

Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Economics



Bachelor Thesis

Financial Analysis of Škoda Company

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

BACHELOR THESIS ASSIGNMENT

Aigul Bakirova

Business Administration

Thesis title

Financial analysis of Škoda company

Objectives of thesis

This bachelor thesis deals with the financial analysis of Škoda company. The aim of the thesis is to give a comprehensive overview of the financial health of the company.

Objectives of the thesis are to show the reality of the company using figures, to review the past trends of the entity, to understand actual performance, the current financial position, and forecast future of the company.

In literature financial analysis is used to analyze whether an entity is stable, solvent, liquid or profitable enough to warrant a monetary investment. When looking at a specific company, a financial analyst conducts analysis by focusing on the income statement, balance sheet and cash flow statement.

Methodology

The work consists of three parts.

The methodological part is based on a theoretical basis for defining methods.

The second part is some information about company, their production, industry analysis and SWOT analysis of Škoda Auto a.s.

The practical part consists of using methods, described in theoretical part. Such as horizontal and vertical analysis of financial statements, analysis of ratios and predictions of the financial distress of the company.

The proposed extent of the thesis

40 – 60 pages

Keywords

financial analysis, ratios, horizontal and vertical analysis

Recommended information sources

Caouette, John B., Edward I Altman, and Paul Narayanan. *Managing Credit Risk: The Next Great Financial Challenge*. New York: John Wiley & Sons, 1998.

Gibson, Charles H. *Financial Statement Analysis*. 13th ed. Canada: South-Western Cengage Learning, 2012.

Quiry, Pascal, Yann Le Fur, Antonio Salvi, and Maurizio Dallochio. *Corporate Finance: Theory and Practice*, 3rd Edition. 3rd ed. United States: Wiley, John & Sons, 2011.

Expected date of thesis defence

2017/18 WS – FEM (February 2018)

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Declaration

I declare that I have worked on my bachelor thesis titled "Financial Analysis of Škoda company" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on

Acknowledgement

First of all, I would like to express my gratitude to my supervisor , doc. Ing. Mansoor Maitah, Ph.D. et Ph.D., for his aspiring guidance, constructive criticism in comments on this thesis, patience, motivation, enthusiasm, and immense knowledge.

Also, I would like to thanks all academic workers, lecturers and teachers, for the knowledge base which became a solid fundament for writing this thesis.

Finally, I want to thank the whole my family for the the opportunity to study abroad, for their love, encouragement and constant support throughout my studies.

Financial Analysis of Škoda company

Summary

The main aim of the thesis is to prepare the financial analysis of Škoda Company and to apply theoretical knowledge accumulated after years of study. The analysis has been provided for a period of five years 2012– 2016. All used data have been taken the provided annual reports of the company on its website.

For achieving the goal of the bachelor's work i divided the thesis into three parts. The first is theoretical part. I have provided readers with the definition of financial analysis, explanations of the formulas and with the conditions of implementation. The second part describes company profile of ŠKODA AUTO a.s., its history, product portfolio, automotive industry in general and SWOT analysis of chosen company. In the third part I have used different approaches such as horizontal and vertical analysis, analysis of ratios and predictions of the financial distress .

Keywords

Financial analysis, ratios, horizontal and vertical analysis

Finanční analýza firmy Škoda

Souhrn

Hlavním cílem této práce je příprava finanční analýzy Škoda Company a použití teoretických znalostí v praxi. Analýza byla prováděna po dobu pěti let od roku 2012 do 2016. Všechny údaje byly čerpány z oficiálního ročního reportu podniku z oficiální webové stránky. Tato bakalářská práce se dělí na 3 hlavní části. První část je zaměřena na teoretický úvod do problematiky. V teoretické části jsou uvedeny definice finanční analýzy, vysvětlení vzorců a podmínky pro jejich použití. Druhá část popisuje podnik Škoda AUTO a. s., jeho historii, popis všech výrobků, představení automobilového průmyslu ve světě a SWOT analýzu vybraného podniku. Ve třetí části jsem použila různé přístupy a těmi jsou: horizontální a vertikální analýza, analýza poměry a predikce finančního bankrotu.

Klíčová slova

Finanční analýza, poměry, horizontální a vertikální analýza

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List of abbreviations:

a.s – joint-stock company (akciová společnost)

CZK – Czech Koruna

EBIT – Earnings Before Interest and Taxes

EU – European Union

EUR – Euro

GDP – Gross Domestic Product

GM – General Motors

PSA – Peugeot Citroën Automobiles

ROA – Return On Assets

ROCE – Return On Capital Employed

ROS – Return On Sales

s.a. - joint-stock company (akciová společnost)

SWOT – Strengths, Weaknesses, Opportunities and Threats

1. Introduction

The main goal of this thesis is to conduct a financial analysis of the Czech company ŠKODA AUTO a.s., which is a part of one of the world's biggest automobile concerns Volkswagen Group. The analysis will be performed on the basis of financial annual reports of the company (particularly balance sheet and income statement, which is published on the official website of the company) and using following techniques: horizontal and vertical analysis, financial ratios analysis and forecasting financial failure.

I have chosen this topic because automotive industry is one of the most powerful industries in the world economy, which influences our everyday life, country's macroeconomic indicators, and other industries as well. As for financial analysis, it is a great approach, which can help to interpret figures in financial reports and provide us with an understanding of the company's financial performance.

The first chapter of my work will be provided with theory, which includes definition and objectives of financial analysis, its users, and techniques. I will pay special attention to ratio analysis as long as it is the most powerful tool in terms of analysis. Ratio analysis will include formulas, its purpose, and benchmarks for these ratios in the automotive industry.

In the second chapter I will describe Škoda Auto's company profile, its history and product portfolio. As long as Škoda Auto belongs to the automotive industry, I will provide readers with automotive industry analysis, focusing on Czech automotive industry. In this part I will also conduct SWOT analysis of the company, explaining the approaches and define strengths and weaknesses.

And last but not least, in the third chapter of the thesis I will compute the ratios described in the theoretical part and analyze derived figures relying on the automotive industry's benchmarks. I will also conduct common-size analysis, particularly horizontal and vertical analysis and use univariate and multivariate models in order to calculate forecasting of financial failure. In this part, I will use data for 5 years (2012-2016) in order to observe company's trends and changes in indicators.

2. Objectives and methodology

This bachelor thesis deals with the financial analysis of Škoda Company. The aim of the thesis is to give a comprehensive overview of the financial health of the company.

Objectives of the thesis are to show the reality of the company using figures, to review the past trends of the entity, to understand actual performance, the current financial position, and forecast future of the company.

The work consists of three parts.

The methodological part includes a literature overview of methods and theory, necessary for further work. The second part is some information about company, their production, industry analysis and SWOT analysis of Škoda Auto a.s. The practical part constitutes an implementation of methods, described in the theoretical part (such as horizontal and vertical analysis of financial statements, analysis of ratios and predictions of the financial distress of the company).

3. Theoretical part

3.1 Definition and objectives of financial analysis

“Financial analysis is the process of evaluating businesses, projects, budgets and other finance-related entities to determine their performance and suitability.”¹

According to J.Holečková, financial analysis is "a set of activities designed to identify and evaluate complex financial situation"²

According to Moyer is “an exercise that assists in identifying the major strengths and weaknesses of a business enterprise, in addition to indicating whether the enterprise has enough cash to meet its official obligations; an efficient inventory management policy; sufficient plants and equipment; and an efficient capital structure, all of which are necessary for the enterprise to achieve its goals of maximizing the wealth of shareholders”³.

The main objective of financial analysis is evaluation of the financial position of the company, as well as to search an opportunity to improve the efficiency of the enterprise. The financial condition characterizes the use of the capital and financial resources and also shows financial competitiveness (including creditworthiness and solvency). Financial analysis is based on financial statements of an economic entity and forecasts future financial state.

Financial analysis can be external or internal.

External analysis is provided by persons out of the company, for example by external auditors. Internal analysis can be done by employees.

Among the major objectives of financial analysis can be seen:

- identification changes in the financial state of an enterprise,
- to determine the factors that cause changes in the financial condition,
- the definition of financial position,

¹ Investopedia, 2003. s.v *Financial analysis*. Accessed October 10, 2017.

<https://www.investopedia.com/terms/f/financial-analysis.asp>

² HOLEČKOVÁ, J. *Finanční analýza firmy*. Praha 2008: ASPI, p.9-1

³ Moyer et al. *Contemporary financial management* (U.S.A.:Cengage Learning,2011), 70

- the prediction of the main trends in the financial situation,
- to identify need for additional sources of financing.

3.2 Sources of financial analysis

To provide the financial analysis we have to work with company's accounting papers (balance sheet, income statement, and statement of cash flows), it will be a starting point and key informant.

A *Balance sheet* is a financial statement that summarizes a company's assets, liabilities and shareholders' equity at a specific point in time.⁴ (4) Assets are economic resources owned by a firm that are likely to produce future economic benefits and measurable with a reasonable degree of certainty. Liabilities are economic obligations of a firm arising from benefits received in the past that are required to be met with a reasonable degree of certainty and whose timing is reasonably well defined.⁵ The relations between assets and the total amount of liabilities and shareholders' equity should always be equal.

Assets are calculated as follows:

$$\text{Assets} = \text{Liabilities} + \text{Shareholders' equity}$$

(1)

Income statement (statement of earning) shows the current situation in company considering revenues and expenses for the specific period of time, the other words it shows net income. The income statement shows the information about sales and profits and can be calculate according to the formula 2.

⁴ Investopedia, 2003. s.v *Contingent Liability*. Accessed October 19, 2017
<https://www.investopedia.com/terms/b/balancesheet.asp>

⁵ Krishna G. Palepu, Paul M. Healy, Eric Peek, *Business Analysis and Valuation*, IFRS edition, 2013, ISBN 978-1-4080-5642-4, p.7

$$\text{Net income} = \text{Revenues} - \text{Expenses}$$

(2)

Statement of cash flows (statement of inflows and outflows of cash) shows the current situation of cash flow in the company for the specific period of time. This document shows the amounts of cash flow from operating activities, cash flow from investing activities as well as cash flow from financial activities.

While performing financial analysis, it must not be forgotten that periods of time in income statement and statement of cash flows should be the same, such as month, quarter or year.

3.3 Users of financial statement analysis

The main users of financial statement analysis include:

- *management of the company.*
The main aim for managers is planning, controlling and decision-making process. Management must understand the current financial situation of the company to be able to make operational and financing decisions.
- *owners and potential investors* are concerned with the risk of investing and returning. They should understand at which point of success is company now, for analyzing the profitability of their investments, rather to sell or buy.
- *lenders* are interested in company's profit and cash flow, because of the confidence that financial situation is stable enough to return their money.
- *employees* use the financial information to understand the stability and profitability of the company. It gives them the picture of the work conditions and employment opportunities.
- *Government agencies* review the financial statements to control the amount of taxes payable by business

3.4 Methods of financial statement analysis

There are several techniques of analyzing financial position:

1. common-size analysis,
2. ratio analysis,
3. financial statement variation by type of industry,
4. review of descriptive material,
5. comparisons of results with other types of data.

- **Common-size analysis**

The structure of assets and their magnitude are continuously changing while company functions. To obtain general idea of qualitative changes in the structure of sources, in the structure of funds, and in the dynamics of these changes, it is necessary to use horizontal and vertical analysis.

With the help of vertical analysis, you can consider the structure of the resources of the organization and their sources. This analysis makes it possible to maintain relative estimates and conduct economic comparisons of performance indicators of organizations which are using different amount of resources. Also it gives the opportunity to smooth out the influence of inflationary processes that distort absolute indicators of financial statements.

Horizontal analysis consists of the construction of one or several analytical tables, in which absolute indicators appear in the compartment with relative rates of decline or growth. Basically there are used the basic rates of growth for the adjacent periods, which gives the possibility of analyzing the changes in individual indicators and adding up the forecast of their values.

Vertical and horizontal analyzes complete each other well. That means that tables are constructed to show the real dynamic of indicators and to characterize the structure of the accounting reporting organization.

- **Ratio analysis**

The second and most popular way of conducting financial analysis is ratio analysis, which expresses relationship between items in the financial statements. Ratio analysis attempts to produce financial indicators that demonstrate the strengths and weakness of the organization and are significant for making decisions.

Several types of ratio analysis help analysts to make decisions, such as:

- liquidity ratio,
- leverage ratio,
- profitability ratio,
- ratios used for investors (earnings ratio, dividend payout, etc.),
- **financial statement variation by type of industry.**

Elements of financial statements vary depending on a type of industry. For instance, a service companies have low inventory or non-existent, investment in property and equipment is also low because services provided cannot be typically stored; manufacturing firms, on the contrary, have large inventories of raw materials, work in process and finished goods together with material investment in property, plant, and equipment.

- **Review of descriptive material**

The annual report also provides descriptive material which might include the role of research and development in producing future sales, present data on capital expansion, discuss employee relations, and help explain the dividend policy of the company.

- **Comparisons of results with other types of data**

Only in comparison data and figures can make sense.

3.5 Ratio analysis

The aim of the thesis is to analyze ŠKODA AUTO a.s., that is why I will consider benchmarks of the automotive industry.

3.5.1 Liquidity ratio

Liquidity is the ability of assets to be quickly sold by price, which is close to the market price. The level of liquidity is determined by the duration of the period during which this sale can be affected. The faster you can sell assets, the higher their liquidity.

When we talk about the liquidity of an enterprise, we have in mind the availability of the organization of circulating assets in such quantity to extinguish short-term obligations.

In the analysis of liquidity, the amounts indicated in the accounting balance sheet assets are

grouped according to the degree of their liquidity and located in the order of its decrease, with obligations on its liabilities, grouped in terms of their maturity and located in the order of increasing these terms.

At the same time, the degree of liquidity of assets is understood as the rate of their transformation from another form into a monetary one. The less time required for this, to become certain asset to a monetary form, the higher its liquidity. The higher the liquidity ratios are the better.

“Current assets are in the form of cash, will be realized in cash, or conserve the use of cash within the operating cycle of a business or one year, whichever is longer. The operating cycle for a company is the time period between the acquisition of goods and the final cash realization resulting from sales and subsequent collections.”⁶

Company’s liquidity can be identified by several methods:

Working Capital

Working capital is the measure of company’s short-term financial health. Calculated as:

$$\text{Working capital} = \text{Current assets} - \text{Current liabilities}^7$$

(3)

Current ratio

Current ratio shows how likely current liabilities are covered by current assets. The main rule is that current assets should be double than current liabilities. Nowadays the amount of current ratio is hardly reaches 2, 00, which means the efficient usage of inventory/receivables.

⁶ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013),223-224

⁷ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 243

“In general, the shorter the operating cycle, the lower the current ratio. The longer is the operating cycle, the higher is the current ratio.”⁸

Current ratio is computed by follow:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}^9$$

(4)

Quick ratio

Quick ratio, also known as acid-test ratio, used to show company's ability to meet its short-term obligations with its most liquid assets. The amount of the ratio should be around 1, the current average for the quick ratio in automotive industry is 0, 35¹⁰

Calculated as:

$$\text{Quick ratio} = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}^{11}$$

(5)

Cash ratio

Cash ratio is used to measure immediate liquidity of the company. Calculated as:

$$\text{Cash Ratio} = \frac{\text{Cash Equivalents} + \text{Marketable Securities}}{\text{Current Liabilities}}^{12}$$

(6)

⁸ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 243

⁹ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 243

¹⁰ Accessed January, 2017

https://csimarket.com/Industry/industry_Financial_Strength_Ratios.php?ind=404

¹¹ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 244

¹² Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 246

Analysts may also compute cash coverage ratio to determine the amount of cash available to pay for a borrower's interest expense and can be calculated as:

$$\text{Cash coverage ratio} = \frac{\text{EBIT} + \text{Non-cash expenses}}{\text{Interest expense}}^{13}$$

(7)

where *EBIT* stands for Earnings Before Interest and Taxes.

3.5.2 Leverage ratio

Leverage ratio is also known as debt ratio. The ratio of total debt to equity, measures the percentage of funds provided by creditors. Usually, when calculating this ratio, the total amount of liabilities is considered, this includes both short-term liabilities and long-term liabilities. Sometimes only the amount of long-term liabilities is used.

This ratio can be identified by the balance sheet and by the income statement.

By the balance sheet

“The debt ratio indicates the percentage of assets financed by creditors, and it helps to determine how well creditors are protected in case of insolvency. If creditors are not well protected, the company is not in a position to issue additional long-term debt. From the perspective of long-term debt-paying ability, the lower this ratio, the better the company's position.”¹⁴

Can be computed as:

$$\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}^{15}$$

(8)

¹³ Accounting Tools 2015. *Cash Coverage Ratio*. Accessed August 19, 2017
<http://www.accountingtools.com/cash-coverage-ratio>

¹⁴ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 282

¹⁵ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 282

Assets can be financed mostly through debt or equity. It depends on the amount of the ratio. High ratio means that a company is more dependent on leverage.

$$\text{Debt/Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Shareholders' Equity}}^{16}$$

(9)

Debt/equity ratio, is also known as financial leverage, compares a company's total liabilities to its total shareholders' equity. The lower the amount shows that company is using less leverage.

Debt/equity ratio can vary in different industries. The ratio that is ideal in one industry can be troublesome for another. In automotive industry the amount of the debt/equity ratio equals to 100%.

3.5.3 Profitability ratio

Profitability is a relative measure of economic efficiency. Profitability comprehensively shows not only the degree of effectiveness of the use of material, labor and financial resources, but also the use of natural resources. Profitability ratio gives us the view of how effectively the company is being managed and shows how likely the company can generate the profit.

Gross profit margin shows the relationship between gross profit and net sales and it shows fundamental profitability of a firm. It measures the profitability of the company. The higher the profit margin, the more efficient the firm is. In automotive industry, the benchmark for this ratio is 17, 43%. This ratio is used in cost control and can be computed as follows:

$$\text{Gross Profit Margin} = \frac{\text{Gross Profit}}{\text{Net Sales}}^{17}$$

(10)

Net profit margin is an amount of revenue left after all expenses have been paid. It shows the amount of profit that company can get of the sales. The formula is:

¹⁶ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 286

¹⁷ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 333

$$\text{Net Profit Margin} = \frac{\text{Net Income Before Noncontrolling Interest, Equity Income and Nonrecurring Items}}{\text{Net Sales}}^{18}$$

(11)

The high amount of net profit margin indicates that company's pricing have done correctly and they have good cost control. The amounts can vary, that is why they should be compared within the same industry. In automotive industry, the benchmark for this ratio is 2, 15 %.

Return on assets is a financial indicator reflecting the efficiency of using the company's assets to generate revenue. This indicator characterizes the profit received by the enterprise from each currency spent for the formation of assets. The value of this indicator makes sense to compare only between enterprises of one industry. The benchmark for this ratio in the automotive industry is 4, 10%.

$$\text{Return on Assets} = \frac{\text{Net Income Before Noncontrolling Interest and Nonrecurring Items}}{\text{Average Total Assets}}^{19}$$

(12)

Return on equity is a financial coefficient that characterizes the efficiency of the use of equity capital. Indicates the return on invested equity. Maximization of this indicator is an important task that must be performed by the managers of the enterprise. The low ratio can indicate of bad management performance or wrong strategy. The benchmark for the automotive industry is 12, 93%.

$$\text{Return on Equity} = \frac{\text{Net Income before Nonrecurring Items} - \text{Dividends on Redeemable Preferred Stock}}{\text{Average Total Equity}}^{20}$$

(13)

Return on sales shows the share of profit attributable to each currency earned by the company. "The concept is useful for determining the ability of management to efficiently generate a profit from given level of sales. An increasing return indicates an improvement in operating efficiency, while a recurring

¹⁸ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 324

¹⁹ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 325

²⁰ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 330

decline is a strong indicator of impending financial distress.”²¹ The benchmark for this ratio in automotive industry is 7,31%. Can be computed as:

$$\text{Return on Sales} = \frac{\text{Earning before interest and taxes}}{\text{Net Sales}}^{22}$$

(14)

Return on capital employed is an indicator describing the efficiency and profitability of investments in which entrepreneurial capital is involved. The formula is:

$$\text{Return on Capital Employed} = \frac{\text{Earnings before interest and tax}}{\text{Capital Employed}}^{23}$$

(15)

A higher ROCE value means more efficient use of the capital. The ROCE should be higher than the cost of the fixed capital of a joint-stock company, otherwise it means that the company is using its capital inefficiently and does not generate shareholder value.

3.5.4 Activity ratios

Activity ratios are also known as turnover ratios. This group is often called efficiency coefficients, as they measure the efficiency of using the assets of an enterprise.

The first ratio is *asset turnover*, which indicates of the intensity of the organization's use of available assets. This indicator is used along with other indicators of turnover, such as the turnover of accounts receivable, the turnover of accounts payable, stock turnover, for the analysis of the effectiveness of property management and the firm's obligations.

The benchmark for this ratio in the automotive industry is 0,93.

²¹ Accounting Tools 2017. *Return on sales*. Accessed November 28, 2017
<https://www.accountingtools.com/articles/return-on-sales.html>

²² Accounting Tools 2017. *Return on sales*. Accessed November 28, 2017
<https://www.accountingtools.com/articles/return-on-sales.html>

²³ Investopedia, 2003. s.v*Return on capital employed*. Accessed November, 2017.
<https://www.investopedia.com/terms/r/roce.asp>

The formula is:

$$\text{Asset Turnover} = \frac{\text{Net Sales}}{\text{Average Total Assets}}^{24}$$

(16)

The second ratio is *fixed asset turnover*. This is an economic indicator characterizing the level of efficiency of the use of fixed assets of the enterprise, industry. This ratio is used to characterize the dynamics of the efficiency of the use of fixed assets of the enterprise, as well as for a comparative assessment of the efficiency of the use of fixed assets in enterprises of one industry.

$$\text{Fixed Assets Turnover} = \frac{\text{Net Sales}}{\text{Net Property, Plant and Equipment}}^{25}$$

(17)

The third ratio is *accounts receivable turnover*. This indicator measures the speed of repayment of the organization's receivables, how quickly the organization receives payment for the goods sold from its customers. The accounts receivable turnover ratio shows how many times in a period (year) the organization received payment from customers in the amount of the average balance of unpaid debt.

$$\text{Accounts Receivable Turnover} = \frac{\text{Net Sales}}{\text{Average Gross Receivables}}^{26}$$

(18)

The next one is *accounts receivable turnover in days*. It shows average number of the days needed for customer's payments. The benchmark in automotive industry for both accounts receivable and accounts receivable turnover in days is 4,42 with a period of 34 days.

²⁴ Investopedia, 2003. s.v. *Asset turnover ratio* Accessed December, 2017.
<https://www.investopedia.com/terms/a/assetturnover.asp>

²⁵ Investopedia, 2003. s.v. *Fixed-assets turnover ratio* Accessed December, 2017.
<https://www.investopedia.com/terms/f/fixe-asset-turnover.asp>

²⁶ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 230

$$\text{Accounts Receivable Turnover in Days} = \frac{\text{Average Gross Receivables}}{\text{Net Sales}/365}^{27}$$

(19)

Inventory turnover is the ratio of the cost price of products sold during the reporting period to the average value of reserves in this period. This coefficient shows how many times the average stock of the enterprise is sold over in a certain period of time. The benchmark in automotive industry for inventory turnover ratio is 10,59.

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}^{28}$$

(20)

3.6 Forecasting financial failure

The fact is that entrepreneurship is an activity connected with investment of means and extraction of incomes. Funds are invested today, and revenues will be extracted tomorrow. To assess the possible amount of income and investment effectiveness, it is necessary to determine not only the sequence of actions and calculate their expected result, but also the future state of the enterprise and the external environment, including the conditions for marketing products or the behavior of competitors. Forecasting is determining the future state of the enterprise and its environment on the basis of the prevailing trends.

In this thesis i will describe two approaches to predict financial failure: univariate model and multivariate (Altman Z-score model).

²⁷ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 231

²⁸ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 239

3.6.1 Univariate model

This method was created by William Beaver. This accounting researcher and educator have identified main indicators for forecasting financial failure:

- 1) $\frac{Cash\ Flow}{Total\ Debt}$
- 2) $ROA = \frac{Net\ Income}{Total\ Assets}$
- 3) $Debt\ Ratio = \frac{Total\ Debt}{Total\ Assets}$

(21)

“The Beaver study also computed the mean values of 13 financial statement items for each year before failure. Several important relationships were indicated among the liquid asset items:

- failed firms have less cash but more accounts receivable,
- when cash and receivables are added together, as they are in quick assets and current assets, the difference between failed and successful firms is obscured because the cash and receivables differences are working in opposite directions,
- failed firms tend to have less inventory”.²⁹

3.6.2 Altman Z-score model

Altman Z-score model is another variation of predicting financial failure. Was developed by Edward I. Altman. This is combination of five financial ratios weighed by coefficients.

The formula is:

$$Z - score = 1,2 x1 + 1,4 x2 + 3,3 x3 + 0,6 x4 + 1,0 x5,$$

(22)

where $x1$ is the Working Capital/ Total Assets.

This amount measures of the net liquid assets relative to the total capitalization.

$x2$ is Retained Earnings/ Total Assets

²⁹ Charles H. Gibson *Financial Statement Analysis, 13 edition* (Canada: Cengage Learning, 2013), 490

This amount measures cumulative profitability over time.

x3 is Earnings before Interest and Taxes/ Total Assets

This amount measures the productivity of company's assets.

x4 is Market Value of Equity/Book Value of Total Debt

This amount measures how much the company's assets can change in value before the liabilities exceed.

x5 is Sales/ Total Assets

This amount measures the sales generating ability of the firm's asset.

Interpretation of Z-score

There are three Zones of discrimination:

Z-score is more than 2.99 – the company's position is defined as safe

Z-score is between 1.81 and 2.99 – “grey zone” - the company has an opportunity to become bankrupt in next two years

Z-score is less than 1.81 – “distress zone”- huge probability for the distress in the enterprise

4. About the company

ŠKODA AUTO a.s. is a Czech automotive company that produces cars under the Škoda brand. The headquarters of the company is located in the city of Mlada Boleslav (Czech Republic). Is one of the oldest car producers in the world.

4.1 History

The company begins their history in the year 1895. Two young men Václav Laurin and Václav Klement decided to produce their own bicycles, called Slavia. After four years of producing, they switch their attention to the motorcycles and success was reinforced by the international victories. After Laurin&Klement Co. Makes a big decision - to produce cars.

The first car was produced in 1905 and its name was Voiturette A. It was a big breakthrough into the world's automotive market. After a few years the company L&K became a joint stock company. After 1914 company manufactures military vehicles.

On the 27th of June 1925 company Laurin&Klement joined the ŠKODA Plzeň engineering company and achieved great success in the ŠKODA Popular model. At that time the headquarters and construction of the company was relocated to Mladá Boleslav.

On the 1st of January 1930 in Prague was registered a separate ASAP with its own capital of CZK 20 million. That made the company organizationally and properly independent of the group, even though it remained in its full ownership.

For more than 25 years Škoda company has been part of the VOLKSWAGEN group. During this time lots of things have changed, such as deliveries and the list of the products. Nowadays the main business activities of the company are the development, production and sales of ŠKODA cars, components, genuine parts and accessories, and also providing the service.

The sole shareholder of ŠKODA AUTO a.s. is VOLKSWAGEN FINANCE LUXEMBURG S.A., established in Luxemburg. VOLKSWAGEN LUXEMBURG S.A. is a subsidiary of VOLKSWAGEN AG.

Škoda Auto nowadays controls production in Czech Republic.

The cars of the company also can be produced in China, Russia, India, Slovakia, Ukraine and Kazakhstan. For the next few years there is a growth plan of the company and international production will be a huge step in it. Also the production has been moved to another countries to avoid custom duties and to attain lower operating costs.³⁰

In the year 2010, CEO of the ŠKODA auto became Prof. Dr. h.c. Winfried Vahland, who set the long-term goal to increase annual deliveries to customers to over 1.5 million cars by the year 2018. This tactics is also called strategy of the growth.

4.2 Product portfolio

Nowadays ŠKODA auto represents next models:

- ŠKODA Citigo – the smallest car model was launched in 2011 and became popular due to comfortable design, economy and safety.
- ŠKODA Fabia – urban small car model, which has been the bestseller for a long time due to economy of fuel consumption, fair price and reliability.
- ŠKODA Rapid – the main point in the growth strategy. The model has been released in 2012.
- ŠKODA Octavia – the most successful model in ŠKODA's history. Was launched in 1996 and still surprise by the functionality, design and large amount of free space inside.
- ŠKODA Kodiaq – medium-sized crossover released in 2016. According to Top gear magazine the best family car of the year 2016.
- ŠKODA Karoq – the crossover has been presented on May, 2017. A younger brother of ŠKODA Kodiaq.
- ŠKODA Superb – the flagship model of quality and reasonable price for it's class.
- ŠKODA vision x – concept car of family crossover was represented on the 6th of March 2017 in Geneva.

³⁰ ŠKODA AUTO, *Annual Reports*. Accessed January, 2017
<http://www.skoda-auto.com/company/about/skoda-annual-reports>

4.3 Industry analysis

This part introduces what is global automotive industry in general, describes the main challenges for car manufactures and forecasts the development and trends in it. While analyzing I will determine the key factors affecting global car market and will attempt to understand what to do to reduce costs and make production more efficient. Detailed industry analysis will help to understand the position of the company in the market and to react quickly to changes in the business environment, to forecast future trends and customer's needs and to be aware of competitors. Car market is also very sensitive to macroeconomic conditions.

Nowadays automotive industry tries to offer more comfort models, innovative design as well as minimize fuel consumption and take care of nature, by developing environmental-friendly cars.

That means that huge amounts of money are given to make research, to develop, to improve and develop new technologies.

The ŠKODA AUTO a.s. is a part of VOLKSWAGEN group, so it is not listed separately. According to the years 2015-2016 we can find VOLKSWAGEN group based on the second place among the biggest automobile manufacturers in the world.

Table 1. World ranking of manufactures, 2015-2016 (World motor vehicle production)

RAN K	GROUP	YEAR 2015 SUM	YEAR 2016 SUM
1	TOYOTA	10,083,831	10,213,486
2	VOLKSWAGEN	9,872,424	10,126,281
3	HYUNDAI	7,988,479	7,889,538
4	G.M.	7,484,452	7,793,066
5	FORD	6,393,305	6,429,485
6	NISSAN	5,170,074	5,556,241
7	HONDA	4,543,838	4,999,266
8	FIAT	4,865,233	4,681,457

9	RENAULT	3,032,652	3,373,278
10	PSA	2,982,035	3,152,787

Source: OICA, <http://www.oica.net/wp-content/uploads/World-Ranking-of-Manufacturers.pdf>

Here are listed such companies as Toyota, Hyundai, General Motors, Ford, Nissan, Honda, Fiat, Renault, PSA which is Peugeot-Citroen. As we can see not every company produced more in the year 2016, but VOLKSWAGEN group is one of those, who did.

Moreover, there is a statistics of key figures on automotive industry in the EU. As we can see from the table below in the year 2016 in the EU have been produced 19,2 millions cars and 12,6 millions people, which is 5,7% of EU employed population are working in automotive industry.

Table 2. Key figures on automotive industry in the EU, 2015-2016

Key figure	Year	Data	Notes
Production (total motor vehicles)	2016	19,2 mil. units	20% of global MV Production
Production (total passengers car)	2016	16,5 mil. units	21% of global MV Production
New registration (total motor vehicles)	2016	17,0 mil. units	18% of global MV Registrations
New registration (total passengers car)	2016	14,6 mil. units	19% of global MV Registrations
Employment - manufacture	2015	2,5 mil. people	8,2% of EU manufacturing
Employment -total, inc. indirect	2015	12,6 mil. people	5,7% of EU employed population
Exports (in EUR)	2016	135,4 bn EUR	
Imports (in EUR)	2016	45,7 bn EUR	

Motor vehicles in use – total	2015	294,2 mil. units	
Motor vehicles in use – passenger cars	2015	256,1 mil. units	
Motorisation rate (cars)	2015	573 units per 1000 inhabitants	
Fiscal income from motor vehicles (EU14)	2016	395,7 bn EUR	

Source: OICA, <http://www.acea.be/statistics/tag/category/key-figures>

Companies are now concentrating on new vehicle technologies and alternative propulsion systems in order to provide sustainable growth. That's why such producers as BMW, Ford, Toyota, Honda, General Motors, Mercedes-Benz, Nissan, Tesla are setting up research offices in Silicon Valley.

4.4 Czech automotive industry

The Czech automotive industry represents one of the most developed automotive markets, which regularly produces more than a million vehicles

The automotive industry plays a key role in the Czech economy, accounting for 7.4% of GDP, 24% of manufacturing production and 23% of exports (mainly to EU countries).³¹ In Czech Republic located such automotive production companies as ŠKODA AUTO a.s., Toyota Peugeot Citroen Automobile and Hyundai. For the first half of the year 2016 Czech republic have produced 719 495 cars. That forms an increase of 11, 19%. In comparison the number of cars produced in the previous year was equal to 1.3 million cars. The predictions of the year 2016 were very positive, not only due to high level of production, but also because of the purchasing power of population.

31 Atradius, *Market Monitor Automotive Czech Republic*, Accessed October 27, 2016
<https://atradius.com.ru/reports/market-monitor-automotive-czech-republic-2016.html>

Export is the main growth factor. In comparison with the year 2010 the amount of export sales increased by 110%. The domestic sales raised by 29%. The short term performance stayed positive, while the value added was growing by 5, 6% in 2016 and 4.1% in 2017.

Nowadays the only problem which can slow the growth of the Czech automotive industry is shortage of workers. In the year 2016 Czech industry required at least 52 000 of new employees. This is huge amount, considering the fact that unemployment in Czech Republic is at very low level for the last years.

According to Moody's, S & P or Fitch's ratings Czech Republic is in the groups A1, AA- and A+ relatively.³² Rating is a standard international instrument for assessing the creditworthiness of countries to assess their credibility. Assuming the results we can see that Czech Republic as a part of A group has the highest quality of the bonds.

4.5 SWOT analysis

SWOT analysis is quite simple and popular method to access the consequences of the decision you make. In our case SWOT analysis is about defining strengths and weaknesses of an enterprise, as well as determining the opportunities and threats from external environmental.

SWOT consists of 4 key elements:

S- Strength (advantages of the company over competitors)

W- Weakness (the weak spot of the company that needs improvements)

O- Opportunity (the environmental factors that can create advantages on the market)

T – Threats (factors that can spoil the company's position on the market)

³² Rating - S&P, Moody's a Fitch, Accessed March 8, 2018
<https://www.fxstreet.cz/rating-sp-moodys-a-fitch.html>

Table 3. SWOT analysis of ŠKODA AUTO a.s.

<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none"> • Skoda manufactured cars that their customers could enjoy, which is different from simply maximizing sales. • Skoda branded them as a quality product that satisfies its customers. • In customer satisfaction survey they asks owners what they feel about cars to those who have owned for at least six months • Skoda's Octavia model has also won the 2008 <i>Auto Express</i> Driver Power 'Best Car'. • Brand recognition – excellent advertising 	<ul style="list-style-type: none"> • Extremely stiff competition in the segment means limited market share growth for the company - Skoda has only 1.7% market share. • Skoda still lacks a strong appeal. • The cars had an image of poor vehicle quality, design, assembly, and materials. • High maintenance cost.
<i>Opportunity</i>	<i>Threats</i>
<ul style="list-style-type: none"> • Customers loved their cars more than owners of competitor brands, such as Renault or Ford. • It must focuses on its existing strengths and can provide cars focused on the customer experience. • It can enable to differentiate the Skoda brand to make it stand out from 	<ul style="list-style-type: none"> • The unstoppable wave of development in sphere of technology, which enables competitors to design and produce cheaper cars of future. A competitor launching cheaper products. This made Skoda to lose its market share again. • Skoda needs a strong product range to

the competition.	compete in India and also globally
<ul style="list-style-type: none"> Continuously extending market 	

Processed based on: Source: Hitesh Bhasin, *SWOT Skoda*, accessed January 13, 2018

<https://www.marketing91.com/swot-skoda/>

5. Financial analysis

In this part I am going to make practical implementation of financial analysis. I will use different methods described in the theoretical part of the work. To make a research and describe actual financial health of the company I am going to analyze ratios of the last five years (2012-2016).

All data used for computations is derived from annual report of ŠKODA AUTO a.s., which can be found on the official website. Annual report comprises income statement, balance sheet, cash flow statement and statement of changes in equity. All the figures used for the calculations are located in appendix.

5.1 Horizontal and vertical analysis

This part will be related to horizontal and vertical analysis of the balance sheet and income statement for the years 2012, 2013, 2014, 2015, 2016. By observing changes in the statements we are able to determine past and actual trends of the ŠKODA AUTO a.s.

Table 4. Horizontal analysis of the Balance sheet (selected items in CZK Mio.)

Items	2013/		2014/		2015/		2016/	
	2012	2012	2013	2013	2014	2014	2015	2015
	absolute	%	absolute	%	absolute	%	absolute	%
Total noncurrent assets	6224	7,45%	17216	19,58%	2515	2,39%	-2816	-2,62%

Total current assets	7374	9,64%	7652	11,94%	23231	32,39%	28381	29,89%
Total assets	13598	8,50%	24868	38,81%	25746	14,56%	25565	12,61%
Equity	2453	2,70%	9685	10,72%	17481	17,48%	20098	17,10%
Non-current liabilities	-1979	- 10,32%	5813	46,16%	534	2,90%	-507	-2,68%
Current liabilities	13124	26,30%	9370	19,09%	7731	13,22%	5974	9,03%
Total equity and liabilities	13598	8,50%	24868	16,37%	25746	14,56%	25565	12,62%

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>

The table 4 of horizontal analysis of the balance sheet demonstrates that current assets increased in 2015 by 32, 39% and decreased by 29, 89% in 2016. The same situation is with the amounts of shareholder's equity: 17, 48% in 2015 and 17, 10% in 2016. The year 2015 was very successful for the company and, as we can see, there is not a big difference between these two years. This shows us company's strong financial position. But we must admit that current liabilities also increased by 13, 22% in 2015 and 9, 03% in 2016 respectively. Should be mentioned that the amounts of current assets and current liabilities is related to each other and we can see mostly the same proportion of decrease, which tells us that non-current assets should be financed by non-current liabilities and shareholders' equity, while current assets will be financed by current liabilities.

Table 5. Horizontal analysis of the income statement (selected items)

Items	2013/ 2012		2014/ 2013		2015/ 2014		2016/ 2015	
	absolute	%	absolute	%	absolute	%	absolute	%
Sales	5851	2,23%	55694	22,86%	15579	5,20%	3309	10,51%
Gross profit	-857	-2,10%	10288	30,18%	2339	5,27%	6042	12,93%
Operating profit	-4378	- 24,43%	9061	72,27%	13556	62,77%	-4262	- 12,12%
Profit before income tax	-3994	- 22,27%	8399	64,86%	12889	60,37%	-3389	-9,90%
Profit for the year	-3522	- 22,94%	7035	61,79%	12395	67,29%	-5653	- 18,34%

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>

From the table 5 of horizontal analysis of income statement we can see that sales was growing with a huge decrease 5, 20% in 2015.

„2015 was a successful year for ŠKODA brand with new record results. The results achieved in 2015 show the power of the ŠKODA brand and the high level of acceptance our cars have achieved. The largest model campaign in the company’s history is increasingly demonstrating its strength. In the last four years, we have updated our product range and expanded into new segments. With seven model series and over 40 model variants, we offer the most attractive

and widest ŠKODA range of all time.³³ says Bernhard Maier, Chairman of the Board of Management.

As for the vertical analysis of the balance sheet we can see from table 6 and graph 1 that there is a decrease in current assets by 40,56% in the year 2014. The table 7 and graph 2 shows the growth in equity till the year 2016. On the table 8 and graph 3 we can observe that the cost of sales represents the biggest part. Year by year the numbers are mostly the same, that means that position of gross profit is stable.

All in all, ŠKODA AUTO a.s. demonstrates stable financial position for the analyzed years.

Table 6. Vertical analysis of the balance sheet (assets) of ŠKODA AUTO a.s.

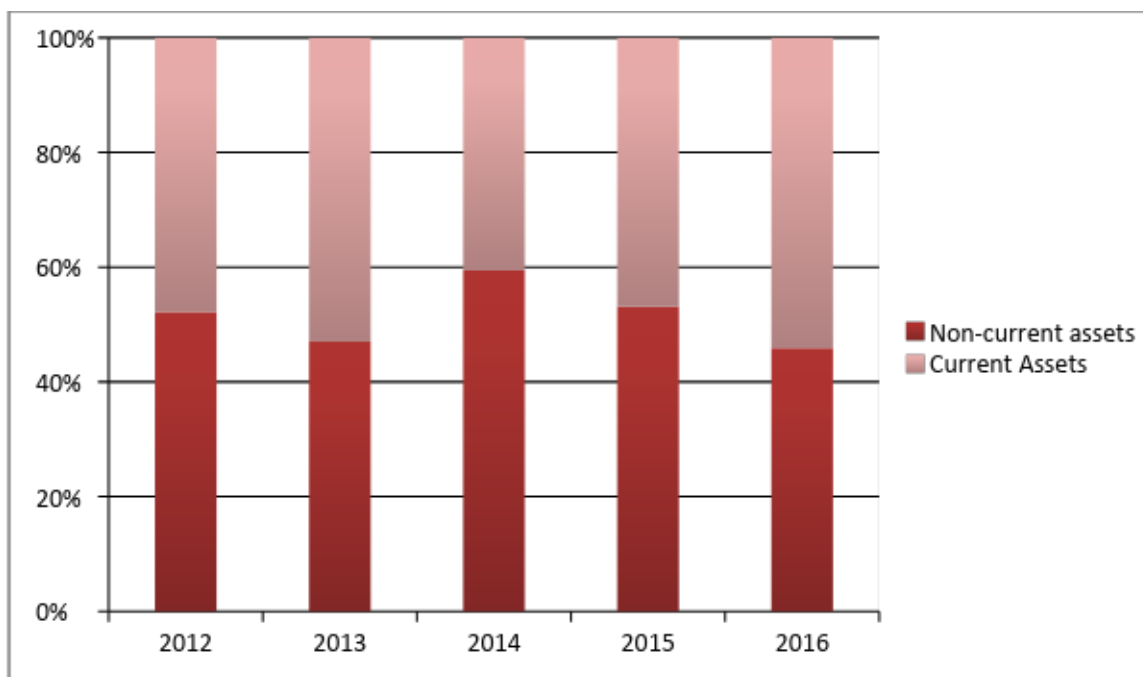
	2012	2013	2014	2015	2016
Current Assets	47,81%	48,31%	40,56%	46,87%	54,05%
Non-current assets	52,19%	51,69%	59,44%	53,13%	45,95%

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>

³³ ŠKODA AUTO, *Annual Report 205*. Accessed January, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>



Graph 1. Vertical analysis of the balance sheet (assets) of ŠKODA AUTO a.s.

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

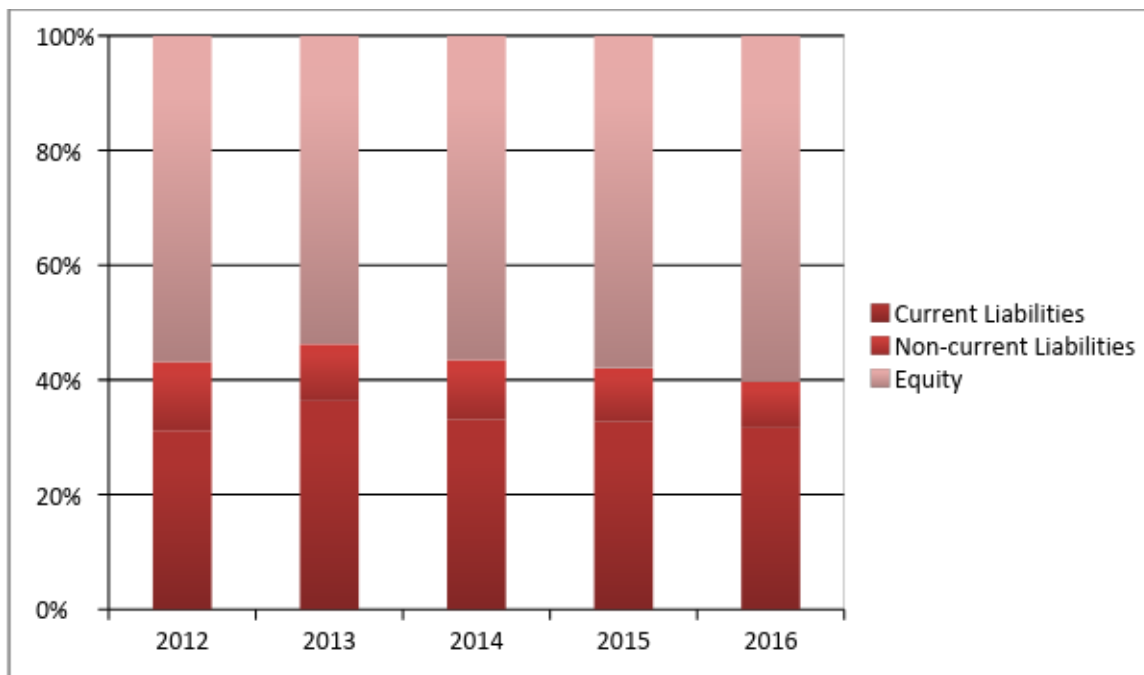
<http://www.skoda-auto.com/company/about/skoda-annual-reports>

Table 7. Vertical analysis of the balance sheet (equity and liabilities) of ŠKODA AUTO a.s.

	2012	2013	2014	2015	2016
Current liabilities	31,19%	36,31%	33,05%	32,67%	31,63%
Non-current liabilities	11,99%	9,91%	10,41%	9,35%	8,08%
Equity	56,82%	53,78%	56,54%	57,98%	60,29%

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>



Graph 2. Vertical analysis of the balance sheet (equity and liabilities) of ŠKODA AUTO a.s.

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>

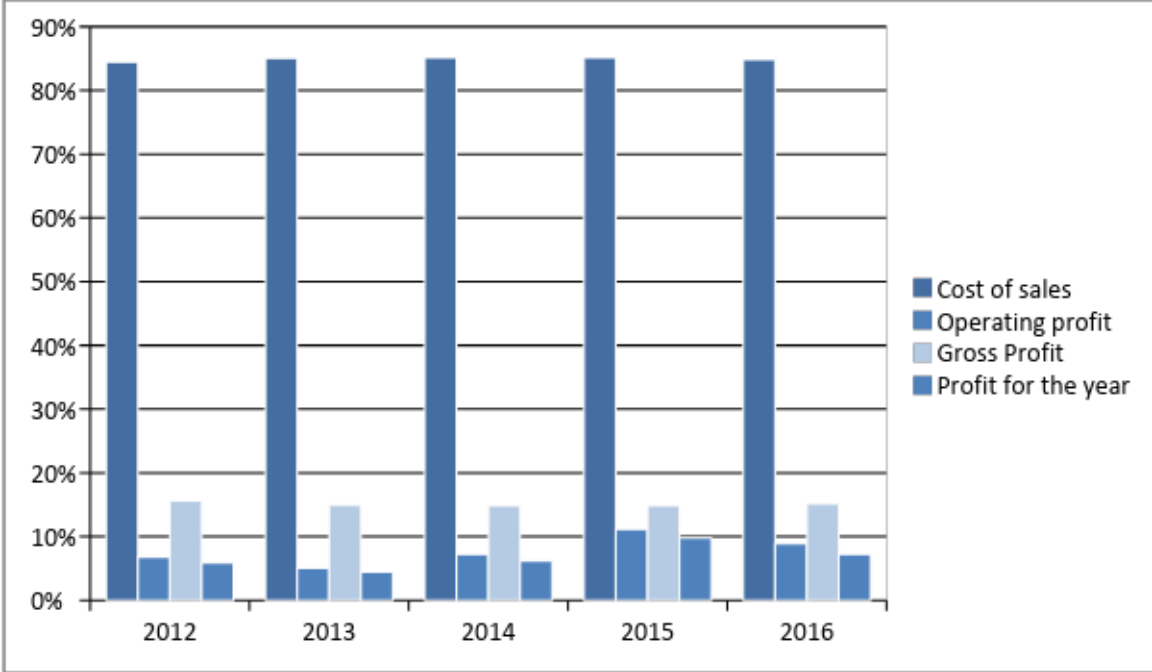
Table 8. Vertical analysis of income statement (selected items) of ŠKODA AUTO a.s.

	2012	2013	2014	2015	2016
Gross Profit	15,57%	14,91%	14,83%	14,83%	15,16%
Operating Profit	6,82%	5,04%	7,22%	11,16%	8,88%
Profit for the year	5,85%	4,41%	6,15%	9,79%	7,23%

Cost of sales	84,43%	85,09%	85,17%	85,17%	84,84%
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Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>



Graph 3. Vertical analysis of income statement of ŠKODA AUTO a.s.

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>

5.2 Ratio analysis

This part will be divided into few sections to analyze different financial indicators, which were represented in theoretical part.

5.2.1 Liquidity ratio

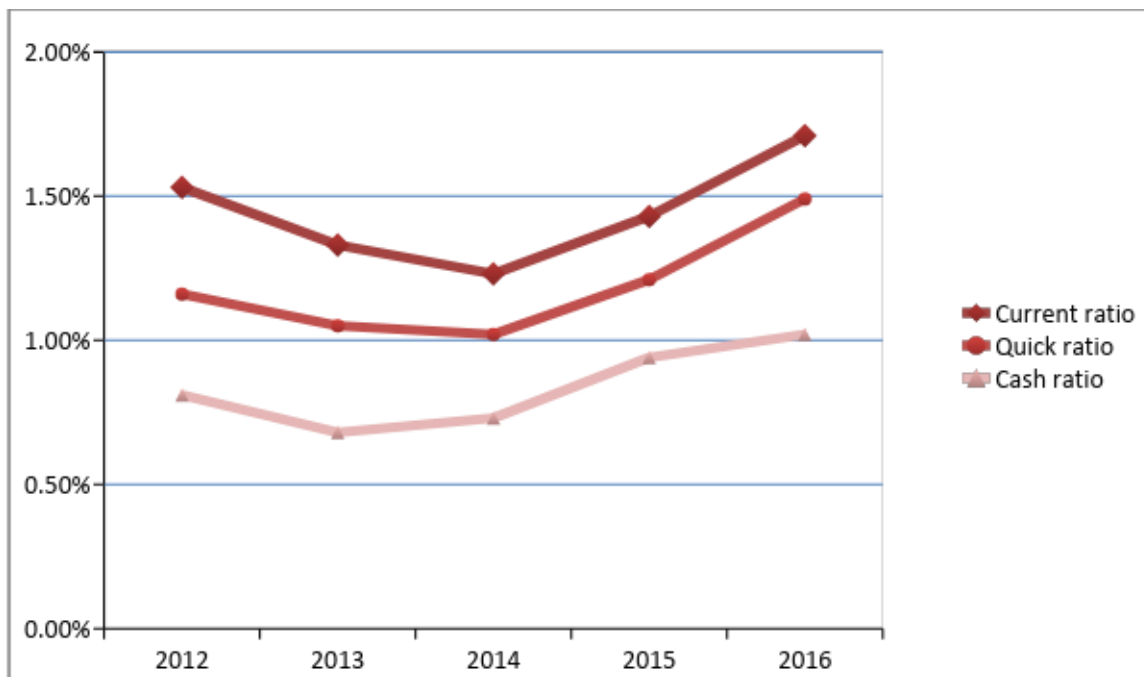
The liquidity ratio shows how likely the assets of the company can become cash.

Table 9. Liquidity ratios of ŠKODA AUTO a.s.

	2012	2013	2014	2015	2016
Current ratio	1,53%	1,33%	1,23%	1,43%	1,71%
Quick ratio	1,16%	1,05%	1,02%	1,21%	1,49%
Cash ratio	0,81%	0,68%	0,73%	0,94%	1,02%

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>



Graph 4. Liquidity ratios of ŠKODA AUTO a.s.

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>

To understand the meaning of these numbers, we have to know that if the amount of current ratio is less than 1, that means that the company has additional source to pay the short term obligations. If the current ratio is 1 that shows the situation when firm can cover her liabilities by the assets. The current ratio of 2 provides the ability to cover current liabilities twice. As we can see from the table 9 the highest amount 1, 71% is represented in the year 2016. The quick ratio and cash ratio have been appeared the best results at the same year. The lowest amounts achieved in the years 2013 and 2014. The reason is that company made big investments in its fixed assets to modernize and develop new products.

5.2.2 Leverage ratio

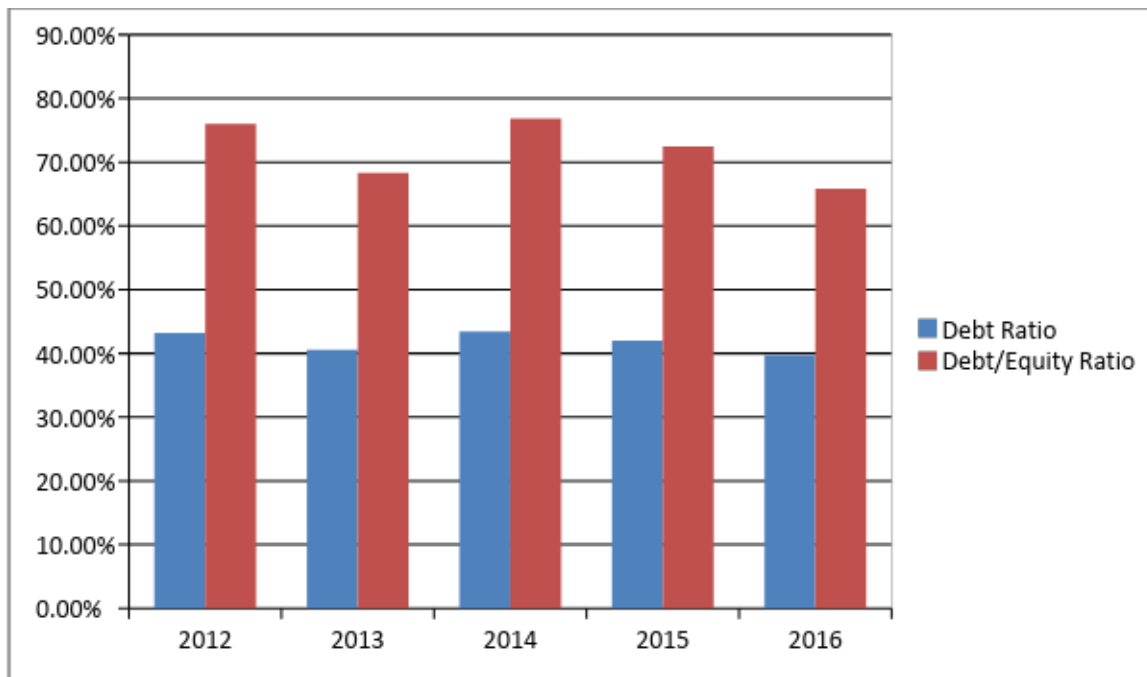
This ratio can be identified by the balance sheet and by the income statement. I have chosen to make analysis by the balance sheet.

Table 10. Leverage ratios of ŠKODA AUTO a.s.

	2012	2013	2014	2015	2016
Debt Ratio	43,18%	40,58%	43,46%	42,02%	39,71%
Debt/ Equity Ratio	75,99%	68,30%	76,87%	72,46%	65,85%

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>



Graph 5. Leverage ratios of ŠKODA AUTO a.s.

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports> 2017

From the table 10 and graph 5 you can easily see that the debt ratio almost stable, with the peak amount in the year 2014. Because the numbers are all less than 50%, we can affirm the company more likely use its assets, other words there is a strong ability of the enterprise to pay the short term obligations.

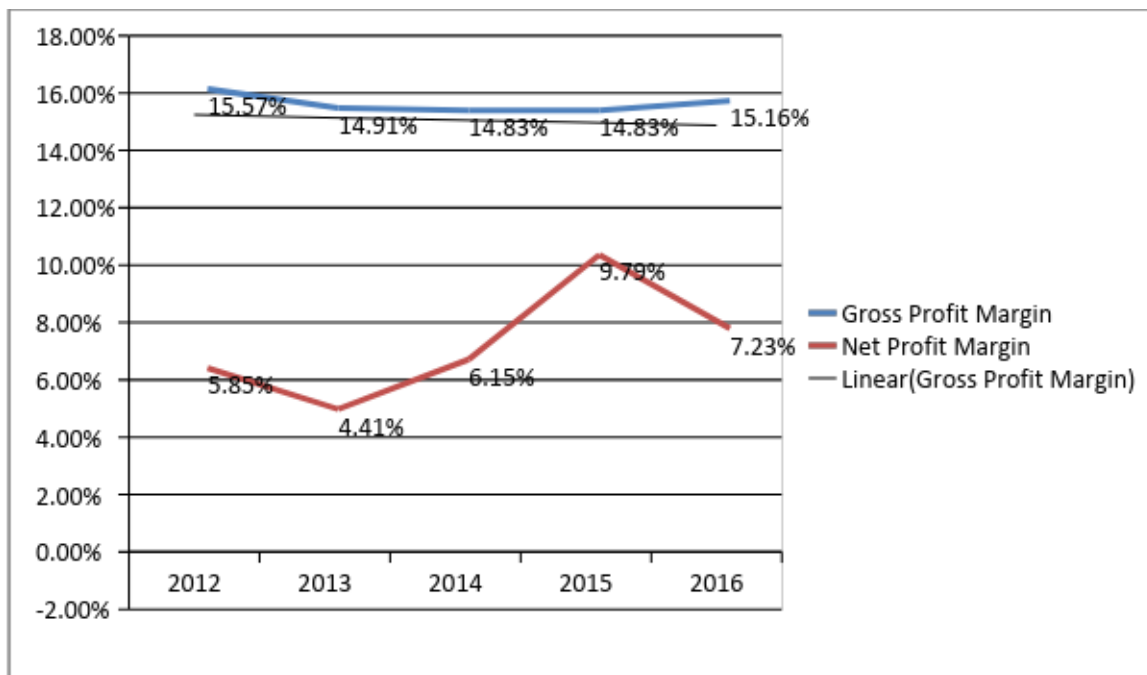
5.2.3 Profitability ratio

Table 11. Profitability ratios of ŠKODA AUTO a.s.

	2012	2013	2014	2015	2016
Gross Profit Margin	15,57%	14,91%	14,83%	14,83%	15,16%
Net Profit Margin	5,85%	4,41%	6,15%	9,79%	7,23%

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>



Graph 6. Profitability ratios of ŠKODA AUTO a.s.

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports 2017>

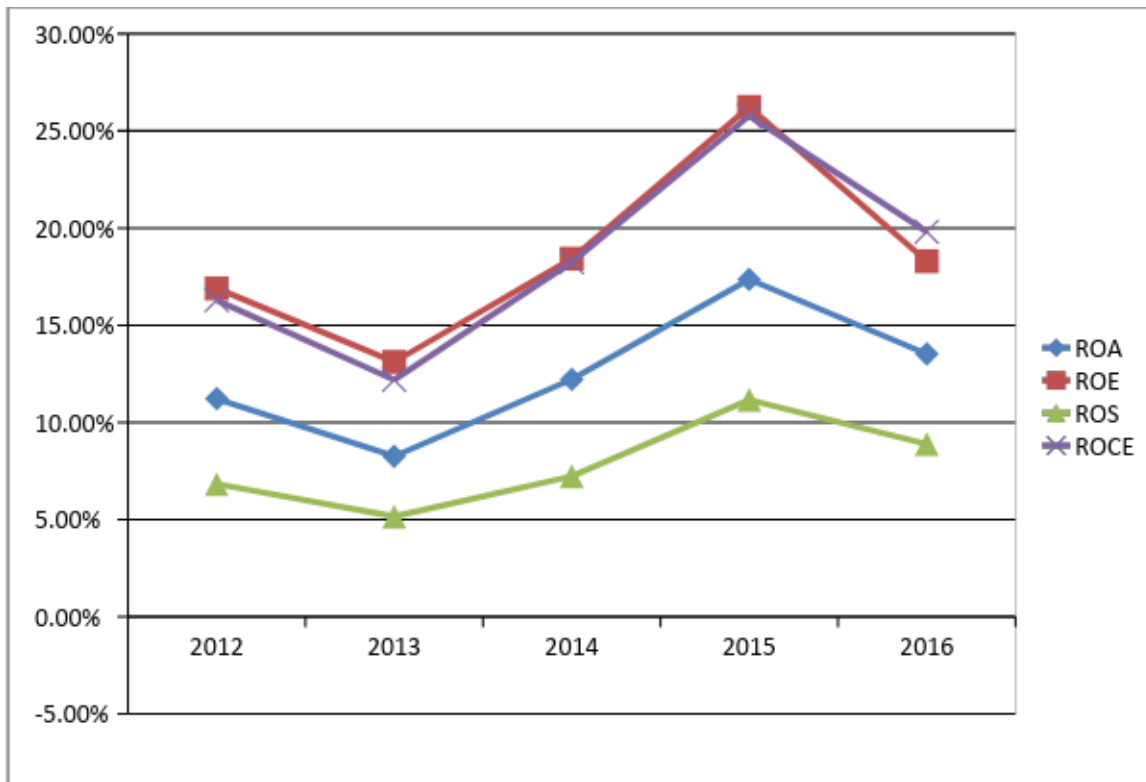
According to the table 9, we can assume that the highest amount of the gross profit margin 15, 57% has been reached in the year 2012 and the lowest 14, 83% in the years 2014-2015. Net profit margin is more unstable than gross profit margin. The biggest number 9, 79% is the result of the year 2015. As it was mentioned in the theoretical part of the thesis, the higher the profit margin, the more efficient the firm is. The benchmarks in the automotive industry are 17, 43%, but the amount for net profit margin is much less. That illustrates that the company controls their expenses.

Table 12. Profitability ratios of ŠKODA AUTO a.s.

	2012	2013	2014	2015	2016
ROA	11,21%	8,25%	12,21%	17,35%	13,52%
ROE	16,89%	13,11%	18,42%	26,23%	18,29%
ROS	6,82%	5,15%	7,22%	11,16%	8,88%
ROCE	16,28%	12,18%	18,24%	25,77%	19,80%

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>



Graph 7. Profitability ratios of ŠKODA AUTO a.s.

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports 2017>

Looking at the table 12, we can grasp that the year 2015 represents the best results of the whole financial indicators. At the same time the lowest indicators are all located in the column year 2013.

Return on asset shows the efficiency of the use of equity. While analyzing the changes in Return on asset we can assume that all the numbers are much higher than the benchmarks for the automotive industry. The return on equity also illustrates good sequence with the lowest amount of 13, 11% in the 2013 year and the highest 26, 23% in 2015. That shows how the management of the company can generate a profit from a given level of sales. As we can see on the graph 10 the position of the return on sales quite similar to return on capital employed.

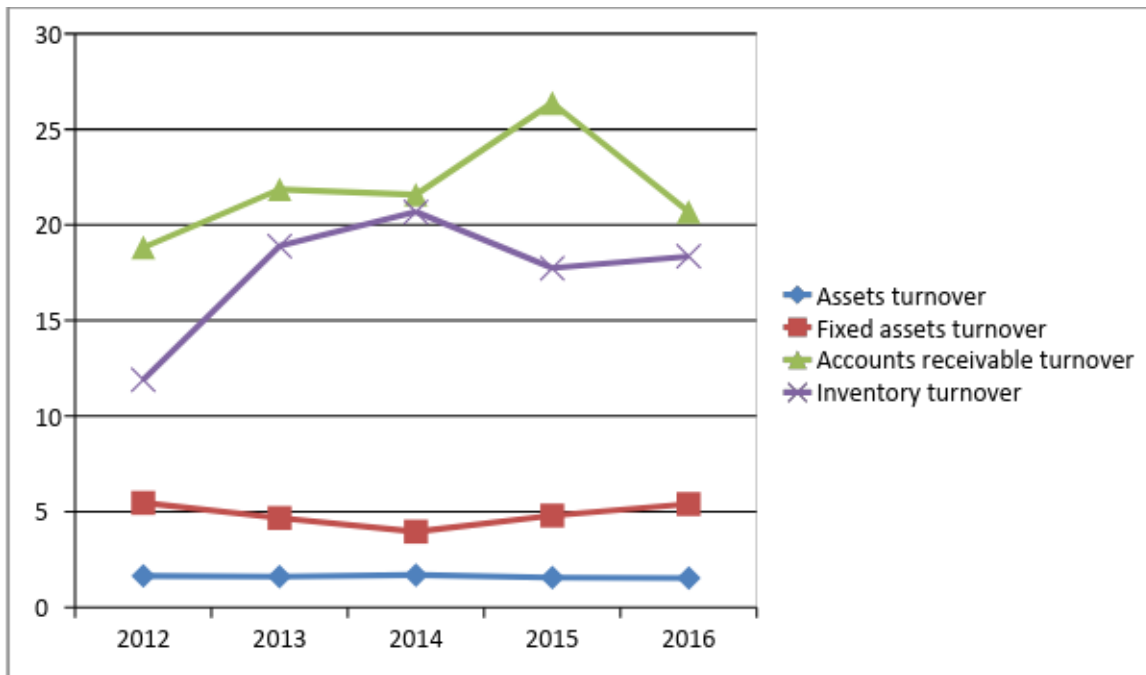
5.2.4 Activity ratios

Table 13. Activity ratios of ŠKODA AUTO a.s.

	2012	2013	2014	2015	2016
Asset Turnover	1,64	1,60	1,69	1,55	1,53
Fixed Assets Turnover	5,46	4,67	3,96	4,80	5,40
Accounts Receivable Turnover	18,82	21,86	21,58	26,38	20,68
Accounts Receivable Turnover in days	16,70	16,91	14,56	13,84	17,65
Inventory Turnover	11,91	18,90	20,68	17,74	18,35

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>



Graph 8. Activity ratios of ŠKODA AUTO a.s.

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>

Looking to the table 13 and exploring the graph 8 we see the illustration that at the first analyzed year the amount of the asset turnover equals to 1, 64, after it reaches the peak of 1, 69 in the year 2014 and was decreasing for the next two years. Still the numbers are much higher than the benchmarks, so we can assume that company effectively uses their assets.

The fixed assets turnover illustrates different situation, even if they are much related with assets turnover. The highest amount achieved 5, 46 in the year 2012, next year represents the lowest index, but year by year this indicator is still improving.

The account receivable turnover is almost stable with the huge increase 26, 38 in the year 2015. This indicator shows the speed of the organizations receivable skills. For the account receivable turnover in days should be mentioned that the higher amount 17, 65 has been appeared in the last year.

About inventory turnover we can see the big leap from 11, 91 to 18, 90 in the years 2012-2013 respectively. For the next three years the numbers are stable.

5.3 Forecasting financial failure

In this part i will use two approaches in case of defining the financial health of the company.

5.3.1 Univariate model

Table 14. Univariate model of forecasting financial failure of ŠKODA AUTO a.s.

	2012	2013	2014	2015	2016
Cash flow/ Total debt	58,58%	51,76%	55,78%	73,16%	80,86%
Net income/ Total assets	11,21%	8,25%	12,21%	17,35%	13,52%
Total debt/ Total assets	43,18%	40,58%	43,46%	42,02%	39,71%

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>

This method is a simple approach to determine the probability of financial distress. According to the table 14 we can affirm that the company's position is strong. Cash flow/Total debt is increasing and reaches the maximum 80, 86 % in the last of the analyzed years. In comparison with the year 2015 the amounts of return on assets and debt ratio are decreasing. This is the result of investments in modernization and developing of the production.

5.3.2 Multivariate model

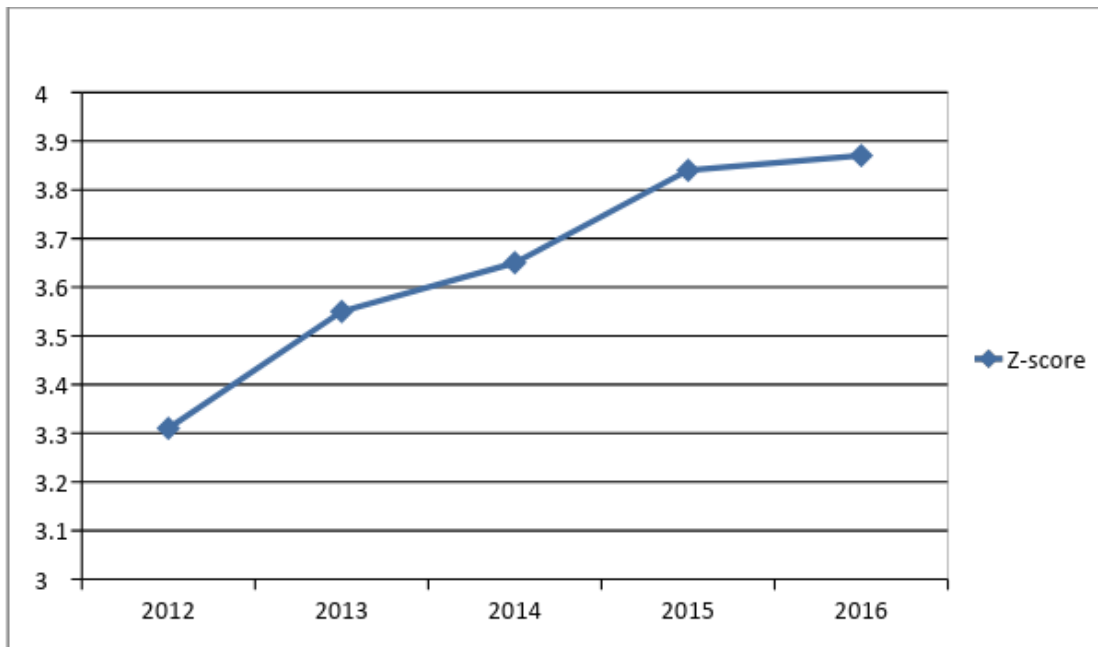
Table 15. Multivariate model of forecasting financial failure of ŠKODA AUTO a.s.

	2012	2013	2014	2015	2016
Working capital(mil CZK)	26589	14987	13269	28769	51176
Total assets (mil CZK)	159986	152001	176869	202615	228180
Working capital/ Total assets	0,17	0,10	0,08	0,14	0,22
Retained earnings (mil CZK)	72511	74162	86890	103963	113726
Retained earnings/ Total assets	0,45	0,49	0,49	0,51	0,50
EBIT (mil CZK)	17917	12537	21598	31154	30892
EBIT/ Total assets	0,11	0,08	0,12	0,15	0,14
Book value	90906	90316	100001	117482	137580

of equity (mil CZK)					
Total liabilities (mil CZK)	69080	61685	76868	85133	90600
Book value of equity/ Total liabilities sales (mil CZK)	1,32	1,46	1,30	1,52	1,52
Sales/ Total assets (mil CZK)	1,32	1,60	1,69	1,55	1,53
Z-score	3,31	3,55	3,65	3,84	3,87

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports>



Graph 9. Altman Z-score model of ŠKODA AUTO a.s.

Source: own calculations ŠKODA AUTO annual reports 2012, 2013, 2014, 2015, 2016

<http://www.skoda-auto.com/company/about/skoda-annual-reports-2017>

As long as ŠKODA AUTO a.s. is a part of VOLKSWAGEN group, we are not provided by numbers of market value of equity. That is why in my calculations I have been used to consider the book value of equity.

According to the computations we can see the safe position of the company. The Z-score started to increase each year from the 3, 31 in the year 2012 to the amount of 3, 87 in 2016. As we can see of the graph the amounts of the Z- score higher than 2, 99 during all examined years. That gives us the opportunity to asseverate that company belongs to safe zone, has stable financial health and minimal risks of financial distress.

6. Conclusion

Summarizing, the main goal of the thesis was to conduct the financial analysis of ŠKODA AUTO a.s. The purpose of this work was to evaluate the company's financial health position, efficiency, stability and attractiveness to investors.

The first part of the work was postulated on the theoretical knowledge. The explanation of the financial analysis, identification of its users, sources and providing the explanation of the formulas and ratios used after.

The second part provides the information about the history of the Škoda company and industry analysis, which helps to understand trends and financial situation in certain company.

The third part is direct implementation of the theory on practice.

By using data printed on the annual reports of the company, I was able to provide vertical and horizontal analysis, liquidity ratio, leverage ratio, profitability ratio and activity ratio. After computing different approaches, I examined and analyzed all the data by comparing them to the benchmarks of the industry.

The company Škoda today represents one of the largest companies specializing in mechanical automotive engineering and is a key sector in the economy of the Czech Republic. The company is a clear example of a rapidly developing enterprise. For all the years of the company's existence, there has been a steady growth in production and economic indicators. The company's assets are growing, and number of sales is increasing each year. The company is expanding, expanding its economic reserves, capacity and increasing its production scale. It should be noted that the figures are averaged and depend on individual regions – Škoda operates on different continents, which behave differently depending on different circumstances. For example Russian market fell by two times in 2015-2016 and was affected the financial results.

The largest sales market for the company was and still is Western Europe - this region shows the highest figures in the purchase of Škoda products.

Also the forecasting of financial failure has been provided. The financial health of the company is stable and strong, Škoda increasing the economic power by putting efforts to strengthen the position on the car market.

I strongly believe that SKODA AUTO a.s. will continue in production of high quality, modern, safe and reliable cars, will achieve new impressive results, by showing good financial performance and will stay successful and attractive for investors.

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Graph 6: Profitability ratios of ŠKODA AUTO a.s.

Graph 7: Profitability ratios of ŠKODA AUTO a.s.

Graph 8: Activity ratios of ŠKODA AUTO a.s.

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Appendix

Appendix 1 Balance sheet of ŠKODA AUTO a.s. (CZK million) 2012-2016

Item	2012	2013	2014	2015	2016
Assets					
Intangible assets	18,782	21,488	25,168	24,813	21,483
Property, plant and equipment	56,288	61,446	65,916	65,642	64,509
Investments in associates	2200	2,352	2,352	2,352	2,352
Other non-current Receivables and Financial assets	4,196	866	9,047	11,185	13,575
Deferred tax asset	2,027	1,524	2,607	3,613	2,870
Non-current assets	83,493	87,923	105,139	107,654	104,838
Inventories	18,619	11,092	12,326	15,115	16,093
Trade receivables	12,015	11,290	11,941	11,937	16,830
Other current Receivables and Financial assets	4,945	9,727	4,387	5,629	17,163
Cash and cash equivalents	40,457	31,926	42,878	62,280	73,256
Current assets	76,493	64,078	71,730	94,961	123,342
Total assets	159,986	152,001	176,869	202,615	228,180

Appendix 2 Balance sheet of ŠKODA AUTO a.s.(CZK million) 2012-2016

Item	2012	2013	2014	2015	2016
Equity and liabilities					
Share capital	16,709	16,709	16,709	16,709	16,709
Share premium	1,578	1,578	1,578	1,578	1,578
Retained earnings	64,301	74,162	86,890	103,963	113,726
Other reserves	(1,517)	(2,133)	(5,176)	(4,768)	(5,567)
Equity	90,906	90,316	100,001	117,482	137,580
Other non-current liabilities	5,483	4,820	7,898	5,744	4,164
Non-current provisions	10,693	7,774	10,509	13,197	14,270
Non-current liabilities	19,176	12,594	18,407	18,941	18,434
Current financial liabilities	107	3,106	-	10,966	8,278
Trade liabilities	30,807	29,314	35,741	38,012	41,903
Other current liabilities	5,933	6,183	10,280	-	-
Current income tax liabilities	71	-	1,559	2,375	3,294
Current provisions	12,986	10,488	10,881	14,839	18,691

Current liabilities	49,904	49,091	58,461	66,192	72,166
Total equity and liabilities	159,986	152,001	176,869	202,615	228,180

Appendix 3 Income statement of ŠKODA AUTO a.s.(CZK million) 2012-2016

Items	2012	2013	2014	2015	2016
Sales	262,649	243,624	299,318	314,897	347,987
Cost of sales	221,751	209,538	254,944	268,184	295,232
Gross profit	40,898	34,086	44,374	46,713	52,755
Distribution expenses	19,179	13,067	13,466	13,272	13,503
Administrative expenses	6,855	6,679	6,939	7,273	7,843
Other operating income	10,122	6,024	5,130	18,779	6,498
Other operating expenses	7,069	7,827	7,501	9,793	7,015
Operating profit	17,917	12,537	21,598	35,154	30,892
Financial income	1,689	2,007	2,367	1,781	2,777
Financial expenses	2,944	1,594	2,616	2,697	2,820
Financial result	(1,255)	413	(249)	(916)	(43)
Profit before Income tax	17,934	12,950	21,349	34,238	30,849
Income tax Expense	2,580	1,564	2,928	3,422	5,686
Profit for the year	15,354	11,386	18,421	30,816	25,163

