products	281 456	315 960	381 094	476 581	470 486
A.2. Material and energy consumption	8 621	9 414	10 431	14 195	15 471
A.3. Services consumption	272 835	306 546	370 663	462 386	455 015
B. Changes in inventory of own products (+/-)	0	0	0	0	0
C. Capitalization (-)	0	0	0	0	0
D. Personal costs	39 433	43 077	54 821	83 078	95 865
D.1. Wages and salaries	29 996	32 259	40 769	61 208	71 184
D.2. Social security and health insurance costs and other costs	9 437	9 818	14 052	21 870	24 681
E. Operating part adjustments	1838	664	740	1 395	371
III. Other operating revenues	35 072	44 132	80 819	120 907	146 449
F. Other operating costs	9 877	-1 660	4 233	7 448	21 412
<b>Operating profit/loss (+/-)</b>	<b>2 595</b>	<b>21 550</b>	<b>41 564</b>	<b>38 522</b>	<b>56 248</b>
VI. Interest revenues and similar revenues	0	0	365	1 290	1 968
J. Interest costs and similar costs	972	515	0	174	0
VII. Other financial revenues	91	0	0	0	<b>0</b>
K. Other financial costs	282	878	653	1 988	4 232
<b>Profit/loss from financial operations (+/-)</b>	<b>-1 163</b>	<b>-1 393</b>	<b>-288</b>	<b>-872</b>	<b>-2264</b>
<b>Profit/loss before tax (+/-)</b>	<b>1 432</b>	<b>20 157</b>	<b>41 276</b>	<b>37 650</b>	<b>63 984</b>
L. Income tax	0	-1 752	8 462	8 212	<b>11 704</b>
<b>Profit/loss after tax (+/-)</b>	<b>1 432</b>	<b>21 909</b>	<b>32 814</b>	<b>29 438</b>	<b>42 280</b>
<b>Profit/loss of accounting period (+/-)</b>	<b>1 432</b>	<b>21 909</b>	<b>32 814</b>	<b>29 438</b>	<b>42 280</b>
<b>Net turnover of accounting period</b>	<b>335 290</b>	<b>379 591</b>	<b>482 817</b>	<b>608 314</b>	<b>646 350</b>

Source: own processing based on the financial statements of the CHEP CZ s.r.o. (eJustice, 2021)