Tampere University of Applied Sciences

Financial ratio analysis

Handbook for a case company

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Degree Programme in International Business
Accounting and Finance

ABSTRACT

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Handbook for a case company

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This thesis was commissioned by sole proprietorship who has operated in the field of beauty and wellness for eight years. The thesis topic was to establish a handbook and an Excel tool to assess the financial performance of the company. Financial ratios formed the backbone for the thesis since they are seen to be competent tools for financial analyzing. The handbook included theories about financial ratios and a financial ratio analysis of the case company's three previous fiscal years. The Excel tool piloted the functional part of the thesis. Thesis purpose was to demonstrate how financial ratios and Excel models can be used in financial analyses.

To gain knowledge about financial ratios, the author familiarized herself with scientific literature as a secondary data. In financial ratio analysis the author used the commissioner's financial statements, and the results were judged by using time series analysis and cross-sectional analysis. In cross-sectional analysis the author used beauty service and other health service industries' median statistics from Finnvera. Therefore, the handbook was done by using secondary data and both quantitative and qualitative research methods. The Excel tool was made by following constructive research approach.

From the theory, the author found out that financial ratio analyses require extensive framework and understanding large entireties. Based on the constructive research approach, the author found out that the Excel tool should be simple, easy to use and evoke new research questions. From the financial ratio analysis, the author discovered that the case company's strengths are that it generates enough profits from its core business activities and that the solvency of the company is adequate. High operational costs, dependence on customers and low levels of working capital are the company's weaknesses. Author concluded that the case company can operate with this current strategy, but it does not necessarily secure long term survival.

From the financial ratio analysis, which was done with the Excel model, the author discovered a new research question: "how can the company improve its profitability?". The author suggests that it should decrease its operational costs and ponder its pricing strategy again. Issues with profitability causes issues with other items as well which disturbs the total financial performance of the case company.

Key words: financial statements, financial ratios, financial ratio analysis, excel models

CONTENTS

1 INTRODUCTION

Regardless the size of the company, monitoring financial performance should be routine task. The issue is that, particularly in very small businesses, the success in the monitoring of finances, is usually solely in the hands of the entrepreneur. In many cases, the entrepreneur lacks skills and particularly time to investigate the financial data. Often the entrepreneur's time is tied up with the daily tasks and the bookkeeping and financial management is outsourced. In this type of situation, the financial reports might be difficult to understand and it might feel heavy to find concrete information from them. (Keränen 2017.)

The commissioning company recognized these issues related to lack of skills and time and asked help from the author. The commissioner wished for a solution that could help her to assess the financial performance of the company. After discussing with the commissioner, the author came to conclusion, that financial ratios could be the solution to the mentioned problem.

Correctly chosen and analysed financial ratios transform the information from the financial statements into more perceivable form. Financial ratios are usually categorized into three main groups which are profitability, solvency and liquidity. These concepts are tightly bound to each other and together they form the corner stones of company's finances. Every entrepreneur should frequently follow at least few ratios from each of these categories. (Keränen 2017.)

The thesis has two parts: a handbook which includes financial ratio theories and a financial ratio analysis and a practical part which is an Excel tool build to perform the financial ratio analyses. Together these form an entity which both offers theory and hands-on solution.

2 THESIS PLAN

2.1 Thesis topic

The thesis topic is to establish a handbook and an Excel tool for the case company so it could evaluate its financial performance. The focus is to introduce financial ratios as an instrument of financial analysis and to demonstrate how to use them. The handbook includes theories about financial ratios and a financial ratio analysis based on the commissioner's three previous fiscal years. The analysis is made to test the functionality of the Excel tool and to show the professional skills of the author.

The topic originated from the commissioner's wish to better acknowledge the financial situation of the company. The commissioner has operated in the field of beauty and wellness for 8 years, and the entrepreneur reckoned that it is time to start evaluating the financial performance of the company. So far, there has not been made any financial analysis and the entrepreneur follows regularly only the balances of the accounts. The closing of books is mainly seen as a mandatory task to be done for the tax authorities. The commissioner would like to learn how to better interpret the financial statements and how to utilize the information from them.

The commissioner approached the author since she did not know where to begin with the financial analysing process and which tools would be suitable for the analysis' purposes. The commissioner acknowledged that she lacks time to search information about financial analyses, so she turned to the author. The commissioner said that the biggest issue is that there is too much information available for her to go through and often the information is irrelevant concerning her business.

The author decided that financial ratio analysis would be a suitable solution for the case company because according to Ingram (2019), financial ratios are simple calculations taken from financial statements, which helps the user to comprehend the financial information more easily. Financial ratios are also extremely

convenient tools to make comparisons because the company or companies in question are review based on their performance, not by size or volume, which can sometimes obfuscate the user. (Ingram 2019.)

Despite the practicality of financial ratios, as the commissioner recognized, there are major issues concerning the vast amount of information. According to Goel (2016), financial ratios are efficient indicators of the company's performance and financial situation, but it is important to choose ratios which are the most adequate concerning the business at hand. However, selecting the right ratios is not an effortless task because there are plenty of financial ratios available and not all ratios can be used in every business. Some ratios apply to all businesses, some are only industry specific and some are made just for a specific company because the user can shape the ratios based on his or her vision. (Goel 2016, 3.)

To solve the time and information retrieval issues, the author concluded that the best solution is to create a handbook that includes only the core theory about financial ratio analysis and a tool that would calculate the ratios for the user.

2.2 Thesis objective, purpose, and research question

Objective of this thesis is to investigate how financial ratios and Excel models can be used to evaluate the financial performance of the case company. The theory part of this thesis (the handbook) will examine the financial statements, the financial ratios and the financial ratio analysis and the Excel tool will pilot the functional part of the analysis. One crucial objective of the Excel model is to also show the potential of Excel in financial analyses and to inspire the commissioner to survey the company's performance. The author wants to exhibit that Excel is a good tool to perform all kinds of controlling and that the build model can be utilized in other analyses as well.

The research question of this thesis is: "how can the case company evaluate its financial performance?" and the thesis purpose is to demonstrate how financial ratios and Excel models are used in financial analyses.

2.3 Concepts

The concepts that are used in this thesis relate to financial statements and the standardisation of them. These concepts together with the applicable theory are used as secondary data and they form the theoretical framework for this thesis. To understand financial ratios, it is important to first determine the concepts of financial statements and standardisation of financial statements. In upcoming chapters, the author will first introduce the characteristics of financial statements and then the theory of financial ratios.

2.3.1 Financial statements

According to Kallunki (2014), financial statements are made to provide information about the company's financial situation. This information is needed when making various decisions. Financial reporting provides an insight of what is happening financially inside the company. Without these reports, judgements about the company's financial situation would be impossible to make. The financial statements might interest a lot of different stakeholders and here are listed some key groups who might need the company's financial reports and why:

- Creditors: creditors need financial information to determine whether to lend money and to see if the company is meeting the requirements of loan programs that are already in place. Creditors are mostly interested with the company's ability to pay back on time and with the values of realizing the company's assets in possible financial crisis. Creditors often judge the creditworthiness of a company by calculating ratios that measure the company's indebtedness, liquidity, and profitability. These ratios are calculated from the financial statements.
- Investors: investors use financial information to determine whether the company is a good investment and whether they would like to invest money in it.
- Suppliers: suppliers sell commodities and services and they are mainly interested in the company's short-term liquidity because the payback period for goods is often only couple of months.

- Authorities: authorities are central users of financial statements. For a long time, the statements have been made to calculate the taxable profit for the tax authorities.
  (Kallunki 2014, 1–3.)

During the closing of accounts, the financial statements and their attachments are made. The financial statements to be prepared are income statement (or profit and loss statement), balance sheet (or statement of financial position) and statement of cash flows. These reports define and allocate profits, expenses, used resources and funding of operations. (Seppänen 2011, 36–37.) This thesis will only discuss the elements of income statement and balance sheet and they will be discussed in greater detail in chapter three.

2.3.2 Standardisation of financial statements

The information from financial statements has got an important decision-making impact on internal and external receivers. The financial reports are made to offer reliable and comparable information for the markets to use. Non standardised data may lead to wrong decisions at various levels of management and an increase in economic and investment risks. Useful information means data which is reliable and comparable. (Wladyslaw 2016, 80.)

In accounting, standardisation means that same rules and principles should be applied when making financial reports. For example, IASB (International Accounting Standards Board), which is an independent body of the IFRS Foundation (International Financial Reporting Standards), aims to formulate unified accounting standards to be obeyed in financial statements. The Conceptual Framework for preparing and presenting financial statements is called “IFRS Conceptual Framework”. They make general principles for preparing and presenting financial statements. The framework joints the fundamental quality characteristics of financial information to financial statements. These quality characteristics are described in the Figure 1. (Wladyslaw 2016, 82–88.)

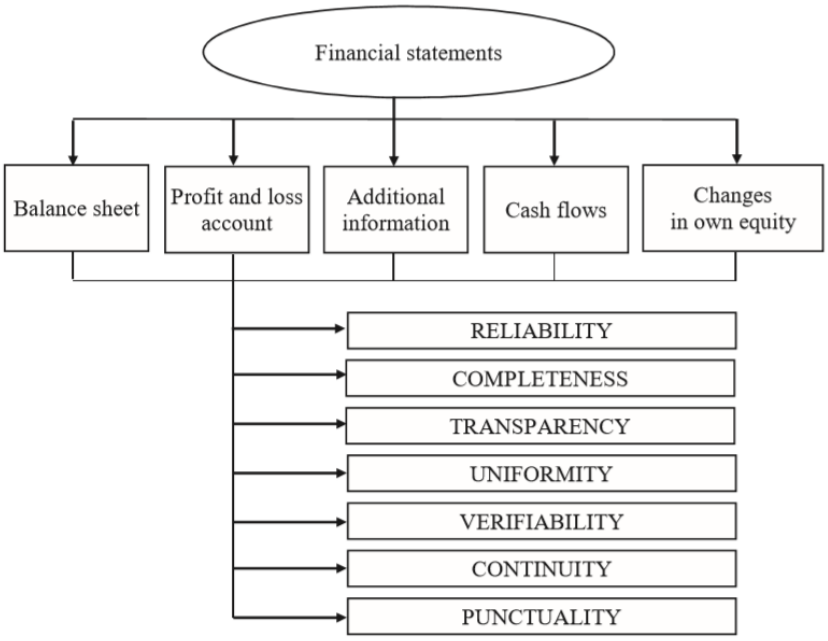


FIGURE 1. Quality characteristics of financial statements (Wladyslaw 2016, 88)

The reliability of financial statement means that the statement should be in conformity with the data from the accounting system. The completeness means covering recognised and foreseen economic issues. Not including significant details which relate to economic events causes incompleteness of information and incredibility. Transparency means presenting data in a way which allows highlighting the connections and correlations between pieces. Data which is correctly grouped and organised makes the statement transparent. Uniformity of a statement offers a possibility to execute comparative analyses between elements. Verifiability is achieved when the results can be reproducible. This means that if an independent accountant would have the same data and assumptions, he or she should have the same financial result as the company did. Continuity means the continuity principle, which means the assumption that the business will continue after reporting. Practically this means for example, that historical costs are used to value assets rather than their liquidation value. Timeliness means preparing and submitting the statements within the deadlines. (Wladyslaw 2016, 88–89.)

According to Kallunki (2014), Finnish accounting norms do not have similar theoretical framework as the IFRS concerning the preparations and presentation of the financial statements. In addition to the compulsory decrees, the Finnish accounting legislation follows many generic principles. One crucial principle is to

follow good bookkeeping manners which are comparable to the IFRS quality characteristics discussed in figure 1. All companies in Finland are free to use the IFRS standards but it is mostly used by publicly traded companies. (Kallunki 2014, 31.)

Even if the financial reports would be made according to above-mentioned decrees, often they are not fully comparable as such and some adjustments to the statements are therefore necessary before doing the financial analysis. This activity secures that the results from the analysis are according to the quality characteristics. (Kallunki 2014, 31.) These practical matters will be later discussed in chapter three as the author will make possible adjustments of the case company's financial statements before performing the financial ratio analysis.

2.4 Financial ratios as applicable theory

Financial ratios form the theory for this thesis, and they are discussed here to give the readers a general introduction to them since it is important to know the nature of financial ratios before they are used in financial analyses.

The commonly used financial ratios can be classified into five different categories. These are profitability ratios, efficiency ratios, liquidity ratios, solvency ratios and market ratios. These categories are formed based on the objective of analysis since each ratio measures different aspect of the company's finances. (Goel 2015, 3.) The figure number two illustrates the common categories of financial ratios.

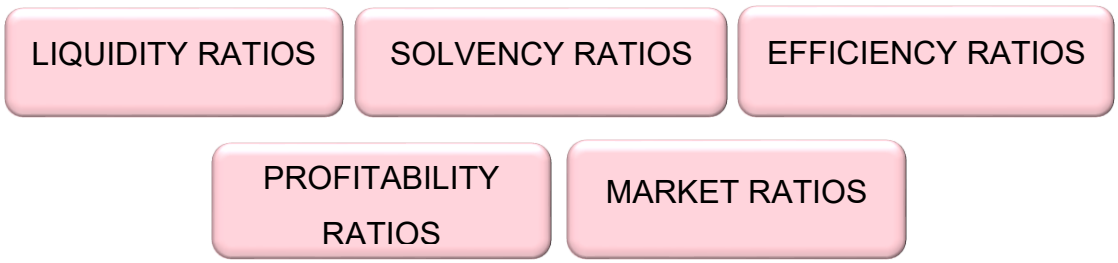


FIGURE 2. Categories of financial ratios (Goel 2015, 3)

2.4.1 What is a financial ratio

The goal of a financial ratio is to judge the financial situation and performance of a company. They assess the operational, investment and funding strategy of a business by combining elements from financial statements. The simple structure of a financial ratio is item from financial statement divided by another financial statement item (Formula 1)

$$\text{Financial ratio} = \frac{\text{Item from financial statement (e.g. net profit)}}{\text{Item from financial statement (e.g. owner's equity).}} \quad (1)$$

A single financial ratio can be calculated by many ways. There are no standards nor one correct way to calculate the ratios. The user can shape the formula according to his or her objective or vision. To know what the financial ratio exactly measures, one needs to know how the ratio has been calculated. Financial ratios should always be calculated similarly when performing financial ratio analysis, otherwise the results might not be comparable. Financial ratios that are from different sources should not be compared without knowing the formula items. It is also important to recognise that different standards for preparing and presenting financial statements affect the values of financial ratios (e.g. IFRS vs. Finnish norms). Other factors like methods, estimates and predictions might also impact the financial statements and the ratio values. (Seppänen 2011, 64–69.)

2.4.2 Advantages of financial ratios

Financial ratios are good indicators of the company's financial situation since they can be used to determine the profitability, efficiency, liquidity, and solvency of a company. Financial ratios can be used to analyse the trend of the firm's growth, to forecast and to set up goals. (Goel 2016, 3.)

Financial ratios transform the data from the financial reports in more concrete form. They highlight the core information so the user can judge the performance of a company by looking at few numbers instead of observing the whole statement. With the help of the ratios, the company can judge whether the financial

position is improving or decreasing and formulate better plans. Financial ratios do not only help to assess the past performance and plans for future, but they also enable intrafirm and interfirm comparisons. (Goel 2016, 5–6.)

2.4.3 Limitations of financial ratios

In addition to the advantages, there are also limitations. According to Goel (2016), there are issues concerning reliability, definition, timeliness and with the analysis. Reliability means that the ratios are only as reliable as the source of the data, which in this case, means the financial statements. Issues with the definition means that there is no fixed set of key ratios, there are no rigid definitions for all ratios, and there are no standards for every ratio. Different industries have different bases to calculate and to interpret the ratios, and the ratios can even vary depending on the country. Issues concerning timeliness means that the ratios reflect the past, while often the users are more interested in the current and future situation of the company. (Goel 2016, 6.)

2.4.4 Analysing the financial ratios

The biggest challenge is often with the analysis. According to Goel (2016), financial ratios should always be compared to something or otherwise the ratio value does not necessarily mean anything (Goel 2016, 6). Seppänen (2011) also agrees that there are usually no “correct” or “normal” values since it depends on the context. Seppänen (2011) suggest that the ratio values should always be compared to some benchmarks which operate as reference values. Benchmarks can be:

- Budgeted or internally set values
- Values from previous periods (time series analysis)
- Industry based values or competitor’s values (cross-sectional analysis)
- Absolute or theoretical values
- “rule of thumbs”

(Seppänen 2011, 66.)

Budgeted or other, internally set values are used to judge whether the company has reached its goals and if the management has succeeded in reaching those goals. In time series analysis, the ratio's development, trend, and variability can be analyzed. In time series analysis the company's latest performance is compared to its previous results. When the company's values are compared to its industry peers' values or to the biggest competitor's values, it is called cross-sectional analysis. Cross-sectional analysis usually provides crucial information about the company's strengths and weaknesses. Only in rare cases there is a correct, theoretical value for the ratio, which is why theoretical values as benchmarks are rarely used. Rule of thumbs mean comparing the company's result to the average industry norms. Particularly when using this approach, the analyst should have solid conception about the company in question, the industry and factors impacting the ratios. Usually the best way to perform financial ratio analysis is to combine time series analysis and cross-sectional analysis. It is wise to start by selecting few key ratios, identify the strengths and weaknesses of the company and the reasons for those qualities. (Seppänen 2011, 66–68.)

To fully understand the value of the ratio, the analyst should know the company's strategy, industry, and the whole operational environment. Financial ratios are indicators of the relationships between pieces of data, so they do not tell straight answers. Therefore, a solid grasp of the business model at hand is needed to fully analyse the ratios. (Seppänen 2011, 69.) In addition to these matters, Kallunki (2014) adds that the analyst should also understand micro- and macroeconomics and their affects to the business (Kallunki 2014, 20).

2.5 How the theory and concepts are applied in the thesis

Based on the theoretical framework, the author has decided to focus on only couple of key profitability, solvency, and liquidity ratios. These three categories are essential for any entrepreneur to understand because they are tightly bound to each other in a way that usually when one item improves it affects positively the other items as well. Therefore, it is extremely relevant for the business owner to perceive that the company's finances can be categorized into groups, but they are all part of the entirety.

It can be also easier to detect the weaknesses and strengths of the company by first focusing on these three categories and then later, when the company has better perception of its financial situation, it might be worthwhile to take more ratios and categories into the analysis and use them to identify new strengths and weaknesses. Now that the company has little or no perception of its financial situation, it is wise to start by few key points.

The figure number three illustrates the financial ratio categories which are in the centre of the analysis and in the author's thesis.

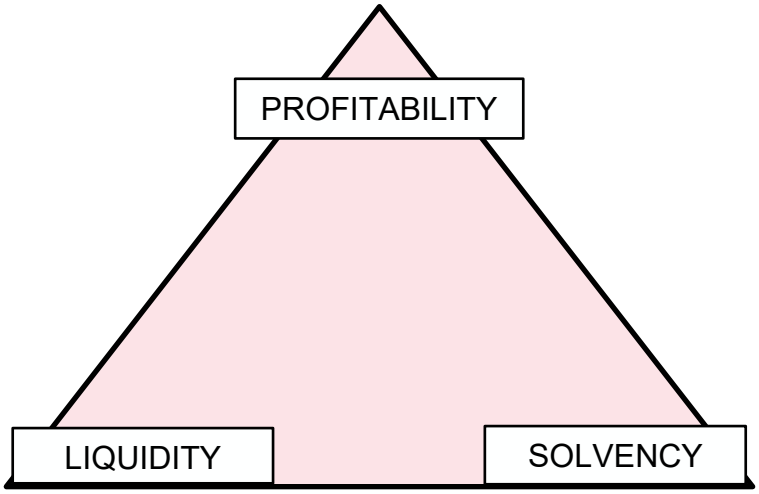


FIGURE 3. Financial ratio categories to be used in the analysis

The goal of this financial ratio analysis is to identify the company's strengths and weaknesses and the financial trend of the company. Therefore, the chosen benchmarks for the financial ratio analysis are time series analysis and cross-sectional analysis. Some theoretical values will be as well used as reference.

Years from 2017 to 2019 are used in the time series analysis, because the commissioner said, that within those years the financial result has been the most stable and the business has finally settled after the first difficult years. In cross-sectional analysis the author will evaluate the case company's result to beauty service sector's and other health service sector's median results. These statistics are taken from Työ- ja elinkeinoministeriö website which publishes Finnvera's statistics of different industries' financial statements.

The chosen profitability ratios that are analysed in this thesis are operating profit ratio, net profit ratio and operating ratio. These ratios provide information about the amount of profit the company generates from its operations. These ratios help to understand the income statement items and how these items affect each other. These ratios are also comparable within the industry and they help to visualize the trend the of the company's profits.

Operating profit ratio and net profit ratio are included in the analysis because the commissioner acknowledged that she does not know the company's levels of margins; are they high or low or even adequate. By comparing the company's profitability margins into the medians of the two industries and the other financial ratios, the author can conclude if the margins are at sufficient levels. The operating ratio reveals the levels of operating costs and this ratio is in the analysis because the commissioner admitted that the company has had issues with paying its bills, so this ratio reveals which costs consume the profits.

The liquidity ratios to be examined are current, quick, and super quick ratios. These ratios reveal the company's ability to pay its current liabilities. These ratios are essential measurements to every business because they indicate whether the company can manage with sudden payments. These ratios are comparable within the industry and there are also theoretical values which help making the analysis. The trend of these ratios can be bit more challenging to evaluate, since these ratios combine financial statement items which usually fluctuate a lot.

These liquidity ratios are included in the analysis because the case company has had issues with its payment ability, so the author will examine how severe the problem is and if there are items which disturb the liquidity. Common examples of these type of items are inventory and accounts receivables.

The chosen solvency measurements are equity multiplier, debt ratio and Debt-to-Equity ratio. These ratios combine elements from the balance sheet which makes the information from the statement more perceivable. Solvency ratios measure the company's ability to operate in the long run. Solvency ratios measure the company's financial leverage and ability to pay long-term debts. Some of these chosen ratios measure the same thing but from slightly different aspect. This way

the author secures that the information is more understandable, and it is also good way to test the tool's functionality when similar result is achieved by using different formulas. These solvency measures are comparable within the industry and they fit well in time series analysis purposes. There are also some theoretical values which help judging the results.

These solvency ratios are chosen to be in the analysis because if the company has liquidity and/or profitability issues, it is also essential to measure how leveraged the company is. These solvency ratios measure above all the company's financial risk and investment and growth possibilities which are important characteristics of a long-standing company.

Based on the theory, financial ratio analysis is not an effortless task and will require extensive framework which will be a challenge for the author. Most likely the biggest challenge is to understand the nature of the business and how does it affect the ratios. It might be also challenging to make comparisons and conclusions between the case company and the industry because the industries in question are quite versatile and they include a lot of different business models.

In figure number 4 is presented a mind map of the author's financial ratio analysis. The mind map will present all the above-mentioned ideas of the author's financial ratio analysis.

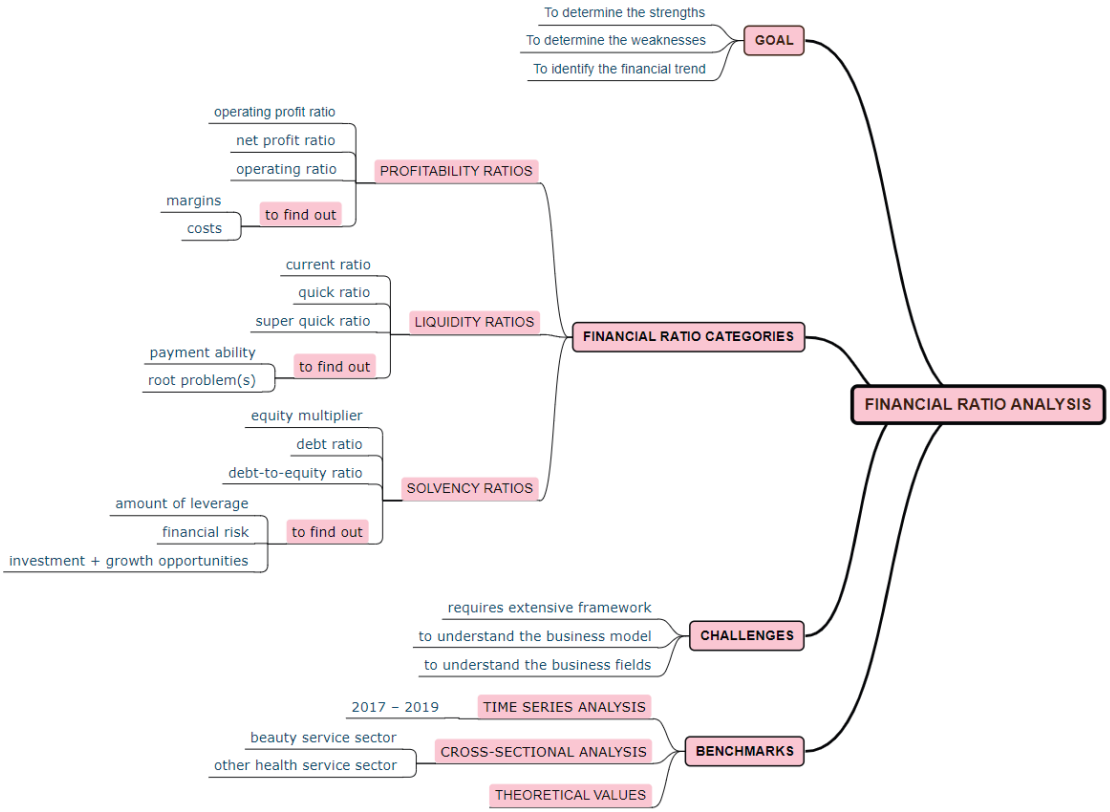


FIGURE 4. Mind map of the author's financial ratio analysis

2.6 Working methods and data

Secondary data, such as information from books, articles and online sources are used in this thesis to gain knowledge about financial ratio analysis. When the author performs the financial ratio analysis, she will use the commissioner's financial statements to calculate the ratios. Then the results are reflected to the chosen benchmarks which are from secondary sources. Therefore, the guidebook, including the analysis, is made by using solely secondary data and using both quantitative and qualitative research methods, because the data is in numerical and written form.

The Excel model is made by using constructive research approach. It means problem solving by creation of models, diagrams, plans or some other construction. Constructive research is often used in technical sciences, mathematics, and operations analysis.

Construction means producing solutions to explicit problems and their usability must be demonstrated by implementation of the solution. Crucial part of this approach is to tie the problem and the solution with theoretical knowledge. Constructive research approach can be outlined by diving it into phases:

1. Find a problem which is relevant and has research potential
2. Gain general and extensive knowledge about the topic
3. Innovate solution(s)
4. Demonstrate that the solution works
5. Present the theoretical connections
6. Examine the solution's scope of applicability

(Kasanen, Lukka & Siitonen 1993, 243–246.)

Constructive research approach usually reveals new problems, because construction that works, often leads to new questions. The validity of construction is achieved if the solution works. Construction that works is characterized to be relevant, simple and easy to use. One essential character of the construction approach is that the build solution should also work in other similar instances than its original field. Therefore, a successful constructive research means building an innovative solution to a real-world problem where the usability and theoretical framework are demonstrated, and it has potential for more general applicability. (Kasanen, et al. 1993, 258–261.)

Based on the constructive research approach theory, the Excel tool should be simple, easy to use, and it should work for other, similar companies as the commissioner's business. The tool's usability and validity will be tested in the financial ratio analysis. The tool will be tested by doing manual calculations and then comparing the results to the tool's results. If the tool works, it is valid and usable. The Excel tool will be evaluated in chapter six and examined how well the criteria of constructive research approach actualised in this project.

2.7 Thesis process

The first chapters of this thesis introduced the topic, key concepts and theories and working methods. Chapter three presents the financial statements and their standardisation in detail and the author will review the possible standardization of the commissioner's financial statements. In chapter four, each of the financial ratios that are used in the analysis are presented. In chapter five the author will carry out the case company's financial ratio analysis. Chapter six will discuss the elements of the Excel model; how is it like, how it was tested, how it is protected and what is the author's judgement of the model based on the constructive research approach theory. Chapter seven includes conclusions and author's self-evaluation of the thesis.

3 FINANCIAL STATEMENTS

3.1 General matters of income statement and balance sheet

According to Seppänen (2011), important matters to understand and to interpret from the financial statements are:

- What the financial statement is meant to measure
- What is the basic structure of it
- What are the basic principles of the statement
- What accounts should be particularly examined from the statement

These matters build the foundation for the analysis and for the correct interpretation of financial ratios. (Seppänen 2011, 37.) In this chapter the income statement and the balance sheet will be discussed in detail before dealing with financial ratio analysis. This chapter will provide answers for these above-mentioned matters.

3.2 Income statement

Income statement measures company's financial result in the accounting period. The financial result is measured by deducting all expenses from the revenues (Formula 2)

$$\text{Financial result} = \text{Revenues} - \text{Expenses}. \quad (2)$$

If revenues surpass expenses, the result is positive, and the company has made profits. If expenses surpass revenues, the result is negative, and the company has generated losses. Sustaining positive results keep the business operating in the long run. If the result is negative, the company will not generate any internal funds and it needs to rely on external funding. (Seppänen 2011, 38.)

3.2.1 Structure of income statement

Table 1. presents the common format of income statement. Revenues and expenses are categorized based on their nature to operative and to non-operative. Operating results are indicated first, followed by nonoperating results. (Drake, Fabozzi & Frank J 2012, 46.)

TABLE 1. Structure of income statement (Seppänen 2011, 39)

Sales revenue
Cost of goods sold
(Gross profit)
Operating expenses
Operating profit
Financial yields/costs
Profit before taxes
Taxes
Net income/loss

Sales revenue indicates the gross amount of goods or services sold in the accounting period. Sales returns, allowances and discounts have been deducted from the net sales. From the sales revenue, the cost of goods sold or sometimes called cost of sales, are deducted. This item indicates the costs of producing the goods or services the company has sold. This income statement item is particularly important for retailers, wholesalers and manufacturers to follow. Gross profit indicates the difference between sales and COGS. (Drake et al. 2012, 46.)

Operative expenses are costs which occur from the daily operations of a business. These costs are for example salaries, marketing, rent and electricity. Depreciation, which is the amortized cost of assets is also deducted here. The depreciation expense indicates how much of the asset's value has been used up. Operating profit is gross profit minus operating expenses. This item represents the income from the core operations. (Drake et al. 2012, 46–47.)

After the operating profit, the income statement allocates all the non-operative revenues and expenses. Financial yields are non-operative revenues, and they mean for example interest and dividend incomes and profits from investments. Financial costs are costs from financing the business: interest expenses and other fees on loans. After adding and or deducting the financial profits/costs the result is profit before taxes. Taxes are as well non-operative expense because they do not generate any sales revenues. By deducting taxes, the result is net income or loss. Net income belongs to the business owners' because it is the remains of the profits after deducting all the expenses. (Seppänen 2011, 38–41.)

3.2.2 Revenue recognition principle and matching principle

In accrual accounting, the principles of income statement are revenue recognition principle and matching principle. Revenue recognition principle means that revenues are recognized and included in the income when they are earned in the accounting period. This means that the revenue is recognized when goods are transferred or the work is completed, whether cash has been received or not. In matching principle, expenses are handled the same way as revenues: expenses which helped to earn the revenues must be allocated in the same accounting period as the revenues, despite the money transfer. (Epstein 2012, 10–11.)

3.2.3 Important items of income statement

When analysing the income statement, the focus is particularly on three items which are sales revenue, operating profit and net income.

Sales revenue is the most important, because if the business can not sell the goods and services it has produced, it does not have changes to survive. The sales revenue is the engine of the business. (Seppänen 2011 43.) Sales revenues are sometimes judged by comparing the result to previous years' result or to some defined goal. The sales revenue's development can be judged by calculating the revenue's growth compared to previous year's result. Changes in the

growth do not necessarily indicate better profitability but higher volume. For example, changes in sales prices or in sales quantities can cause the sales revenue to increase. When analysing the sales revenue's development, it is crucial to find the reasons for the changes. (Lauslahti, 2007.)

Operating profit indicates the amount of profits the company generated from its core business. Operating profit offers accurate information about the company's profitability because it excludes all additional revenues and expenses that are not related to the core functions. The operational performance must be profitable for the company to continue its business. (Chen 2019.)

Net income indicates especially for the owner, whether the business has been profitable or not after all the stakeholders have had their share of the profits. Over time, the net income needs to be positive for the company to operate without external funding. (Seppänen 2011, 43.)

3.3 Balance sheet

Balance sheet measures the financial position of a company at the end of the accounting period. The length of the accounting period does not have effect on the items' amount. Balance sheet differs from income statement in that sense. In income statement the length of the period affects the magnitude of the statement items: the longer the period, the bigger the amounts will be in the income statement. Balance sheet measures the financial position of the company based on one day, and that is at the end of the period. (Seppänen 2011, 44.)

The financial position of a company composes from its assets, liabilities, and owner's equity. Balance sheet allocates all these items. The basic structure of the statement is described in formula 3

$$\text{Assets} = \text{Liabilities} + \text{Owner's Equity}. \quad (3)$$

Assets are company's resources which have economic value and can be measured in cash, they indicate the resources the company needs to its operational

activities. Liability and owner's equity indicate company's funding and capital structure. Liabilities are money the company owes to different stakeholders: these are obligations the company still needs to fulfil. Owner's equity is what is left after all the liabilities have been deducted from the company's assets. This item represents the owner's share of the business. (Seppänen 2011, 44–45.)

3.3.1 Structure of balance sheet

Balance sheet is often used in decision making, because it provides detailed description of the company's funds and the financing of the business. Table 2. presents the common format of balance sheet. (Seppänen 2011, 45.)

TABLE 2. Structure of balance sheet (Seppänen 2011, 47)

ASSETS
Long-term assets
Intangible
Tangible
Long-term assets total
Current assets
Inventory
Accounts receivable
Bank balances
Cash on hand
Current assets total
Assets total
LIABILITIES AND OWNER'S EQUITY
Owner's equity
Owner's investment
Net income/Net loss
Owner's withdrawals
Owner's equity total
Long-term liabilities
Long-term debt
Other debts
Long-term liabilities total
Current liabilities
Accounts payable
Short term debts
Current liabilities total
Owner's equity and liabilities total

Assets are the operational and non-operational resources of the business. They are used to increase the firm's value or to benefit the firm's operations in future. Assets are divided in current assets and long-term assets. Current assets are those that the company will use in less than 12 months. These accounts usually include inventory, cash on hand and accounts receivable. These items are particularly important in terms of liquidity. All other items that the company will use for more than 12 months are long-term assets. These items are characterized to be either tangible (machinery, equipment, buildings) or intangible (goodwill, intellectual property etc). Long-term items are usually presenter in the statement before current assets, but it does not have effect on the analysis. (Seppänen 2011, 46–47.)

Liabilities and owner's equity represent how the assets are financed. If assets are financed by debt, it shows liability and if the financing is done through equity, it appears as equity. Liabilities represent the payment obligation of the company. Liabilities are characterized based on their maturity, same way as assets. All the liabilities that the company will pay within one year, are current liabilities and all the other debts are long-term liabilities. The most common current liabilities are accounts payable and short-term credits. Long-term liabilities are obligations which the company will pay in many periods and they are part of the regular funding of the business together with the owner's equity. Owner's equity is the amount of investments the owner has made in the business minus owner's withdrawals plus the net income (or minus the loss). Owner's equity is viewed as the owner's claim on the assets after all liabilities have been paid. Owner's equity is long-term and permanent funding of the business. Owner's equity is typically presented in the balance sheet before liabilities, but it does not have effect on the analysis. (Seppänen 2011, 47–48.)

3.3.2 Double-entry, going concern and historical costs

Double-entry system is a key concept of accounting. It means that every time a financial transaction is registered, it impacts at least two accounts in the company's books. Double entries are done by entering debits and credits into the books: every time a transaction is entered, the debits and credits must equal. This

ensures that the books will balance at the end of the accounting period. The accounting equation described in formula 3, is considered as the basis of the double-entry accounting. This accounting equation implies that all the company's assets equal the sum of liabilities and equity. Based on this double-entry rule, the equation remains balanced and each debit entry should have corresponding credit entry. (Epstein 2012, 12–13.)

Going concern and historical costs are key principles of balance sheet. Going concern means the assumption that the business will continue after the financial reporting. This principle is used to value statement items, because usually the values of assets and sometimes liabilities, are remarkably lower when the business folds than if it would continue its business. (Seppänen 2011, 49.)

The historical costs principle is also used to value statement items. It means, that assets are recorded at their historical cost, even if they would have increased in value over time. This prevents overstating the asset's value. For long-term assets, the depreciation is recorded for wear and tear. For example, for buildings and machinery, the depreciation is recorded regularly over the asset's useful life. Accumulated deprecation is subtracted from the historical cost which results in lower net asset value. (Seppänen 2011, 49.)

3.3.3 Important items of balance sheet

The total sum is an important factor to observe from the balance sheet. It indicates how much the company's operations require capital in its entirety. Typically, the amount of sales revenue and the total sum of balance sheet are connected. To generate sales revenue, it requires certain amount of resources. Long-term assets indicate how much of fixed assets are used in the operations of the business, or in other words, how much the operations have tied fixed assets. Current assets indicate how much of capital is tied to the operational activities in terms of inventory, accounts receivable and cash. (Seppänen 2011, 52.)

Important items from owner's equity and liability section are the amounts of owner's equity, debts which have interest, and other, non-interest liabilities.

Owner's equity indicates how much of owner's net worth is tied in the funding of business. The sum of debts tells how much of the company's operations and investments have required external funding. (Seppänen 2011, 52.)

3.3.4 Financing the business by equity and debt

It is important to recognize, that there are no rules concerning the optimal amounts of owner's equity and debt. Usually the branch of industry defines the optimal or "acceptable" amounts of debt in relation to equity. Even though there are no optimal amounts, high owner's equity is essential buffer against indebtedness and keeping the business operating in the long run. In other words, the higher the owner's equity, the larger amount of assets will surpass the liabilities and hence cover them if assets are liquidated. However, it is important to remember, that assets are valued based on the going concern and historical costs principle, so they do not represent realisation values. The realisation values might be remarkably lower particularly in situations, where selling the assets is a necessity. (Seppänen 2011, 52.)

Even though a high owner's equity is a good buffer against financial risks, it is also wise to sometimes rely on external funding. Disadvantages of financing the business by owner's equity are that the owners will usually get the invested money back when the business ends its operations. When the business folds, the owners of the business are the last ones to get their investment back, if there is anything left after all other stakeholders have had their share. Hence, the owners of the business carry the biggest financial risk. (Kinkki & Isokangas, 2003, 45–46.)

Depending on the form of the company, the owner can also realize his/her ownership to an investor or to a new entrepreneur. In this type of situation, the ownership changes but the amount of equity in the business remains the same. (Kinkki & Isokangas, 2003, 45–46.)

It is also important to remember, that people who have invested own equity into the business, usually have authority to impact the business decisions. Despite

these cons, in addition to the buffer aspect, pros of owner's equity are that it is flexible finance in terms of payments: refunds are not decided upfront and the business can decide when to pay shares of the profits. (Kinkki & Isokangas, 2003, 45–46.)

Positive aspects of financing the business by liabilities (external funds), include that the financer (investor) usually has no authority to the business. The financed amount is meant to be in the business for a certain time-period and the compensation (interest) of investment is agreed upfront. Only if the business appears to be incapable to pay, or the amount of liabilities have increased drastically, the financer might take control. Other advantages of loans include that the costs have been agreed upfront and increase in the company's profits do not increase interest expenses. Interests are also tax deductible and hence the taxman participates in paying them, leaving the due amount smaller for the company. Also, if the debt does not have index clause, inflation can weaken the market value of the debt and the company can pay the debt back with lower market value than it was received. Other advantages are also that there are multiple choices to get external funding and they are quite accessible. (Kinkki & Isokangas 2003, 47–49.)

Drawbacks of having liabilities can be that they need to be paid in fixed timetable. Instalments and interests need to be paid even in bad years and this can cause insolvency. Other drawbacks can be finding a suitable collateral for the liability, because usually they run out before money. (Kinkki & Isokangas 2003, 47–49.)

3.4 Standardisation of financial statements

Financial statements need to be standardised before they can be used in financial analyses. The standardisation process ensures that the results are comparable and usable in the analysis. If unstandardized financial reports would be used in analyses, the information could be misleading and lead to wrong interpretations. (Salmi 2011, 131; Heino 2013, 13.) In upcoming chapters, the author will examine the standardisation process in theory and make possible adjustments to the case company's financial statements.

3.4.1 Standardisation of income statement

Reasons to standardise income statement are to have accurate and comparable information about the volume, profitability, and result of the business. This information should represent the company's regular business activity as well as possible. (Yritystutkimus ry 2011, 17; Niskanen & Niskanen 2004, 61; Heino 2013, 13.) In table 3 is presented the model for standardized income statement.

TABLE 3. Standardized income statement (Yritystutkimus ry 2011, 103; Heino 2013, 14)

Sales revenue
Other revenue
TOTAL REVENUE
Material and utensil
External services
Personnel costs
Other costs
Finished goods
Depreciation expense
OPERATING REVENUE
Revenues from investments
Other interest and finance yields
Interest and other finance costs
Taxes
NET PROFIT
Occasional revenues
Occasional expenses
OVERALL RESULT
Other adjustments
Difference in exchange
NET INCOME

To have correct result of the company's profitability and volume, some adjustments to the sales revenues might be necessary. Sometimes sales revenues might include items that are nonrecurring or have not resulted from the company's core business activities. These other revenue items could be for example revenues from selling an asset, rent revenues or financial supports that have been granted for the company. These items should be moved to "occasional revenues" because the sales revenue should only include revenues from core operations (sales proceeds deducted by allowances and taxes). (Yritystutkimus ry 2011, 17–18; Heino 2013, 15.)

The "material and utensil" item of the standardized income statement is purchases plus inventory, so they are not classified separately. Personnel costs usually require adjustments. The sole proprietor's salary is not marked as expense in the official income statement, so the adjustment is necessary if the labour input of the owner is remarkable. Also, "other costs" item of the standardized income statement demands adjustments if they include relevant, nonrecurring costs. "Finished goods" is for businesses that practise production. Depreciation expenses should be adjusted if in the statement they are not according to the asset's quantity or quality. Then the difference of the adjustment is moved to the "other adjustments" section of the standardized income statement. (Yritystutkimus ry 2011, 20–21; Heino 2013, 15.)

Other interest and finance yields/costs should be adjusted if they include profits/losses on exchange. These are moved to "difference in exchange" item. Taxes should be adjusted if the business has had tax refunds or has paid additional taxes in previous years. These are moved to "occasional revenues/expenses". (Yritystutkimus ry 2011, 25; Niskanen & Niskanen 2004, 68; Heino 2013, 16.)

The last intermediate item of the statement is overall result. Occasional items are results that are not part of the regular business activities. After deducting or adding other adjustments, the result is net income or loss. (Yritystutkimus ry 2011, 26; Niskanen & Niskanen 2004, 69; Heino 2013, 16.)

3.4.2 Standardisation of the case company's income statement

The commissioner's sales revenues required adjustments because they included tax relieves which are not part of the core business activity. This amount was moved to "occasional revenues". Expenses were also adjusted for the personnel costs. The entrepreneur is the only worker in the business and makes her living primarily from the business. Therefore, the salary which she has informally paid for herself has been added to the operational expenses. No other adjustments were necessary in the income statement. The standardized income statement can be found from the appendix 1.

3.4.3 Standardisation of balance sheet

Balance sheet is adjusted to get correct and comparable information about the financial position of the company. For example, balance sheet might include assets that have been noted to be unproductive and these should be therefore deducted from the assets and the owner's equity should be decreased for the same amount. Other relevant adjustments could be if current assets include items that are in fact long-term assets or if shares or investments have been noted valueless. In this case, the worthless investments should be removed from the shares/investments items and deduct the owner's equity for the same amount. Other relevant adjustments could be if accounts payables include part payment liabilities. This liability amount should be then moved to the current liabilities to item "short term debt with interest". (Yritystutkimus ry 2011, 31–33; Heino 2013, 18.)

The formula or model for the standardised balance sheet is similar to the table 2 in which is presented the common format of balance sheet. For the commissioner's business, the only relevant modifications are that bank balances and cash on hand are combined in one statement item and that owner's equity is stated without the calculations. The model for standardised balance sheet is described in table 4.

TABLE 4. Standardized balance sheet (Yritystutkimus ry 2011, 104–105; Heino 2013, 19)

ASSETS
Long-term assets
Intangible
Tangible
Long-term assets total
Current assets
Inventory
Accounts receivable
Cash
Other current assets
Current assets total
Assets total
LIABILITIES AND OWNER'S EQUITY
Owner's equity
Owner's equity total
Long-term liabilities
Long-term debt
Other debts
Long-term liabilities total
Current liabilities
Accounts payable
Short term debts
Current liabilities total
Owner's equity and liabilities total

3.4.4 Standardisation of the case company's balance sheet

The case company's balance sheet did not require any adjustments apart from reorganizing the cash, bank balances and owner's equity items. The standardized balance sheet is in the appendix 2.

4 FINANCIAL RATIOS AS PERFORMANCE MEASURE

4.1 Significance of measuring the company's finances with different financial ratios

According to Maverick (2020), financial ratios are used to efficiently measure the company's financial performance without having to investigate the whole financial statements. Although they are convenient measurements, a single ratio does not signify anything. The company's finances, or financial health can be divided into categories, (as described in chapter 2.4 of chapter 2.) but when making conclusions about the company's total financial situation, it is necessary to consider all the company's financial areas and how they together impact the company's financial performance. The ratios are meaningless unless they are used alongside other different metrics; no single ratio can indicate the overall financial situation of the company. The different ratios from different categories, and their trend together form holistic view of the company's financial health. (Maverick 2020.)

As explained in the chapter 2.5 of chapter 2. the author has decided to limit the financial ratio analysis to three financial ratio categories: profitability, liquidity, and solvency. The author concluded that this limitation serves best the objectives of the thesis but still offers a holistic view of the company's financial performance.

In upcoming chapters, the author will introduce more broadly the chosen financial ratios from each of these three categories.

4.2 Profitability ratios

Profitability ratios are meant to measure the overall efficiency and performance of a firm. For most businesses, the key objective is to maximize profits. Profitability ratios are used to analyse the operational health of the firm for profit generation. Good operational health is achieved when a firm is capable of garner profits from its core activities. Profitability ratios can be divided into margins and returns.

Margins measure the firm's ability to translate sales rupees into profits and returns measure the firm's efficiency in generating returns. (Goel 2015, 9.) In this thesis, the author will examine only the margin ratios since they are more relevant for the commissioner.

Margins measure how much the company has generated profits after all the relevant expenses have been deducted from the revenues. The difference is then compared to the revenues. The margin ratios indicate the company's price determination and the amount of resources which enabled the profits. Margin ratios also reflect the amount of competition in the field and how the competition affects the business operations and the industry. Typically, in businesses where the competition is fierce, the profit margins can be only couple of percentages (1-2%). Common example of low profit margin businesses is retail industry. (Seppänen 2011, 75.)

4.2.1 Operating profit ratio

Operating profit ratio is a good indicator of the company's long-term profitability because it includes the profits only from core operations. Operating profit ratio indicates how much the company makes (before interest and taxes) on each euro of sales. The higher the margin, the better the performance. Operating profit ratios can be evaluated by time series analysis and cross-sectional analysis. If the company's margins have increased compared to previous results and the competitors' result, it has improved its performance and earned more euros per sale. For example, if the operating profit ratio is 12 %, it means the company makes 0,12 euros (before interest and taxes) for every euro of sales. (Goel 2015, 10–11.) Operating profit ratio is described in formula 4.

$$\text{Operating profit ratio} = \frac{\text{EBIT / Operating profit}}{\text{Sales revenues}} \text{ x } 100. \quad (4)$$

Investors and creditors often use operating profit ratio to judge how well the business supports its operations. A company is considered stable and less risky if it

earns enough income from its core operations to support the costs of the business. If a company requires operating and no-operating income to cover just the operating expenses, then the operating activities are not profitable enough which is a risk in the long-run. (My Accounting Course n.d.)

Operating profit ratio is also an indication of the company's management skills because operating profit ratio includes mainly variable costs. Companies usually have less control to impact fixed costs than variable costs which is why operating profit ratio is seen as indication of the company's management's strengths. (Corporate Finance Institute n.d.)

Operating profit ratio is generally seen as a good tool to be used in time series analysis and in cross-sectional analysis. However, Corporate Finance Institute (n.d.) has stated, that the company's production strategy (outsourcing or in-house production) and the method of depreciation can affect the profit margin which can reduce the comparability of the ratio. For example, when using double-declining balance depreciation method, the profit margins might increase over time even though the efficiency has not changed. If the company would use straight-line depreciation, the margin would be constant unless some other factor would change. General rule is to use the same criteria concerning the geography, company size, industry and business model when performing cross-sectional analyses. Operating profit ratios (like other ratios) should always be used alongside other metrics rather than dealing with them separately. (Corporate Finance Institute n.d.)

4.2.2 Net profit ratio

Net profit ratio indicates the ultimate profit picture of the company. Net profit is the final profit, so this ratio indicates how much each rupee earned is finally translated into profits. Net profit margin indicates particularly the amount of safety, risk and the level of control the company has over its costs. Low net profit margin means low level of safety and high risk. If sales decline, profits will erase, and the result might be net loss. Net profit ratio is described in formula 5.

$$\text{Net profit ratio} = \frac{\text{Net profit / Net income}}{\text{Sales revenues}} \times 100. \quad (5)$$

The higher the ratio, the more effective the company is in transforming the revenues into actual profits. Net profit margins are mostly used in time series analyses. For interfirm comparisons, the ratio might not be as relevant. For example, if the company has recently taken a long-term loan to increase production capacity, the net profit ratio will be notably lower, and this might be falsely decoded as inefficiency. (Goel 2015, 11.)

Investors are usually interested in the net profit ratio because it indicates whether the company is generating enough profits from sales to cover all the expenses the company has. For example, sales revenue might have grown but if operational costs are growing faster, the net profit will decrease. Ideally the goal is that the net profit margins or rates rise over time. (Murphy 2020.)

According to Murphy (2020), one limitation of net profit margin is that it is not contingent upon sales revenue growth. The ratio can include nonrecurring revenues like selling an asset, which would for the moment increase profits. Therefore, net profit margin is not that relevant indicator of the company's revenue growth nor indicator of how well the company has managed its production costs. (Murphy 2020.) The standardisation of income statement luckily takes care of this issue, since all revenues/costs which have not resulted from the core operations, should be moved to the final item of the standardized income statement, so they will only impact the end result. However, Murphy has a point, that the net profit ratio is not as relevant tool as for example operating profit ratio to measure the revenue growth or management of production costs.

4.2.3 Operating ratio

According to Goel (2015), operating ratio (or operating cost ratio/operating expense ratio) measures the profitability of the firm regarding to coverage of expenses. Unlike the above-mentioned profitability ratios, this ratio should be as low as possible. This ratio measures the company's ability to generate profits if

revenues decrease: the lower the ratio, the better the company can generate profits if sales decline. (Goel 2015, 12.) Operating ratio is described in formula 6.

$$\text{Operating ratio} = \frac{\text{COGS + Operating expenses}}{\text{Sales revenues}} \text{ x } 100. \quad (6)$$

Operating ratio and net profit ratio are correlated. Net profit ratio indicates the amount of final profits from sales and the operating ratio measures the amount of costs related to those sales. Therefore, high operating ratio means low net profit ratio and vice versa. For example, if operating ratio is 60%, it means that 60% of sales revenues are used to cover costs of goods sold and other operating expenses the company has. It is therefore self-evident for the company to keep the operating ratio as low as possible and the net profit ratio high as possible. (Accounting for management n.d.)

According to the Accounting for management website (n.d.) operating ratio should always be compared to the company's past years and to the ratio of other companies operating in the same field. Increase in the ratio should always be investigated as quickly as possible. (Accounting for management n.d.) Goel (2015) is adding that, if operating ratios are used in time series analyses and the company has seasonal variations in sales and expenses, the month's result should always be compared to those of the same month in the upcoming years to have accurate and comparable information about the ratio's development (Goel 2015, 12). Therefore, the analyst should always compare the ratios from the same period and especially observe the trend of the ratio. Murphy (2020) also adds that operating ratios should be reported and analysed over multiple periods. He argues that sometimes the ratio's value is not constant, and companies can sometimes decrease costs in the short run to inflate the earnings temporarily. Therefore, the trend of the costs should be compared to multiple results and to those results that measure the trend of the revenues and profits. (Murphy 2020.)

Even though the Accounting management website suggests that the ratio should be used to compare companies in the same field, Murphy (2020), adds that operating ratio has limitations concerning interfirm comparisons. Limitation of this ratio is that it does not include costs items related to debt. Some companies might

pay large interest and other financing costs, which are excluded from the ratio. Therefore, two companies might have the same operating ratio but different levels of debt. When comparing the performance of specific companies, it is recommended to compare both the debt ratios and operating ratios before coming to conclusions. Despite this fact, Murphy also agrees that general comparisons between the company and the industry as whole are relevant and worthwhile to analyse. (Murphy 2020.)

4.3 Liquidity ratios

Liquidity ratios measure the firms' ability to meet its short-term payment obligations. They indicate the sustainability of the firm: the better the liquidity, the higher the working capital solidity and the higher the growth opportunities. Liquidity ratios indicate whether the company can continue in the long run because a company which has issues in paying short-term obligations has a higher risk of ending up in bankruptcy. Liquidity ratios are current-, quick- and super quick ratios. (Goel 2015, 101.) Current- and quick ratios are more common, but the author decided to also include super quick ratio to highlight the importance of cash.

4.3.1 Current ratio

Current ratio places the company's current assets against its current liabilities. This ratio indicates how well current assets meet current liabilities. The higher the ratio the better: it implies that the firm has more current assets than current liabilities and the company should be able to pay its short-term debt obligations. Current ratio is described in formula 7.

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities.}} \tag{7}$$

Current assets include everything from inventory to cash and bank accounts. Current liabilities include all the short-term debts: accounts payables and so on. (Goel 2015, 101–102.)

Current ratio tests current assets against current liabilities and measures whether the company has enough assets to cover the debt obligations over the next 12 months. For example, if current ratio is 1.45 it means the company can pay its current liabilities 1.45 times over the next 12 months. Lenders usually prefer the ratio to be at least 1.2 before they consider giving a loan. Ratio which is close to or below 1 is a warning sign. Ratio below 1 means that current debt obligations exceed current assets, and the company operates with negative working capital. (Epstein 2012, 43–44.)

Even though Goel (2015) stated that the higher the ratio, the better, Epstein (2012) argues that ratio over 2 might indicate that the company uses its assets feebly. Investors prefer that spare assets would be used to grow the business or to pay dividends. Ratio too high might indicate that the company is not using assets to their full potential. In this type of situation, the company should consider investing some of its assets to long-term growth opportunities. (Epstein 2012, 44.)

4.3.2 Quick ratio

Quick ratio (or liquid ratio, acid-test ratio) measures the company's ability to survive from its short-term debt obligations a bit harsher than the current ratio. The numerator includes the same items than current ratio except the inventory. Inventory is left out because it can be difficult item to liquidate, especially during a downturn of the economy. Hence, the numerator includes accounts receivable + cash + bank balances + marketable securities. Current liabilities are the same as in current ratio. (Goel 2015, 102.) Quick ratio is described in formula 8.

$$\text{Quick ratio} = \frac{\text{Liquid assets}}{\text{Current liabilities.}} \tag{8}$$

Generally, company with ratio above 1 is consider healthy since it indicates that the company can pay its current bills with assets that can be easily converted into cash. If the ratio is below 1, the company might need to sell short-term investments, take on more debt or sell its inventory to pay its debts. (Epstein 2012, 44–45.)

As with any ratio, there are no fixed guidelines concerning the optimum value and the ratio should always be compared to the industry values. For example, in retail businesses ratio below 1 is common because they have large inventories. Reasons for the negative working capital should always be examined because the inventory might not be the only issue. Accounts receivables should also be investigated if they trend upward month after month. (Epstein 2012, 44–45.)

4.3.3 Super quick ratio

Super quick ratio (or cash ratio) is the most inflexible and extreme of the liquidity ratios because it includes only cash, bank balances and marketable securities compared to current liabilities. This ratio indicates the company's payment ability on an immediate basis because it includes items that are already in cash or can be easily used to pay short-term payments. (Goel 2015, 102.) The ratio is described in formula 9.

$$\text{Super quick ratio} = \frac{\text{Cash + bk. bal. + market. sec.}}{\text{Current liabilities.}} \quad (9)$$

According to the Ratiosys website (n.d.) super quick assets worth one half of the worth of current liabilities is sufficient or satisfactory. In other words, 1:2 or ratio of 0.5 is considered reasonable. This ratio is usually calculated just to give extra information about the company's liquidity. Super quick ratio is sometimes criticized of giving too much importance on cash. (Ratiosys n.d.)

4.4 Solvency ratios

Solvency ratios or leverage ratios measure the company's ability to pay long-term debts and interest on those debts. Solvency ratios are usually calculated to judge the financial risk and long-term survival of the company. They are also calculated to evaluate the company's funding strategy through equity and debt. Creditors and shareholders are usually the most interested in the company's solvency because it indicates whether the company can pay its debts in full. (Goel 2015, 143.)

4.4.1 Equity multiplier

Equity multiplier indicates the amount of equity which is used to finance the company's assets. High ratio means that larger portion of assets have been financed by debt and low ratio means that larger share of the assets are financed or owed by the shareholders. It is important to recall, that there is no unambiguous answer of how much assets should be financed by debt and equity. If, for example, it is cheaper to borrow than issue new shares, it might be more cost-effective to take more loan. Therefore, low equity multiplier is not automatically better than high. (Goel 2015, 145–146.) Equity multiplier is described in formula 10.

$$\text{Equity multiplier} = \frac{\text{Total Assets}}{\text{Owner's / Shareholder's Equity.}} \quad (10)$$

Generally, low equity multiplier is desirable because it means that the company is using more equity to finance assets. High equity multiplier might be a risk because if a company starts to struggle with generating profits from its core operations, it might have difficulties with repaying the debt and the financial costs related to that debt. However, if the company has cogently used its assets and makes enough profit to cover its debts, then taking a loan to finance an asset might be a good strategy. Still, this strategy might be risky if profits experience an unexpected drop. Despite this, low equity multiplier is not self-evidently a positive sign. It could also mean that lenders are unwilling to loan money for the company, which indicates that the company might be a risky investment. Low multiplier can also mean that the company has low growth prospects because it has low financial leverage. (Nickolas 2020.)

4.4.2 Debt ratio

Debt ratio measures the company's leverage and indicates how much total debt is used to fund assets. Debt ratio is a variation of the equity multiplier except that it includes long-term and short-term debts. If a company has a lot of debt as opposed to equity, the ratio will be high. This indicates that debt payments take a

remarkable cut of the company's cash flows and this could lead to eroded financial performance and a rise in interest rates which means that borrowing money becomes expensive. (Goel 2015, 143–144.) Debt ratio is described in formula 11.

$$\text{Debt ratio} = \frac{\text{Total debt}}{\text{Total assets.}} \tag{11}$$

According to Hayes (2020), a debt ratio which is considerably larger than 1, implies that the company's assets are heavily funded by debt. In other words, the company has more debt than assets which implies bigger financial risk. Nevertheless, leverage is also needed to enable growth, so once again, there is no rigid definition of right or wrong. A lot depends on the industry norms. For example, utilities sector has high debt ratios because it is a capital-intensive business where cash flows are stable. For businesses where cash flows are volatile, a high debt ratio might be a risk. (Hayes 2020.)

4.4.3 Debt-to-Equity ratio

Debt-to-Equity ratio is also a financial leverage measure. This ratio compares all the company's liabilities (not just debts) to its owner's (or shareholder's) equity. Lenders and investors use this ratio to judge how the company allocates its debt in relation to equity. The formula is described in formula 12.

$$\text{Debt-to-Equity ratio} = \frac{\text{Total Liabilities}}{\text{Owner's / Shareholder's Equity.}} \tag{12}$$

According to Epstein (2012), a ratio greater than 1 means that majority of the company's activities are financed by liabilities. If the ratio is below 1, it means that investors are carrying the bigger burden in the funding of the business. If the ratio goes higher and higher, the lenders will not most likely grant a loan, or if they will, it will be with high interest rates. The Debt-to-Equity ratio is a measurement of a risk to the lenders but for investors it reveals whether the company has leveraged its assets correctly. (Epstein 2012, 45–46.)

5 FINANCIAL RATIO ANALYSIS OF THE CASE COMPANY

5.1 Profitability analysis

The case company's profitability is described in figure number 5 below this paragraph. The author concluded that the profitability ratios are more perceivable if they are described in the same figure. The analyses of the ratios are in the upcoming chapters, after the profitability figure, starting from operating profit ratio to net profit ratio and finally to operating ratio. The analysis consist of three parts: first the author will make some general observations about the ratio, then the author will compare the case company's result to the median results of other health service sector and beaty service sector and finally the author will examine the results by using time series analysis.

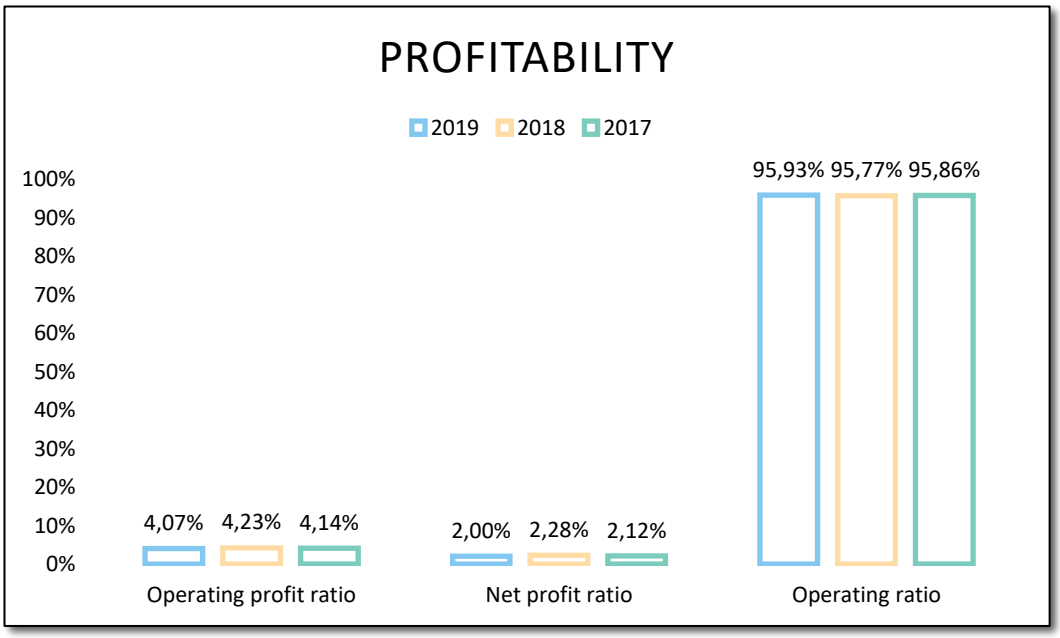


FIGURE 5. The case company's profitability in years 2017–2019 (Appendix 1)

5.1.1 Operating profit ratio analysis

The case company's operating profit ratio has varied a bit between 4,07% and 4,23% in years 2017 to 2019. Based on the positive operating profit ratios, the company has been able to generate profits from its core business activities in

every fiscal year. On average, the company has earned 0,0414 euros on each euro of sale before interest and taxes have been deducted.

The operating profit ratio has been quite low in every year, which according to Seppänen (2011), could be a result of large amount of competition in the field. Usually in industries where competition is intense, the operating profit ratios are only couple of percentages. (Seppänen 2011,75.) This is the case in the commissioner's business. Sormunen (2017) has written in her article that barber shops, beauticians, masseurs and restaurants are in fact, operating in such competitive industry, that often they are not even permitted a startup grant. This is because it would otherwise corrupt the competitive situation in the field. (Sormunen 2017.)

According to the Työ- ja elinkeinoministeriö statistics (2020), the median operating profit ratio of other health service sector has been 1,0% in years 2018 and 2017. The median of beaty service sector has been 3,0% in 2018 and -3,3% in 2017. For both sectors, the median statistics of 2019 has not been published yet. (Työ- ja elinkeinoministeriö 2020.) These medians also verify, that the competition in both fields is intense and the margins are relatively small and volatile. Based on these medians and the nature of the industries, the case company has relatively good or sufficient operating profit ratio. The operating profit ratio medians can be seen from the table below.

TABLE 5. Operating profit ratio median statistics (Työ- ja elinkeinoministeriö 2020)

Operating profit ratio median statistics	2019	2018	2017
Other health service sector	Not determined yet	1,0 %	1,0 %
Beauty service sector	Not determined yet	3,0 %	-3,3 %

According to the figure 5, the case company's operating profit ratios have fluctuated a bit between years 2017 and 2019, but, in comparison to the nature of the fields, the results have been quite constant. Nevertheless, the commissioner should survey the operating profit ratio closely, because if the margin drops considerably, it means that most likely some variable cost(s) has or have increased.

Other factors that might impact negatively to the operating profit ratio are poor pricing strategy and insufficient management.

The case company could monitor the growth of operational expenses in relation to the growth in sales revenue. For example, in 2019 the company's sales revenue grew by 4,6% and operational expenses grew by 4,8%. This indicates that the growth of operational expenses surpassed the revenue growth, and the benefit of the revenue growth was lost. It implies that the case company should better control its costs if it wants to operate successfully. It is normal that operational expenses increase by some amount when the sales revenue increases because operational expenses include variable costs which change along the production output. Still, the company should look over its cost structure, the management of its costs and possibly its pricing strategy.

5.1.2 Net profit ratio analysis

Based on the positive net profit ratios of years 2017 to 2019, the company has been able to cover all its expenses with the sales revenues that it has generated from its core business activities. This is a positive sign because it indicates that the company has not had to rely on external funding to keep the business activities going. It also implies that the company has had some control over its costs. On average, the company has earned profits of 0,0213 euros per one euro of sales after all the expenses have been deducted.

According to the Työ- ja elinkeinoministeriö statistics (2020), the median net profit ratio of other health service sector has been 0,0% in year 2018 and 0,9% in 2017. The median net profit ratio of beauty service sector was 0,0% in 2018 and –5,7% in 2017. The median of the year 2019 has not been published yet for either of the sectors. (Työ- ja elinkeinoministeriö 2020.) Based on these medians, the case company has performed better than the companies operating in these industries in general in years 2017 and 2018. It also indicates that the company's margins are moderate and that it can operate with these margins. The medians of the two industries are listed in the table below.

TABLE 6. Net profit ratio median statistics (Työ- ja elinkeinoministeriö 2020)

Net profit ratio median statistics	2019	2018	2017
Other health service sector	Not determined yet	0,0 %	0,9 %
Beauty service sector	Not determined yet	0,0 %	-5,7 %

According to the figure 5, the case company's net profit ratios have varied a bit during years 2017 to 2019. The commissioner should monitor the net profit ratio carefully, because if it drops drastically, then most likely the company has weakened changes to operate in the long run and to grow and expand its business. Therefore, it is necessary that the margins would grow over time.

5.1.3 Operating ratio analysis

As it can be seen from the figure 5, in every fiscal year, most of the sales revenues, almost 96 percent are used to cover the cost of goods sold and the other operational expenses. These expenses therefore erode most of the revenues. As explained in the chapter 1.1.4 of chapter 4, operating ratio indicates the company's ability to generate profits if revenues decrease. Based on the commissioner's operating ratios and the other profitability ratios, the company has little changes to make profit if sales decline. This is a risk because the industries in question are volatile and highly competitive.

There are no median statistics of operating ratio and it would be quite unnecessary to compare the company's operating ratio to median statistics of the two industries, because for example the beaty service sector is so diverse and offers such versatile commodities that companies have very different costs items and levels of costs. However, in future, it would be wise for the commissioner to compare its operating ratio to its competitor's operating ratio.

As with the other profitability ratios, the commissioner should carefully monitor the operating ratio and consider making some adjustments to its operational expenses and/or to its pricing strategy. If the commissioner could decrease or better

manage its operational expenses and/or increase prices, the company would become less depended on the sales and it would operate more economically.

5.2 Liquidity analysis

The case company's liquidity is presented in figure 6. The author concluded that liquidity ratios are more perceivable when presented in the same figure. The analyses of the liquidity ratios become after the figure, starting from current ratio.

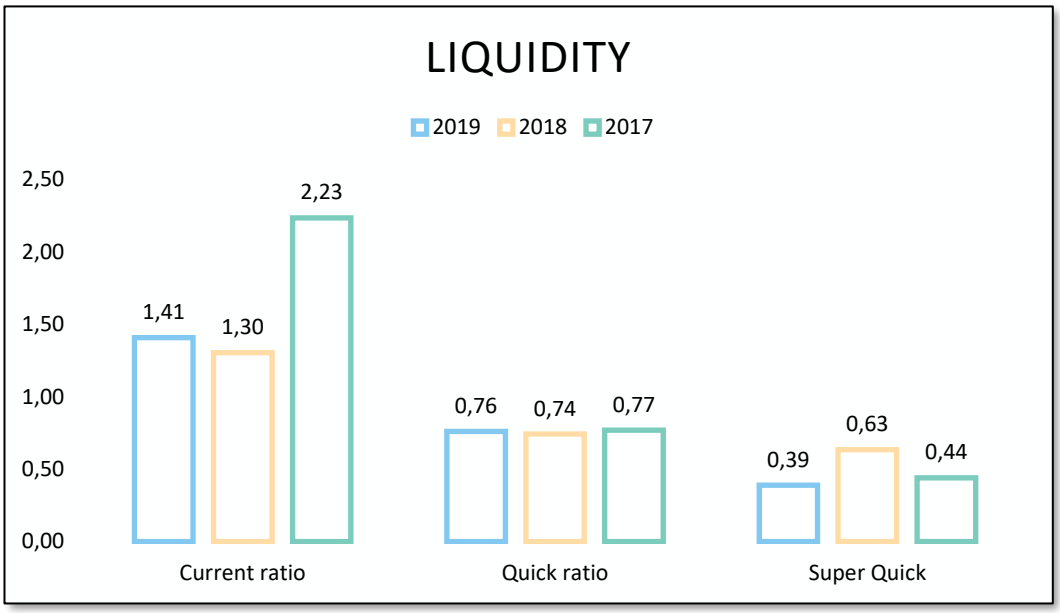


FIGURE 6. The case company's liquidity in years 2017–2019 (Appendix 2)

5.2.1 Current ratio analysis

Based on the company's current ratios, the company has had more current assets than current liabilities in every fiscal year, which is a good sign because it indicates that the company does not operate with a negative working capital. The average current ratio is 1,65 which means that the company could have paid all its current liabilities 1,65 times over the 12 months with its current assets.

Based on the total amount of current assets in the company's balance sheet, the company's operational activities does not tie a lot of capital in terms of inventory,

accounts receivables and cash. This is good because it indicates that the company's operational activities does not demand excessive amount of resources. Particularly inventories and accounts receivables should be kept as low as possible, in which the commissioner has succeeded quite well.

The median current ratio of other health service sector has been 1,0 in year 2018 and 1,3 in 2017. The median current ratio of beauty service sector was 1,2 in 2018 and 1,4 in 2017. The median of the year 2019 has not been published yet for either of the industries. (Työ- ja elinkeinoministeriö 2020.) The medians are presented in the table 7.

TABLE 7. Current ratio median statistics (Työ- ja elinkeinoministeriö 2020)

Current ratio median statistics	2019	2018	2017
Other health service sector	Not determined yet	1,0	1,3
Beauty service sector	Not determined yet	1,2	1,4

Based on the medians, the case company has had bit more positive working capital than the two industries in general in years 2018 and 2017. From these medians we can also conclude that on average, the companies working in these fields operate with quite low working capital. It is also important to recall, that positive current ratio does not necessarily mean that the company is solvent, because the money can be tied in inventory, which is usually difficult to liquidate. For example, in beauty service sector some companies can have extensive inventories which can elevate the current ratio.

Current ratio (and liquidity ratios generally) are not so effective to be used in times series analysis because they only reflect the one situation in the past. However, if the current ratio grows drastically, the reason can be worthwhile to investigate. For example, the reason why the current ratio has been so high in 2017 results from quite high levels of inventory and low amount of current liabilities. If the 2017 current ratio is compared to 2017 quick ratio, we can see that the solvency of the company was not better, it only had larger inventories in comparison with current liabilities.

5.2.2 Quick ratio analysis

The average quick ratio of the company is 0,75 which indicates that the company is not able to pay its current liabilities with assets that can be easily converted into cash. It means, that the company might have issues with paying its bills and it might have to sell inventories, take on more debt or postpone some payments to survive from its payment obligations.

The median quick ratio of other health service sector has been 1,0 in year 2018 and 1,2 in 2017. The median quick ratio of beauty service sector was 0,7 in 2018 and 2017. For both industries, the median of the year 2019 has not been published yet. (Työ- ja elinkeinoministeriö 2020.) According to these medians, which can also be seen from the table 8, the case company has not performed better than the beaty service and other health service sectors generally.

TABLE 8. Quick ratio median statistics (Työ- ja elinkeinoministeriö 2020)

Quick ratio median statistics	2019	2018	2017
Other health service sector	Not determined yet	1,0	1,2
Beauty service sector	Not determined yet	0,7	0,7

The case company's quick ratios have been steady in years 2017-2019. However, it is still worthwhile to observe the company's balance sheet and to glance if there are some deviant numbers. For example, in 2019 the company has had account receivables worth of 200e, which is relative high amount for such a small company. If the account receivables are trending upwards, the commissioner should consider what payment terms are appropriate and consider how the debt collection is taken care of to avoid missing or delayed payments.

5.2.3 Super quick ratio analysis

As explained in chapter 1.1.5 of chapter 4, super quick ratio is often calculated just to provide extra information about the company's payment ability. There are no median statistics of super quick ratio but according to the Ratiosys website (n.d.) a ratio of 0.5 is considered sufficient (Ratiosys n.d).

The average super quick ratio of the company is 0,48 which according to the theoretical benchmark is acceptable. However, the company rarely has large amounts of account receivables and most of the customers pay immediately, it therefore indicates that the company has relatively poor chances to pay its bills on an immediate basis.

Based on these three liquidity ratios, the company has issues with its payment ability. From the balance sheet items, the author could not find any root problems because according to the sums of the current assets, the company's operations does not require lots of capital in terms of inventory, accounts receivables and cash, so the company can operate with quite low levels of working capital. The author thinks that the company's issues with profitability causes issues with liquidity as well.

5.3 Solvency analysis

The case company's solvency has been divided into three separate figures which are presented in their own chapters. The solvency analysis begins with equity multiplier, followed by debt ratio analysis and Debt-to-Equity ratio analysis.

5.3.1 Equity multiplier analysis

The average equity multiplier of the case company is 3,16 which means that on average, around 32% of the company's assets are financed with equity, remaining with debt. 30% of assets were financed with equity in 2017 and in 2019 the company financed its assets with around 35% of equity. These ratios indicate that larger portion of assets have been financed by debt in every fiscal year. The case company's equity multipliers from years 2017–2019 can be seen from the figure 7.

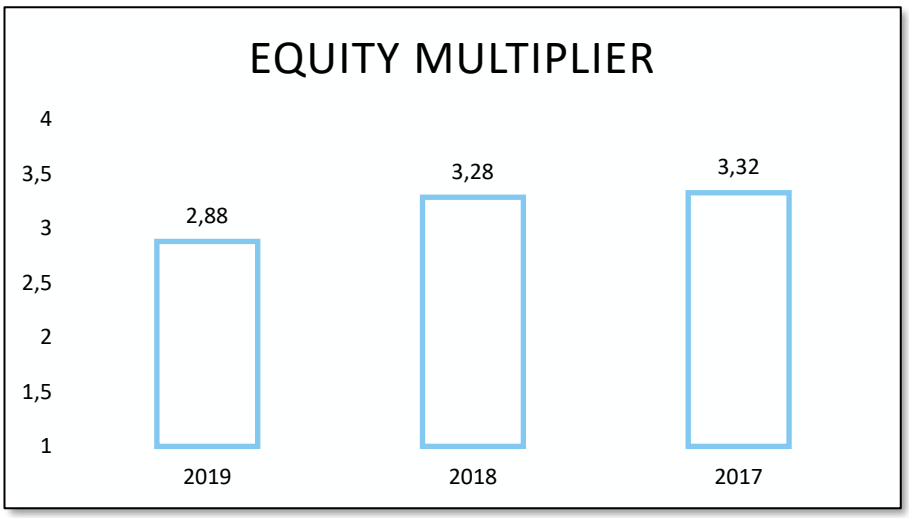


FIGURE 7. The case company's equity multiplier in years 2017–2019 (Appendix 2)

Based on the total amount of assets in the company's balance sheet, the company's operations does not require lots of capital. In other words, the company has been able to generate sales revenue with quite low resources. The company has little fixed assets to be used in operations and similarly the company's operations tie only small amount of fixed assets. The sum of current assets, as described in previous chapters, indicate that not a lot of current assets are tied to the operational activities. This is partially good because it means that the company uses its assets effectively and is able to generate relatively high amount of revenues with them. On the other hand, it might be difficult to grow the business with this amount of assets. Maybe an increase in assets would increase the sales revenue and improve the profitability and liquidity of the company.

The median equity multiplier (omavaraisuusaste) of other health service sector has been 3,1% in year 2018 and 20,2% in 2017. The median equity multiplier of beauty service sector was 7,8% in 2018 and 8,8% in 2017. The median of the year 2019 has not been published yet for either of the industries. (Työ- ja elinkeinoministeriö 2020.) These medians, which can also be seen from the table 9, indicate that companies operating in these fields have large amount of debt in relation to equity and they are therefore extremely leveraged. The case company has performed better than the companies operating in these industries with the average equity multiplier of 32%.

TABLE 9. Equity multiplier median statistics (Työ- ja elinkeinoministeriö 2020)

Equity multiplier / Omavaraisuusaste	2019	2018	2017
Other health service sector	Not determined yet	3,1 %	20,2 %
Beauty service sector	Not determined yet	7,8 %	8,8 %

The case company's equity multiplier has decreased over the years, which is good, because the industries were the business operates are highly competitive, so low equity multiplier operates as a buffer if profitability decreases. According to the Alma Talent's (n.d.) theoretical values, equity multiplier of 25–35% is considered sufficient, which is the category where the case company belongs to. The beaty service and other health service sectors would belong to "weak" category with under 15% equity multiplier. (Alma Talent n.d.)

5.3.2 Debt ratio analysis

The case company's debt ratios in years 2017–2019 can be seen from the figure 8. As described in chapter 4.4.2 of chapter 4, debt ratio is a variation of the equity multiplier, so they offer similar information. For example, in 2019 the company funded 64% of assets by long-term and short-term debts.

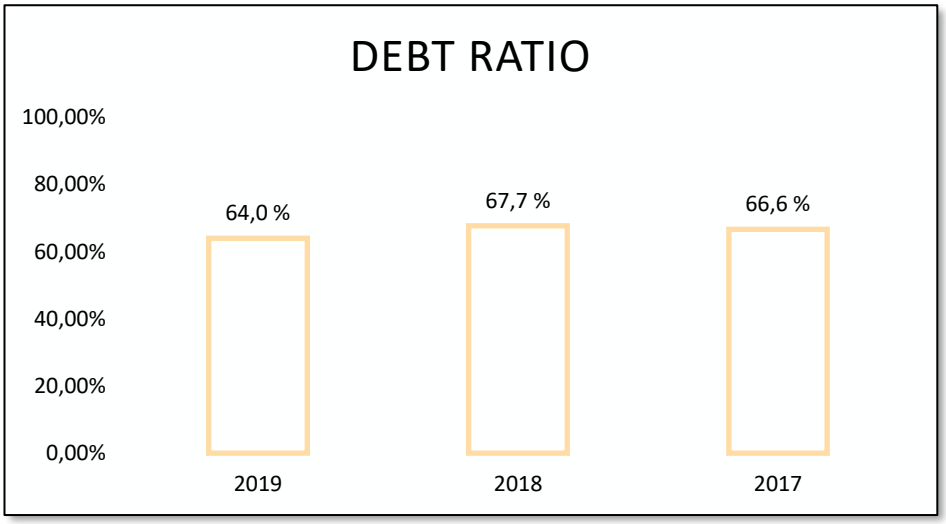


FIGURE 8. The case company's debt ratios in years 2017–2019 (Appendix 2)

Based on the equity multiplier and the debt ratio, the case company has financed its assets with approximately 32% of own equity and 68% of debts. Based on the

Työ- ja elinkeinoministeriö (2020) equity multiplier/omavaraisuusaste median statistics, the case company has invested more own equity into the business than the companies operating in the industries in general (Työ- ja elinkeinoministeriö 2020).

The trends of the equity multiplier and the debt ratio are both downwards, which is a good sign, because it indicates that the company is less leveraged which operates as a buffer against indebtedness. However, leverage is also needed for expansions and investments. The case company has issues with profitability and liquidity so there are slight possibilities for the company to grow its business without external funding. However, it is likely that the commissioner would not be granted for a new loan, or if it would, it would have so high interest rates that the commissioner could not afford it. Therefore, even though the trends of the ratios are downwards, it does not mean that the company has good chances to operate in the long run.

By looking at the sums of the liabilities and the owner's equity in the company's balance sheet, the author concludes that the company's operations and investments have required quite little external and internal funds, same way as the operations have required little assets. This also indicates that the company is able to run its business with low levels of capital, but it is simultaneously highly dependent on the sales revenue which is the engine of the business. Because the case company's margins are low and the demand in the operational fields are shifty, this strategy is not very good on a long-range.

5.3.3 Debt-to-Equity ratio analysis

Debt-to-Equity ratio provides information about risks involved in funding the business with external capital. The case company's Debt-to-Equity ratios in years 2017–2019 is described in figure number 9.

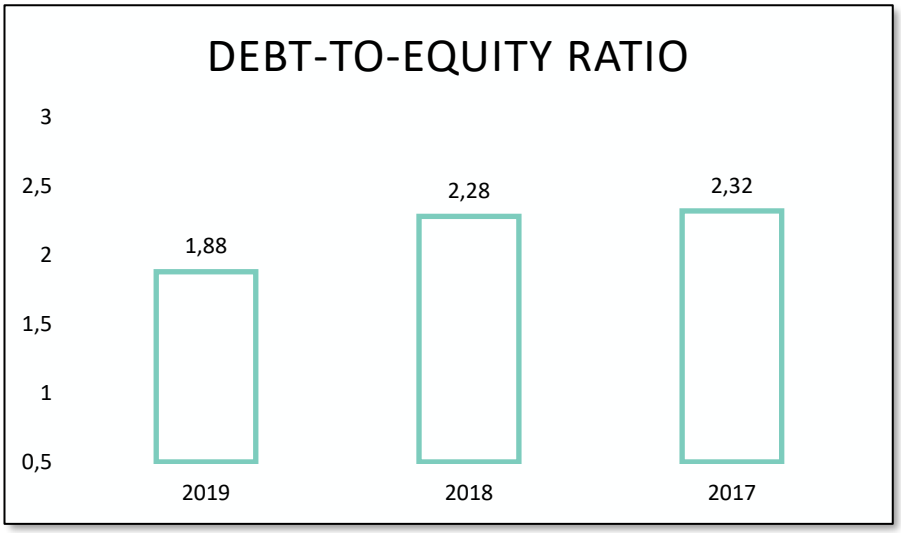


FIGURE 9. The case company's Debt-to-Equity ratio in years 2017–2019 (Appendix 2)

Even though the trend of the Debt-to-Equity ratio is as well downwards, it still indicates that the case company has financed most of its activities or growth by liabilities. For example, in 2019, for every 1,88 euros the company used liabilities, it used 1e own equity. Therefore, the creditors are carrying the bigger financial burden in funding the business.

This ratio, together with the other solvency ratios, prove that the case company has little chances to be granted for a new loan which results in small growth and investment prospects. Most likely, if the case company would be more profitable and have better liquidity, it would be able to invest more own equity into the business and be granted for a new loan which would enable investments in assets to be used to grow the business.

5.4 Overall judgement of the case company's financial performance

Based on the profitability ratios (figure 5), the company has been able generate enough profits from its core business activities to cover all its necessary expenses in every fiscal year. The profitability margins have been relatively small which results from large amount of competition in the field. Despite the tough competi-

tion, the company has been more profitable than generally the companies operating in the same field. Therefore, the author concludes that the margins are sufficient for the company to run its daily operations.

Volatile demand is typical for this type of industries, and the case company is relatively depended on the sales revenue. This is a risk because if the sales decline, the company might have issues with ability to pay its bills. This risk can also be seen from the liquidity ratios (figure 6). It is common for the beaty service sector and other health service sectors, that companies are operating with low working capital. The case company has relatively low levels of inventories, but it also has small amount of cash and other liquid assets. Therefore, it is likely that the company can not meet its payment obligations on an immediate basis. The author concludes that the issue is with the profitability. The profitability margins are moderate, but they do not support the company in the long run.

Most of the case company's sales revenues are eroded by the operational expenses, which is why the company has small chances to grow its business by using internal funds. Also, if the demand drops or there would be new market areas for the company to enter, most likely the company could not react to it because it does not have enough working capital. Particularly in beaty service sector, it is necessary that companies can react to sudden changes in demand. For example, if customers are starting to favor more ecological products over old ones, does the company have enough resources to answer to the new demand?

The solvency of the case company is at sufficient level. The equity of the business has been growing throughout the fiscal years and the amount of debt used in funding of the business have decreased. The case company has performed better than the beaty service sector and other health service sectors in general. According to the median statistics, companies operating in these sectors are extremely leveraged which luckily, is not the case in the commissioner's business. Despite this, when considering the risks related to the company's profitability and liquidity, the company has poor changes to expand and grow, because it does not have enough capital and most likely it can not afford to take new loans.

In summary, the case company's strengths are that it generates enough profits from its core activities, so it does not have to rely on external funds to keep the business operations going. Also, the solvency of the business is at sufficient level, which protects the company from the risk of high indebtedness. The case company can survive with this current strategy because it does have some control over its costs since all stakeholders are paid with the sales revenues. Therefore, the actual business is not at high risk to collapse.

The operational expenses are one weakness of the case company since they corrode almost all the sales revenues. The case company is highly depended on the customers (sales revenue) which is a risk in this type of industries where demand and cash flows are volatile. These factors lead to issues with ability to pay bills and garnering internal funds which could be used to develop the business. The biggest weakness is that the company has inadequate resources to expand and to grow its business.

In figure number 10 is illustrated how the author sees the case company's financial issues. As said in previous chapters, the author thinks that decrease in operational costs and thinking through the pricing strategy would improve the company's profitability and liquidity. When the company is more profitable, it will also accumulate the owner's equity. Better profitability and increase in liquidity and in owner's equity would help the company to receive new long-term liabilities which means that the company has more capital which it could invest in long-term assets and to grow the company.

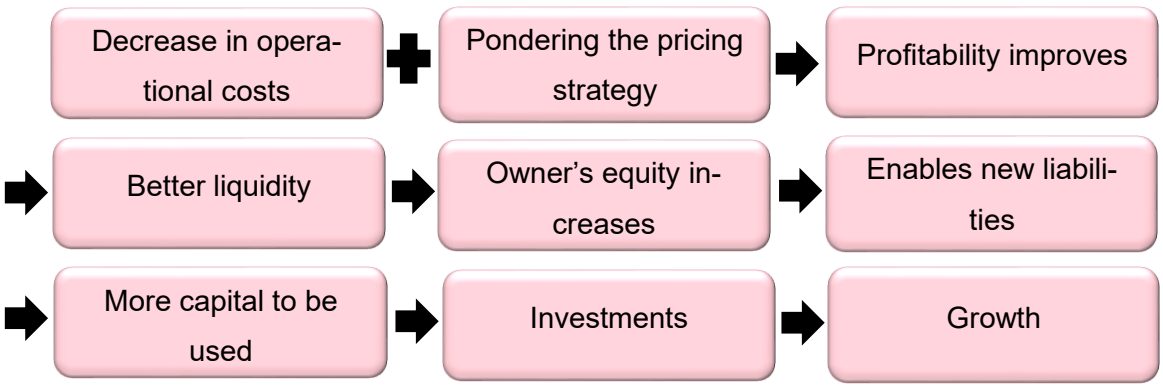


FIGURE 10. The author's conclusion of the case company's financial dilemma

6 THE EXCEL MODEL

6.1 Independent and dependent variables

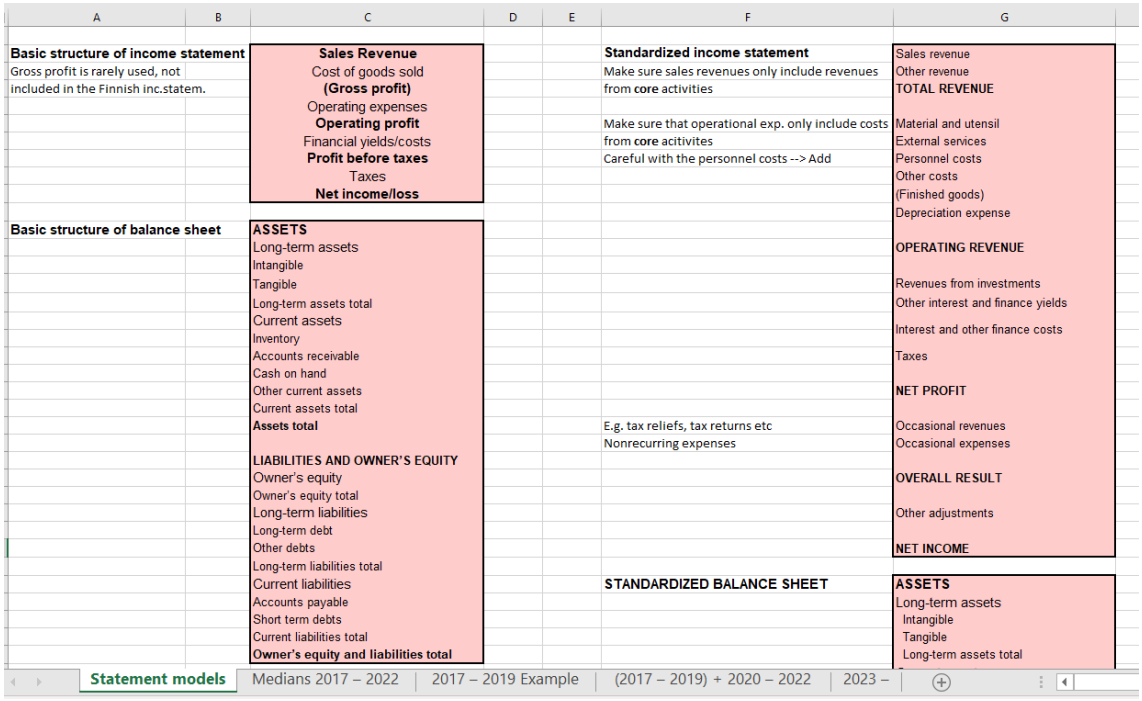
The user of the Excel model needs to recognize what are the independent and dependent variables of the model to understand how the model works. Independent variables are input or external variables; values which the user inputs and which are not calculated by the model. Parameters are also independent variables: their values are provided by the user, but their values change infrequently. Dependent variables are values calculated wholly by the model and they are often the output variables of the models. Some dependent variables can also be intermediate variables which are calculated to be used in other calculations. The basic principle of any model is to observe how the output variables change with the changes in independent variables. Independent variables are changed to ask "what if" questions and the dependent variables are the answer. (Sengupta 2009.)

In the author's Excel model, the financial statement items are independent variables and the financial ratios are dependent variables. For example, net profit is an intermediate variable which can be changed to ask what if questions and the net profit ratio is an answer to that question.

6.2 What the Excel model is like

The commissioner wished for a simple structured model which would not require much from her except filling the needed independent variables. She also added that the model should be protected so that she can not accidentally change or delete important parts of it.

The Excel tool has different tabs. The first tab repeats the structures of income statement and balance sheet, so that the commissioner can revise the basic and standardized structures of the statements. The author has also written notes about the most important parts of the statement, which the commissioner should remember when filling variables into the Excel model. Below is a screenshot of the first tab of the Excel tool.



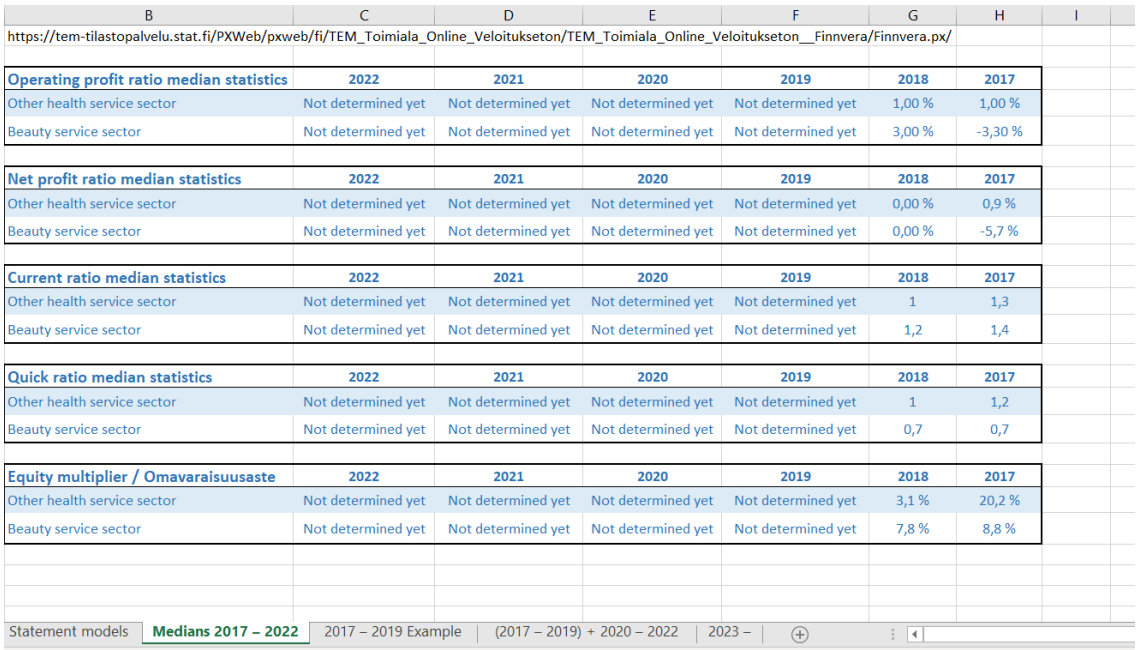
Basic structure of income statement	**Sales Revenue**	**Standardized income statement**
Gross profit is rarely used, not	Cost of goods sold	Make sure sales revenues only include revenues
included in the Finnish inc.statem.	**(Gross profit)**	from **core** activities
	Operating expenses	
	Operating profit	Make sure that operational exp. only include costs
	Financial yields/costs	from **core** acitivites
	Profit before taxes	Careful with the personnel costs --> Add
	Taxes	
	Net income/loss	
Basic structure of balance sheet	**ASSETS**	
	Long-term assets	
	Intangible	
	Tangible	
	Long-term assets total	
	Current assets	
	Inventory	
	Accounts receivable	
	Cash on hand	
	Other current assets	
	Current assets total	
	Assets total	E.g. tax reliefs, tax returns etc
		Nonrecurring expenses
	LIABILITIES AND OWNER'S EQUITY	
	Owner's equity	
	Owner's equity total	
	Long-term liabilities	
	Long-term debt	
	Other debts	
	Long-term liabilities total	
	Current liabilities	**STANDARDIZED BALANCE SHEET**
	Accounts payable	
	Short term debts	
	Current liabilities total	
	Owner's equity and liabilities total	

Sales revenue
Other revenue
TOTAL REVENUE
Material and utensil
External services
Personnel costs
Other costs
(Finished goods)
Depreciation expense
OPERATING REVENUE
Revenues from investments
Other interest and finance yields
Interest and other finance costs
Taxes
NET PROFIT
Occasional revenues
Occasional expenses
OVERALL RESULT
Other adjustments
NET INCOME
ASSETS
Long-term assets
Intangible
Tangible
Long-term assets total

Statement models | Medians 2017 – 2022 | 2017 – 2019 Example | (2017 – 2019) + 2020 – 2022 | 2023 –

PICTURE 1. First tab of the Excel model

From the next tab of the tool the commissioner can revise the median statistics of the two industries where the case company operates. The author has made the table for the next three fiscal years, but the commissioner can always add more sections in it if she finds the statistics interesting. The link to the webpage from where to find the statistics is also added.



https://tem-tilastopalvelu.stat.fi/PXWeb/pxweb/fi/TEM_Toimiala_Online_Veloitukseton/TEM_Toimiala_Online_Veloitukseton__Finnvera/Finnvera.px/

Operating profit ratio median statistics	2022	2021	2020	2019	2018	2017
Other health service sector	Not determined yet	Not determined yet	Not determined yet	Not determined yet	1,00 %	1,00 %
Beauty service sector	Not determined yet	Not determined yet	Not determined yet	Not determined yet	3,00 %	-3,30 %

Net profit ratio median statistics	2022	2021	2020	2019	2018	2017
Other health service sector	Not determined yet	Not determined yet	Not determined yet	Not determined yet	0,00 %	0,9 %
Beauty service sector	Not determined yet	Not determined yet	Not determined yet	Not determined yet	0,00 %	-5,7 %

Current ratio median statistics	2022	2021	2020	2019	2018	2017
Other health service sector	Not determined yet	Not determined yet	Not determined yet	Not determined yet	1	1,3
Beauty service sector	Not determined yet	Not determined yet	Not determined yet	Not determined yet	1,2	1,4

Quick ratio median statistics	2022	2021	2020	2019	2018	2017
Other health service sector	Not determined yet	Not determined yet	Not determined yet	Not determined yet	1	1,2
Beauty service sector	Not determined yet	Not determined yet	Not determined yet	Not determined yet	0,7	0,7

Equity multiplier / Omavaraisuusaste	2022	2021	2020	2019	2018	2017
Other health service sector	Not determined yet	Not determined yet	Not determined yet	Not determined yet	3,1 %	20,2 %
Beauty service sector	Not determined yet	Not determined yet	Not determined yet	Not determined yet	7,8 %	8,8 %

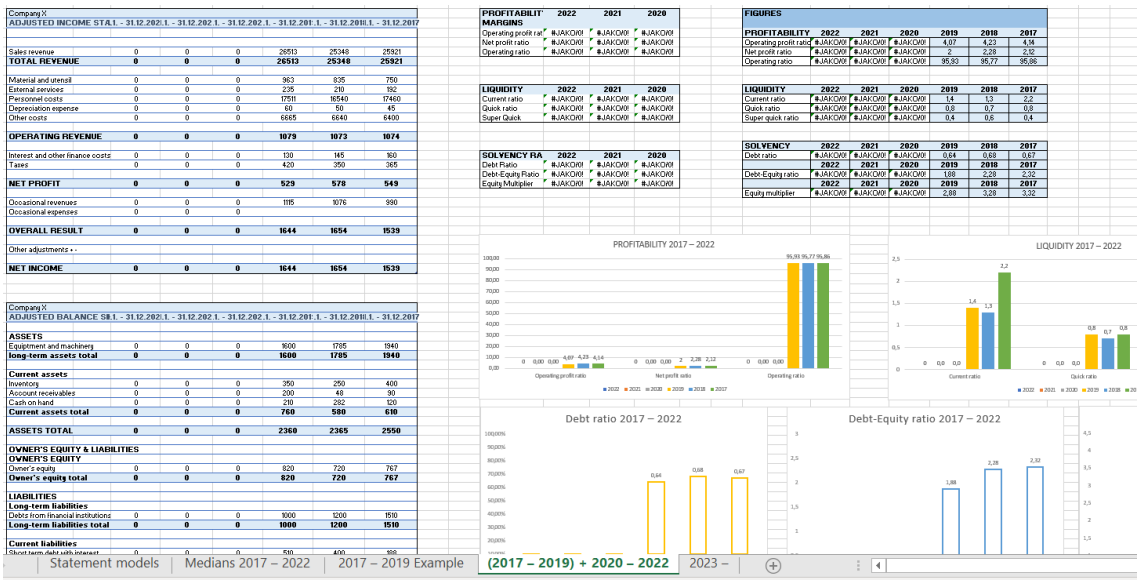
Statement models | Medians 2017 – 2022 | 2017 – 2019 Example | (2017 – 2019) + 2020 – 2022 | 2023 –

PICTRUE 2. Second tab of the Excel model

The 2017–2019 fiscal years which were used in the author's financial ratio analysis, are also in the Excel tool, but the tab is protected so that the user can not make any changes to it. This is because the tab is meant to serve as an example for the user and if the user happens to delete some parts of the other tables etc., it can be fixed by copying the information from the 2017–2019 example tab.

In picture 3 is a screenshot of the actual model to be used in upcoming financial analysis. The standardized financial statements are on the left side and the ratios and the figures are on the right side. The commissioner and the author together discussed that it would be worthwhile to do another time series and cross-sectional analysis by using longer timeline. Therefore, this tab includes financial information from years 2017 to 2022.

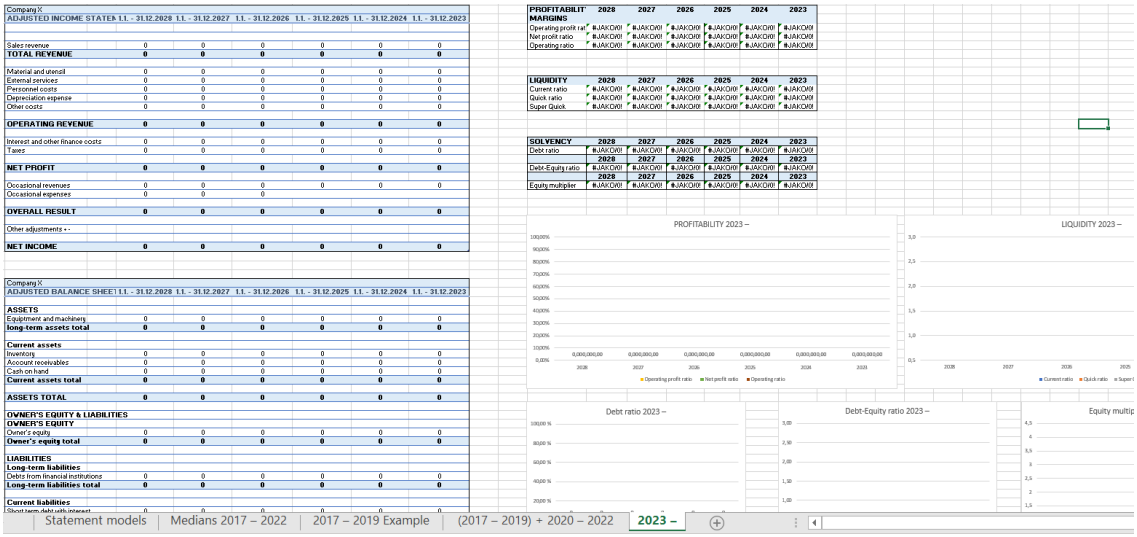
The needed formulas have been inputted by the author, so the user needs to only feed the correct independent variables into the financial statement tables. Therefore, the user of the model is responsible of entering adjusted and correct values into the statements or otherwise the results might not be comparable.



PICTURE 3. Fourth tab of the Excel model

Financial analyses starting from the year 2023 can be seen from the tab "2023 – ". The tables are made for years 2023 to 2028 but the commissioner can always add more sections into the tables or alternatively make another tab and copy all

the tables from the previous tab so that the formulas preserve. In picture 4 is a screenshot of the 2023–2028 model.



PICTURE 4. Fifth tab of the Excel model

6.3 Testing the model

According to Sengupta (2009), models often have bugs which can be difficult to notice if the model is not tested with different methods. Despite the test approach, the user should always first understand the basic principle of the model, because it is then easier to solve the possible bugs. Methods to track down possible bugs include the following:

- Understand the relationship between independent and dependent variables: test the tool by changing independent variables and observe if it affects the dependent variables correctly. Hint: use this approach to hunt down the possible root problem.
- Compare the Excel model's dependent variables to manual calculations.
- Use variety of input values: some values or combinations of values might cause problems.

  (Sengupta 2009.)

The author tested the model by comparing the Excel tools results to hand-calculated answers. This approach was used because the model is relatively simple

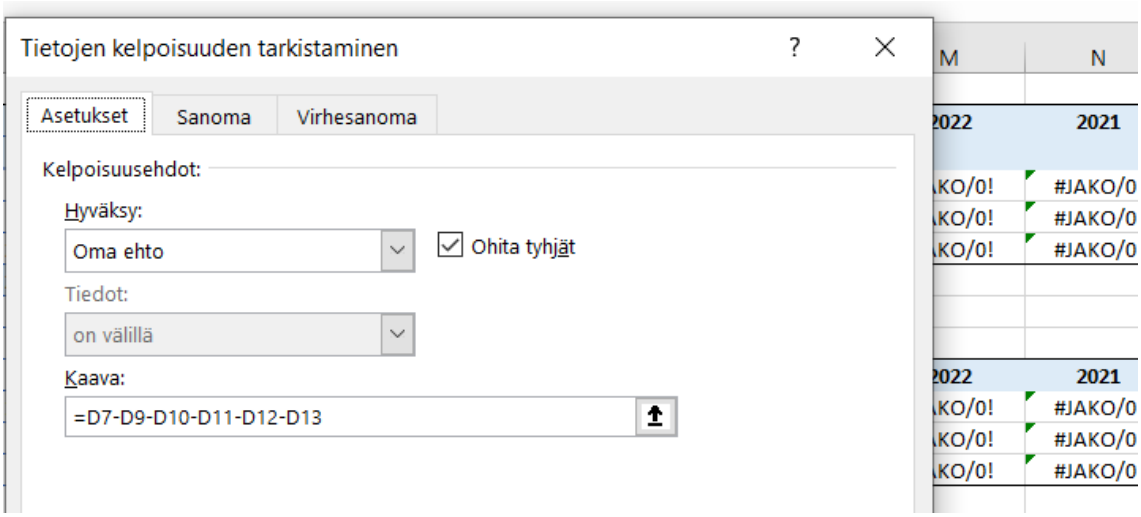
structured. This approach was successful because often there were typos in the formulas which of course falsified the ratios as well. Because the model is quite simple, it was easy to find the incorrect input value.

The author also checked that the build models will work in future. For example, that 2020–2022 upcoming ratios will appear to the chart when the required independent variables are inputted.

6.4 Protecting the model

The “statement models” tab and the “2017–2019 Example” tab are both protected with a password so that the user can not modify them unless entering the password. This is only to secure that the user could not accidentally delete or change any parts of the tables because they serve as an example. By entering the password, the user can make changes. Both the author and the entrepreneur have the password.

The formulas are also protected so that the user can not manually enter values into them. This setting has been made to minimize the accidents. The cells accept only the fed formula. Below is a screenshot of a one setting.



PICTURE 5. Picture of how the formulas are protected

6.5 The areas of responsibility of the model

The entrepreneur is responsible for entering correct information into the model, for updating the model and for protecting the model. The author is accountable for securing that the model works and that it serves the needs of the case company. If the model does not work as planned, then the entrepreneur should contact the author who should make the applicable changes. If the model turns out to be unergonomic, then the commissioner and the author should discuss about the needed repairs.

6.6 Author's evaluation of the model

As discussed in the chapter 2.6 of chapter 2, constructive research approach, which was used in this Excel tool, can be outlined by diving it into phases:

1. Find a problem which is relevant and has research potential
2. Gain general and extensive knowledge about the topic
3. Innovate solution(s) which is/are relevant, simple and easy to use
4. Demonstrate that the solution works
5. Present the theoretical connections
6. Examine the solution's scope of applicability
7. Present the new problems which originated from the research

(Kasanen, Lukka & Siitonen 1993, 243–246.)

Fundamentally, this criteria is an outline of the whole thesis because it starts from developing the research question, then the author has familiarized herself with the financial ratio analysis topic, then the author has developed the tool (solution), demonstrated its functionality by performing the analysis and combined the theory and practice. Therefore, the phases from one to five have been fulfilled in this case.

Basically, the author's Excel model should also work for other similar companies than the case company because the tool is not contingent on the company. Only if the company's financial statements include a lot of different items than the case

company's, then the model needs to be modified. Also, like emphasized in previous chapters, not all ratios are applicable for all companies, so the business models should be similar for the model to work. Otherwise, the tool should work for other similar companies. Therefore, also the sixth criteria of the constructive research approach have been fulfilled.

From this research the author and the commissioner both realized that the case company needs some kind of a financial plan because the company has issues with its profitability. This research revealed the profitability issue, and the new problem or question is how to improve this fault. Therefore, also the seventh phase of the criteria is fulfilled.

Based on the theory, the Excel tool is functional, and it has all the necessary elements. The commissioner wished for a model which would not require much from her and that the model would be protected so that she can not accidentally harm it. Also based on these wishes, the tool is sufficient.

6.7 How could the user utilize the build model in other analyses

This research evoked a new research question: how can the case company improve its profitability? If the case company would start to control its profitability, it could use the financial information from the build Excel model and formulate plans according to that data. The user could also change the independent variables of the model to ask "what if" questions and set target values based on the results. Also, because the author used profitability, liquidity and solvency ratios in her analysis, the user can quickly observe from the figures how changes in the profitability improve or deteriorate other ratios as well. Therefore, the build Excel model can be utilized for example in budgeting, planning or controlling. Only the purposes and benchmarks of the analysis would change.

7 DISCUSSION

The thesis topic was to establish a handbook and an Excel tool for the case company so it could evaluate its financial performance. The handbook included concepts about financial statements and theories about financial ratios and a financial ratio analysis of the commissioner's three previous fiscal years. The Excel tool was tested in the author's analysis and it was made for the case company so it could begin financial analyses. The research question was: "how can the case company evaluate its financial performance?" and the objective of this thesis was to investigate how financial ratios and Excel models can be used to evaluate the financial performance of the company and to also inspire the commissioner to start financial monitoring. Thesis purpose was to demonstrate how financial ratios and Excel models are used in financial analyses.

To gain knowledge about financial ratio analysis, the author familiarized herself with scientific literature as secondary data. From the theoretical framework the author learned that financial ratios are complex measurement tools and that they should not be used without studying them first carefully. Financial ratios are efficient tools, but if the user is not familiar with all the key theories involved, the analysis' results might not be reliable.

Common issues with financial ratios include the following: vast amount of information available which might not be relevant for the particular user, their versatile usage in different context, that most ratios do not have any unambiguous construct and that their result or values depend on the context; there are no fixed standards of good, normal or bad value and that single ratios do not identify anything, so the user should always use many kinds of ratios. Therefore, the user is self-responsible of what to make of the results. In addition, no single ratio can represent the whole financial health of the company and the field of the business and the business model in question together define what ratios are relevant to use and what kind of ratio value is considered adequate.

Not only the financial ratios are challenging, but also the financial analyses in general require their own framework. To fully understand the results, the analyst

should have a solid grasp of the operational field where the company operates, the business model at hand and to also understand the micro- and macroeconomic effects to the business. Based on these facts, the author realized that financial ratio analysis is not an effortless task and will require lots of planning, studying, and collaborating with the commissioning company.

The handbook was created around financial ratios and the focus was on profitability, liquidity, and solvency ratios. The author concluded that this limitation offers solid conception of the company's finances without fraying the commissioner with too much information. The author cogitated that once the commissioner handles this limitation, it can and it should, include more different ratios to the analysis.

The Excel model was made according to the constructive research method and based on this method, the tool should be simple and easy to use. The commissioner's wishes were that it should be simply structured, protected well and require little input.

The author thinks that she has done a good job with the handbook. The handbook is logically built, and it includes enough details, but the focus is still on the entirety. For example, the author has succeeded in offering enough basic information about financial statements and their items but still emphasized the bigger picture of the company's finances. To limit the theory and the analysis to three financial ratio categories was also successful because it offered holistic view of the company's financial performance and it also unveiled a new research question. This revealed question was: "how can the case company improve its profitability?". This question arose from the financial ratio analysis, when the author discovered, that this factor is the case company's main weakness.

In author's opinion, also the Excel model fulfills the objectives. It enabled the financial ratio analysis and it helped to discover the soft spots of the company. The model was also created with a thought, that it will be used in future and alongside other analyses. The main idea of the Excel model was to encourage the commissioner to start financial controlling, and in author's opinion, this objective is fulfilled.

In author's opinion, the limitations of this thesis relate to the financial analysis. The chosen benchmarks for the analysis were time series analysis (years 2017–2019) and cross-sectional analysis (beauty service and other health service sectors' medians). Some theoretical values were also used to support the analysis.

The author found out from the time series analysis that the timeline was bit too short to properly indicate the financial trend of the company, so it did not offer very valuable information. Therefore, the author and the commissioner together decided, that a new trend analysis should be done in future. In this research the author had no choice but to use this three-year timeline, because the case company had so volatile years before the year 2017.

The cross-sectional analysis was also bit universal and enabled mostly general remarks. Also, sadly the medians from the year 2019 were not published yet, so the author could only reflect the results by using 2017 and 2018 medians. In future, the commissioner could select some specific company or companies to which compare the results. This analysis would offer better information about the case company's strengths and weaknesses in relation to the competitor(s). The commissioner could also use the build Excel model to perform the cross-sectional analysis because according to the constructive research approach, the model should work for other similar companies.

All in all, when compared to the large framework which financial ratio analyses require, the author fulfilled the objectives well. If the author would do this research again, she would plan the analysis better by taking into consideration the above-mentioned limitations and better familiarize herself with the case company's situation. Despite these, the author learned a lot about financial ratio analyses and the whole thesis process was a valuable experience.

The author is particularly pleased, that she found the strengths and weaknesses of the case company and that she discovered a new research question. Even though the analysis was bit general, it offered a good conception of the company's financial situation and now the case company can pose new financial plans.

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APPENDICES

Appendix 1. Standardized income statement of the case company

Company X			
ADJUSTED INCOME STATEMENT	**1.1. - 31.12.2019**	**1.1. - 31.12.2018**	**1.1. - 31.12.2017**
Sales revenue	26513	25348	25921
TOTAL REVENUE	**26513**	**25348**	**25921**
Material and utensil	963	835	750
External services	235	210	192
Personnel costs	17511	16540	17460
Depreciation expense	60	50	45
Other costs	6665	6640	6400
OPERATING PROFIT	**1079**	**1073**	**1074**
Interest and other finance costs	130	145	160
Taxes	420	350	365
NET PROFIT	**529**	**578**	**549**
Occasional revenues	1115	1076	990
OVERALL RESULT	**1644**	**1654**	**1539**
NET INCOME	**1644**	**1654**	**1539**

Appendix 2. Standardized balance sheet of the case company

Company X			
ADJUSTED BALANCE SHEET	**1.1. - 31.12.2019**	**1.1. - 31.12.2018**	**1.1. - 31.12.2017**
ASSETS			
Long-term assets			
Equipment and machinery	1600	1785	1940
Long-term assets total	**1600**	**1785**	**1940**
Current assets			
Inventory	350	250	400
Account receivables	200	48	90
Cash on hand	210	282	120
Current assets total	**760**	**580**	**610**
ASSETS TOTAL	**2360**	**2365**	**2550**
OWNER'S EQUITY & LIABILITIES			
OWNER'S EQUITY			
Owner's equity	820	720	767
Owner's equity total	**820**	**720**	**767**
LIABILITIES			
Long-term liabilities			
Debts from financial institutions	1000	1200	1510
Long-term liabilities total	**1000**	**1200**	**1510**
Current liabilities			
Short term debt with interest	510	400	188
Accounts payable	30	45	85
Current liabilities total	**540**	**445**	**273**
OWNER'S EQUITY & LIABILITIES			
TOTAL	**2360**	**2365**	**2550**

Appendix 3. Official income statement of the case company

Company X			
OFFICIAL INCOME STATEMENT	**1.1. - 31.12.2019**	**1.1. - 31.12.2018**	**1.1. - 31.12.2017**
Sales revenue	26513	25348	25921
Other revenue	1115	1076	990
TOTAL REVENUE	**27628**	**26424**	**26911**
Material and utensil	963	835	750
External services	235	210	192
Depreciation expense	60	50	45
Other costs	6665	6640	6400
OPERATING POFIT	**19705**	**18689**	**19524**
Interest and other finance costs	130	145	160
PROFIT BEFORE TAXES	**19575**	**18544**	**19364**
Taxes	420	350	365
NET INCOME	**19155**	**18194**	**18999**

Appendix 4. Official balance sheet of the case company

Company X			
OFFICIAL BALANCE SHEET	**1.1. - 31.12.2019**	**1.1. - 31.12.2018**	**1.1. - 31.12.2017**
ASSETS			
Long-term assets			
Equipment and machinery	1600	1785	1940
Long-term assets total	**1600**	**1785**	**1940**
Current assets			
Inventory	350	250	400
Account receivables	200	48	90
Bank balances	185	212	75
Cash	25	70	45
Current assets total	**760**	**580**	**610**
ASSETS TOTAL	**2360**	**2365**	**2550**
OWNER'S EQUITY & LIABILITIES			
OWNER'S EQUITY			
Net income	19155	18194	18999
Owner's withdrawals	18335	17474	18232
Owner's equity total	**820**	**720**	**767**
LIABILITIES			
Long-term liabilities			
Debts from financial institutions	1000	1200	1510
Long-term liabilities total	**1000**	**1200**	**1510**
Current liabilities			
Short term debt with interest	510	400	188
Accounts payable	30	45	85
Current liabilities total	**540**	**445**	**273**
OWNER'S EQUITY & LIABILITIES			
TOTAL	**2360**	**2365**	**2550**