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FINANCIAL RATIO ANALYSIS CASE SUPERCCELL LTD

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I declare that I have compiled the paper independently
and all works, important standpoints and data by other authors
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ABSTRACT

The purpose of this thesis paper is to conduct relevant and reliable financial ratio analysis for case company Supercell Ltd. The aim is to prove that the traditional financial ratios analysis is an enough effective method when looking for insights and financial condition of Technology Company. One aim is to find out whether some ratios work better than others for this kind of company. The paper will go through the common financial ratios, and the results are calculated from Supercell financial statements. To prove the above-mentioned aim, the author uses the financial ratio analysis to find out the economic performance of the case company, if possible. The analysis is based on profitability, solvency, and liquidity. In order to make such analysis, a quantitative method is required. The analysis part is divided into two sections, the horizontal analysis, and the cross-section analysis, followed by the conclusion. The results are presented during the thesis paper. The author's personal aim while writing the paper is to gain knowledge in such analysis and to improve the understanding of financial statements.

Keywords: Financial statement, Financial ratio, Financial ratio analysis, Horizontal analysis, Cross-section analysis, Supercell Ltd.

INTRODUCTION

This thesis paper is a financial ratio analysis for case company Supercell Ltd. The topic was chosen by the author of the paper based on the feeling that the topic is quite relevant to his own future career and learning process in the field of financial analysis and investing. The paper itself is compiled of theoretical aspect and empirical aspect. The purpose of the paper is explained along with the conceptual framework, and the main research questions are presented in the first chapter of the paper.

In this thesis paper, the author will focus on financial ratios and analysis for the selected company based on financial ratios. The financial ratio is an outcome of two or more selected numerical values taken from an enterprise's financial statements. The author will express these financial ratios as a decimal value or given as an equivalent percentage value. Financial ratios are important tools that can be utilized internally by for example managers and shareholders. The external need for these indicators rises by creditors and potential investors.

Financial analysis usually refers to an assessment of profitability, liquidity, and solvency. Reliable financial information is key for evaluating the overall financial condition of the company and economic performance, and to make predictions on the enterprise's future outlook. The financial analysis based on financial ratios allows one to compare similar firms and groups in the same industry, even though the actual numbers in the financial statements can be totally on the different level. As said, the objective and research problem for this thesis paper is to find out if the financial ratio analysis for Supercell Ltd based on profitability, solvency, liquidity, is the financial ratio analysis effective method when analysing and looking insights of a technology firm.

The main research questions are divided into two groups, theoretical research questions, and empirical research questions. All financial ratios used in this paper are explained in the theoretical aspect and formulas for the calculations are shown. Empirical aspect focuses on the

sample of data, which in this case are the financial statements of Supercell Ltd from years 2012-2016 (Asiakastieto 2018). Author of the paper will also include industry averages from Asiakastieto into this paper in order to compare and analyse the ratios. All the data is analysed using a quantitative method in order to produce accurate and relevant results.

In the first chapter of the paper, the author will go through the purpose and objectives of the thesis paper, which are mentioned earlier. In the first chapter are also introduced the conceptual framework and the main research questions for both, theoretical aspect and empirical aspect.

The second chapter focuses on the financial analysis and the concept of financial ratio. The need and the use of the analysis are explained while the author will go through what is a financial ratio. The following chapter is based on the assessment of profitability, solvency, and liquidity. The author brings up the key figures for each category and formulas are being explained. The fourth chapter focuses on the company itself, and author will represent short a history of the company Supercell Ltd and how it became the company it is nowadays. The fourth chapter ends with a short brief about the industry where Supercell operates.

The fifth chapter is the actual analyzing part where the author provides insights of the company by using horizontal analysis and cross-section analysis. By using these analyses, the author can investigate if the financial ratio analysis offers a relevant image of the company. In the last chapter comes the conclusion where author sums up the results and the findings whether the financial ratio analysis can be utilized or not for Technology Company. List of references and appendices can be found at the end of the thesis paper.

1. PURPOSE OF THE THESIS

1.1 Purpose and objectives

The purpose of this thesis paper is to prove that financial ratio analysis can be used to produce an overall picture and to get insights for case company Supercell Ltd based on profitability, solvency, and liquidity. The author of the paper will also compare Supercell Ltd financial ratios and performance to the industry averages. Author's aim while conducting the paper is to gain a deeper understanding and develop the knowledge of financial ratio analysis while using the actual financial statement provided by the company itself.

The research questions are highly linked to financial ratio analysis. As mentioned before, the questions are divided into two categories. The following list contains both, theoretical questions and empirical questions.

Theoretical questions:

1. What is financial ratio?
2. How can financial ratios be utilized in analysing the data?
3. What is needed to calculate and conduct the financial ratios?

Empirical research questions:

1. Can financial ratio analysis be used for Technology Company?
2. Does the general rules of financial ratios work for Technology Company?

Financial ratios are expressed and explained based on academic publications in the theoretical aspect while these theoretical questions are answered in the same time in this part of the thesis paper. The pre-defined empirical research questions are answered in the empirical part of the

thesis as well as possible. However, the outcomes and results from both parts are discussed in the conclusion part of the thesis.

1.2 Conceptual framework

The conceptual framework of financial analysis includes four different elements. These four elements have each their own individual phase of work and are timely separated. Below is the figure 1 which illustrates this thesis paper conceptual framework as a graphic description.

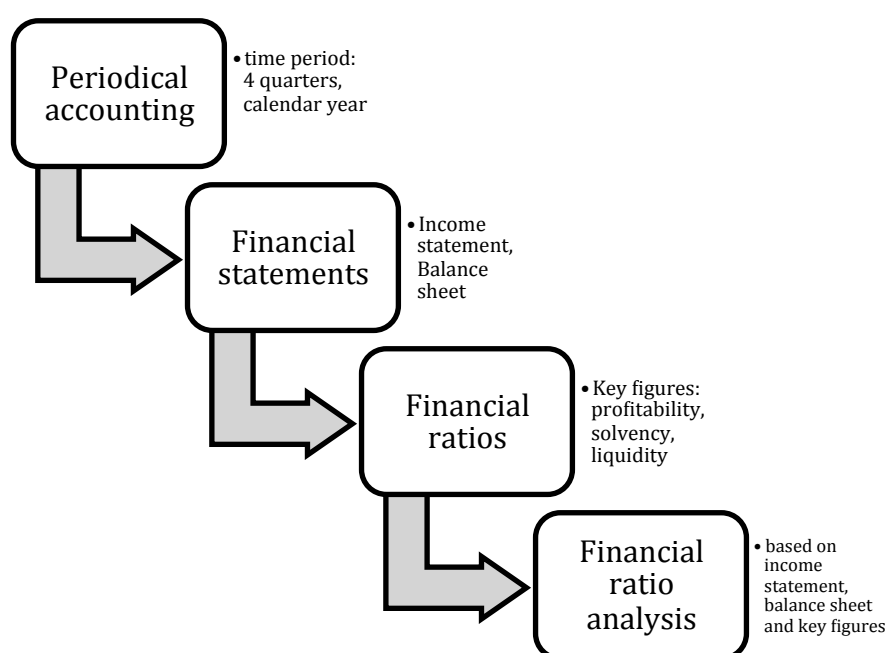


Figure 1. Conceptual framework
Source: Hannuksela (2018); conceptual framework

The first element is periodical accounting done by the company. The length of the period depends on the company and the taxation of the country where the company operates, or it is situated. Usually, the accounting period is one month or a quarter of a year or in the long-term aspect, one calendar year (Leppiniemi, Kyykkänen 2013). Financial statements are based on the periodical accounting, in this case, the period length is a quarter of a year, and therefore the income statements consist of four quarterly pieces. Each balance sheet is calculated at the end of the last accounting period (end of the calendar year). Financial ratios are calculated from numerical values taken from company's financial statements. As said this paper focuses on the

key figures of profitability, solvency, and liquidity. The last element and the purpose of the thesis paper is financial ratio analysis. Author of the paper executes this detailed financial analysis based on income statement, balance sheet and the figures calculated from the financial statements and compares these figures to industry averages in order to prove that traditional financial ratio analysis method can be used in the evaluation of Technology Company and when seeking insights of the company.

2. FINANCIAL RATIO ANALYSIS & FINANCIAL RATIOS

2.1 Financial ratio analysis

Financial ratio analysis usually leads to similar conclusions about the economic performance, and financial position of the company than the analyse of the financial statements, however, the advantage of financial ratio analysis compared to financial statement analysis is that it enables more effective comparison to similar companies and therefore is more accurate method to analyse the strengths and weaknesses of the company. In addition to better comparability, the financial ratio analysis enables the use of different benchmark figures to back up the analysis and conclusions. Thus, the financial ratio analysis complements the analysis based on economic performance and financing position in an important way. In this case is expedient that the financial ratio analysis is carrying out by comparing the case company financial ratios to the industry averages or to compare the ratios between straight competitors of the company. This is the base for conclusions of the strengths and weaknesses of the company and its different activities (Seppänen 2011, 111).

If the companies differ significantly in size or report the financial data in different currencies, it is not useful for example compare the reported net income. Thus, the financial ratio analysis enables to remove size as a factor and eliminates the requirement of translating the reported currencies into a common currency, since the focus is on ratios. Also by using financial ratios, examine of comparable performance over time is more accurate than using nominal currency amounts. The horizontal financial statements where quantities are stated in terms of selected base year value and graphs can make such changes more apparent. However, despite all the advantages, financial ratios are calculated from financial statements, and the possible differences in accounting standards may limit the comparability (Robinson et al. 2015) Even though the standards are the same, there some other issues to deal with such as the use of historical costs and inflation. Accounting data is not just adjusted for inflation; it represents historical costs

instead of current or replacement cost for more assets. Therefore the reported book value might not reflect with the market value or replacement value of a company's assets (Peterson, Fabozzi 2006). In addition, the more significant influences come from estimations such as residual value estimation and useful life of assets.

The purpose of financial ratio analysis is to calculate adjusted financial ratios from timely separated income statements and balance sheets in order to make accurate conclusions about company's financial operating condition based on the financial ratios. Usually, financial ratio analysis measures the financial condition from two perspectives, firstly the amount of profits company generates (profitability) and secondly the financing position (solvency & liquidity). The company's ability to growth can also be named as one figure that illustrates the financial condition of a company. Growth is a specifically important factor when the valuation of a company is focused on the future from long-term aspect and is based on the estimations of cash flows received in the future (Salmi 2004,196).

The need for financial ratio analysis rises from various sources, and it can be utilized in various ways. The main users of such information can be divided into three different groups. These groups are investors, management of the company and the creditors of the company. Figure 2 in below illustrates these groups, how the financial analysis can be utilized and their objectives.

Table 1. Users of financial ratios

Particulars	Need	Objective
Investors	valuation of company	profitability, risk & growth analysis
Management	efficiency	operating performance, solvency & profitability
Creditors	ability to pay debt	liquidity & solvency

Source: Temte (2004, 75)

The equity investors are interested in the value of a company, thus they use the financial ratios analysis to estimate the value. The reason is obvious; equity investors are seeking companies with great growth potential or companies with good rates of return on investment, which in this

case means dividends. Also one of the interests of investors is to purchase the company with the intention of liquidating it. Equity investors are sometimes referred as venture capitalists. There are several possibilities for an equity investor to purchase the ownership in the company, such as through common stock, merger, or acquisition. While equity investors are keen on profitability and return on investment, the creditors such as corporate bankers, bondholders, and trade are most concerned with the company's ability to repay principal and interest on the debt. Therefore, creditors are more focused on the cash flow of the company over the life of the debt.

Management of the company focuses the overall profitability and efficiency to determine the direction of the company. Financials are prepared and used to analyse specific segments, activities and different divisions of the company; therefore the management is the primary user and employs the information to make a strategic and operating decision (Temte, 2004).

The key thing in the analysis is to point out relevant facts in an endless web of data and to simplify the financial condition into a manageable entity. The financial condition of a company is formed by three basic factors and the result of them, ability to grow (Salmi 2004, 98). In order to maintain and analyse the financial condition, one has to answer the following questions:

- 1) Is the profit sufficient?
- 2) Is the capital structure healthy?
- 3) Will the cash flow be always sufficient?

These are the questions that define the company's ability to grow, and growth is the aim every company is targeting for.

The first question is about profitability and how much company is able to gain profits by using short and long-term expenses. Profits are conducted from the income statement and clarifying the profitability, and the balance sheet is needed as well in order to see the company's ability to manage capital requirements. The second question is associated with solvency and liquidity. These factors make the financial position of the company. The main question regarding the financial position is that are liabilities and equity balanced so that company is able to deal with interest expenses and debt reductions. One can think that these questions are like the foundation of the company's economy and if some part of it is not in shape, might the whole foundation start to fluctuate at least in the long-term aspect. The third question is linked to growth what is being considered to be some sort of sign of success. However, it is not possible for a company to grow without proper profitability or financial position (Salmi 2004).

Analyst forms the conclusion about the financial health and lifetime of a company by looking the historical economic performance and condition of the company. The starting points for the conclusion are the direction of the development, the level of profitability, and the strength of financing of the company. The greatest weight in the analysis goes for the health of the operating activities, in other words, the growth of business and its profitability. The financial position or the strength of financing is the key factor in when defining operative possibilities or restrictions. The healthiness of the business is the force that keeps the business running, and the financing is the resource that gives the possibility and flexibility for developing the business. Financial ratios are used as benchmarks when defining the strengths or weaknesses of company's economic performance and position by looking the proportional level of ratios and the development of the compared to industry or company's history (Seppänen 2011).

The information from a source such as profitability might be helpful while answering questions raised by other sources. The information from all sources must be integrated in order to produce the most accurate overall picture. There are aspects of ratio analysis that are important to understand such as the computed financial ratio is not the final answer, the financial ratio is an indicator of a company's performance from a certain aspect. The ratio tells what has happened but does not answer the question why it happened (Robinson et al. 2015, 299). In addition to already mentioned advantages of the financial ratio analysis, it also helps in taking corrective actions in time since it helps to identify the strengths and weaknesses; thus the analysis helps in improving the operational efficiency of a concerned company. The usefulness of the financial ratio analysis is also one of the advantages since financial ratio analysis is the simplest tool for fundamental analysis, and it's a big help for investors. And what's more the information expressed on financial statements is easily understandable when presented through financial ratio analysis, and therefore it is more useful for all groups having interest towards the company. As said there are limitations for financial ratio analysis such as reliability since the accuracy of the analysis is dependent upon the accuracy of data used. This means that careful interpretation of the financial ratio analysis after a thorough investigation is required, as the financial statements get manipulated. As the financial ratio analysis is comparative measure and gives a comparative picture of financial health and not the absolute measure of it, it's one of the limitations. The inter-firm comparison can also be misleading on the basis of financial ratio analysis because of the differences in practices between different companies for example in respect of the cost of investment or inventory valuation (Singh 2007).

2.2 Financial ratios

The financial ratio is an outcome of two or more selected numerical values taken from company's financial statements. These ratios are used in the valuation of the company. Financial ratios enable eliminating the effect of for example size, inflation, and other metrics that affect annual comparability. It is said that the ratio analysis is the most common and widely used way to analyse financial statements from all types of financial analyses (Leppiniemi, Kyykkänen 2013).

The economic performance of a company is formed by different sources. These sources are profitability, solvency, cash position and liquidity. According to this allocation also the ratios used to analyse the company are divided into three main categories, which are profitability, solvency, and liquidity. In addition to them, the efficiency measurements (turnover ratios) and z-ratios, used in bankruptcy predictions are separated into own categories. Each category has multiple different ratios, which measures the economic performance of a company in different sections (Niskanen, Niskanen 2007, 55). There are also other financial ratios that do not belong into these categories such as stock ratios and ratios related to cash flows. Supercell Oy is not a public listed company, so this thesis paper does not take stock ratios like P/E ratio into account in this analyse. Also, cash flow ratios are left outside of the paper.

In the real world is it possible to create and calculate a whole lot of different financial ratios. For example, the Finnish accounting board has provided 31 different ratios in their latest book related to financial analysis, and there is not every existing ratio. In order to be able to make a comparison with financial ratios, the ratios must fulfil certain requirements; such as they must be proportional. This means that for example, some ratio measuring profitability must give the same the value for two equally valuable companies, despite the size difference of the companies. Financial ratios are usually presented as a percentage. However, in theory, it is possible to compare any batch of the income statement and balance sheet, this means that it is possible to form ratios that are more theoretical and measures the economic performance more effectively than these percentage ratios calculated straight from the financial statements (Niskanen, Niskanen 2003).

The accurate and trustworthy of financial ratios are dependent on the financial statements, which are the base for calculations. In addition, the operability of financial ratios can be seen to be

dependent on two more factors. Firstly, the ratio is supposed to measure the feature that it should; this is called validity. The financial ratio is seen valid if the results are correct on the average. The second factor is the financial ratio's ability to give non-random results; this factor is called the reliability. The financial ratio is seen reliable if the deviation of the measurement results is small (Niskanen, Niskanen 2003, 111).

3. SPECIFIC FINANCIAL RATIOS

3.1 Profitability

A basic concept of profitability means that the company's turnover is bigger than the amount of expenses in that period of time. Usually, when analysing and utilizing the financial ratios, it is common that more precise and accurate concept is used. Then we can state that company is profitable if the used measurement of profitability is set at the right level (Vilkkumaa 2010).

Usually, profitability measurement can be done at the company level as a whole since typically the information from different business units is inadequate. Profitability can be measured both, in short-term aspect and in long-term aspect. In financial statement analysis, the profitability measurement is primarily focused on the short-term aspect. The notion of long-term profitability and its development is obtained when comparing the analyse results from several successive years (Niskanen, Niskanen 2007).

Absolute profitability means the difference between profits and differentiated expenditures in a certain accounting period. Financial ratios are relative profitability indicators where the absolute profitability is divided by some proportionate financial statement batch. When looking at profitability from the company level as a whole, the profitability measurement numerator is the monetary value that represents absolute profitability containing profit shares of own equity and external capital (Niskanen, Niskanen 2007).

The profitability ratios presented in this thesis paper are the following:

- 1) EBITDA - %
- 2) EBIT - %
- 3) Return on investment - %
- 4) Return on asset - %

EBITDA -%

EBITDA is net income with interest, taxes, depreciation, and amortization added back to it. It can be used to analyse and compare profitability among companies and industries as it eliminates the effects of financing and accounting decisions. It is often used in valuation ratios and compared to company value and revenue. EBITDA is financial measure, which is modified way to present operating income for organizations that are not concerned about the financially oriented charges it excludes. This ratio is also known as operating profit before depreciation (Siciliano 2003). EBITDA margin is calculated as follows:

$$EBITDA - \% = \frac{EBITDA}{total\ revenues}$$

Figure 2. EBITDA -%
Source: Yritystutkimus ry (2017, 72)

This figure is helpful in comparing the profitability of different companies and when gauging the effectiveness of a company's cost-cutting efforts. EBITDA margin breaks down operating profit as a percentage of revenue, this means that management, investors, shareholders, and creditors can understand how much operating cash is generated for each dollar of revenue earned. The higher this margin is, the lower operating expenses are in relation to total revenue.

EBIT - %

EBIT means the company's earnings before interest expenses and taxes. It is also called operating earnings, operating profit or operating income. This figure is the amount of money what company has after the operating expenses and cost of goods sold is subtracted from total turnover. EBIT or operating profit indicates how much the business can generate profits in relation to total turnover (Vilkkumaa 2010, 47). EBIT margin is calculated as follows:

$$EBIT - \% = \frac{operating\ income}{revenue} \times 100$$

Figure 3. EBIT-%

Source: Niskanen, Niskanen (2003, 113)

EBIT margin is quite dependent on industry segment, which is a pretty restraining factor and should keep in mind when using the ratio. Within the industry, EBIT margin indicates how the company has performed when comparing to other company in the same industry or to own performance in previous years. Because of the fact that the margin is dependent on the industry, it is hard to present any right level of the margin in general, but one should use industry average in order to compare two companies in the same industry. The industry average margin can be considered as a target level or as a benchmark (Vilkkumaa 2010).

Return on investment - %

Return on investment; also known as ROI is a performance measure. This measure is used in evaluating the efficiency of an investment or to compare the efficiency of different investments. ROI measures the amount of return on investment, relative to the investment's cost. Return on investment is calculated by adding up the profits and financial expenses, divided by the average amount of capital invested in a certain accounting period (Leppiniemi, Kyykkänen 2013). A formula for ROI is as follows:

$$ROI - \% = \frac{\text{profits} + \text{financial expenses}}{\text{average invested capital}} \times 100$$

Figure 4. ROI-%

Source: Ikäheimo et al (2014, 69)

Return on investment is a quite popular ratio and widely used metric because of its versatility and simplicity. Return on investment can be used in estimations whether the investment is profitable or not. In case the figure of return on investment is negative, the investment should not be made. Also since the outcome of the calculation is a percentage, it can be easily compared with other investments and returns. Sometimes ROI is also called the accounting rate of return (Horngren et al. 2005). The following figure illustrates the general evaluation criterion for return on investment:

Table 2. ROI-% ratings

Rate of return	Valuation
Over 15%	good
0-15%	satisfying
Negative	weak

Source: Leppiniemi, Kyykkänen (2013, 168)

Return on assets - %

The starting point for defining return to assets is the demanded rate of return for external capital and own equity (Kallunki, Niemelä 2007, 176). When the profitability is seen as company level in whole, the numerator represents the absolute monetary value, which contains the profits shares of external capital and own equity. Return on assets indicates how profitable a company is relative to its total assets. Return on assets -% can be utilized by managers, investors, creditors or analyst and it gives perspective as of how efficient a company's management is at using the assets to generate earnings and profit (Niskanen, Niskanen 2007, 57). Return on assets -% formula is as follows:

$$\text{Return on assets} - \% = \frac{\text{profits} + \text{financial expenses} + \text{taxes}}{\text{total assets}} \times 100$$

Figure 5. Return on assets-%
Source: Niskanen, Niskanen (2007,57)

The higher this ratio is, the better since it tells the company's effectiveness to convert money it invests into earnings and profit. There are some general guidelines or ratings provided by Finnish accounting board on what should be the target return on assets-%. The following figure illustrates these ratings:

Table 3. ROA-% ratings

Rate of return %	Valuation
Over 10%	good
5-10%	satisfying
Under 5%	weak

Source: Yritystutkimus ry (2017, 67)

3.2 Liquidity

The sufficiency of money is related to the company's ability to constantly get by the current payment obligations (Riistamaa, Jyrkkiö 1996, 29). In addition, the company should manage to get through these obligations as inexpensively as possible without any statutory interest for late payments while taking advantage of settlement discounts and keeping the status of "good payer." The concept of good liquidity is quite easy to understand, a company must have all the time enough cash, cash equivalents or assets with high liquidity in order to get through payment obligations. Since it is very hard to predict all the payment obligations with 100% accuracy, liquidity also means that company has enough big so-called "liquidity reserve" what can be utilized in case of surprising and unpredictable obligations.

Liquidity can be defined either in limited aspect or in a wider aspect. In terms of limited aspect, the liquidity includes only cash, receivables from the bank, short-term securities and other short-term receivables. In the wider aspect, the definition of liquidity also includes all current assets. Long-term receivables are not to take into account in terms of liquidity. Liquidity can be examined in two different points of view, the other one is static liquidity, and another one is dynamic liquidity. Static liquidity means immediate liquidity, which means the ability to get through obligations in certain time, for example, the balance sheet date. Dynamic liquidity, on the other hand, refers to the ability of getting through the obligations with future cash flows (Salmi 2004).

The subject of review in term of static liquidity is balance sheet and its structure. The main point is trying to figure out what is the relationship between the first payment obligations and the amount available assets in order to make the payments. As said static liquidity examines the

situation in balance sheet date, which is also the downside of static liquidity since the balance sheet is constantly changing. The liquidity in the balance sheet date might be a fleeting situation, and it is totally different in the next day. This is something to be considered and taking into account when investigating the liquidity of the company. Luckily it is quite easy to understand the static liquidity by using net working capital. Net working capital consists of own equity and long-term capital what is needed in order to finance convertible liabilities. Net working capital explains the concept of immediate liquidity (Salmi 2004).

The liquidity ratios presented in this thesis paper are:

- 1) Quick ratio
- 2) Current ratio
- 3) Working capital -%
- 4) Accounts receivable turnover days
- 5) Accounts payable turnover days

Quick ratio

The quick ratio indicates the liquidity for shorter period time than the current ratio. This ratio is sometimes also called "acid test." Quick ratio measures the company's liquidity more strict than the current ratio in the light of the fact that inventories have been eliminated in this equation since they might not be realizable very fast (Niskanen, Niskanen 2003)

Quick ratio measures the amount of current assets in relation to current liabilities. In case current assets can cover the current liabilities, we can say that the liquidity is good. The less company have current assets compared to current liabilities, the more critical liquidity company has (Leppiniemi, Kyykkänen 2013). The formula for calculating quick ratio is quite simple and as it follows:

$$\text{Quick ratio} = \frac{\text{gross working capital} - \text{inventories}}{\text{short term debts}} = \frac{\text{current financial assets}}{\text{short term debts}}$$

Figure 6. Quick ratio

Source: Niskanen, Niskanen (2007, 61)

Generally accepted and provided guidelines results for quick ratio are as follows:

Table 4. Quick ratio guidelines

Quick ratio	Valuation
Over 1	good
0,5-1	satisfying
Under 0,5	weak

Source: Leppiniemi, Kyykkänen (2013, 171)

Current ratio

The current ratio is widely used in estimation the company's ability to pay short-term debts and liquidity. Also, the current ratio is based on the balance sheet like quick ratio, however current ratio investigates the liquidity while taking into account the whole net working capital. In other words, while calculating the current ratio, one must include inventories to calculation as a positive figure. Current ratio can be considered to be a more reliable figure than net working capital-% due to its nature. For example, it is possible that even though two different companies have the exact same amount of net working capital, the current ratios might differ from each other greatly (Niskanen, Niskanen 2003). The current ratio is calculated as follows:

$$\text{Current ratio} = \frac{\text{net working capital}}{\text{short term debts}} = \frac{\text{financial assets} + \text{inventories}}{\text{short term debts}}$$

Figure 7. Current ratio

Source: Niskanen, Niskanen (2007, 61)

The current ratio is quite simple and it is easy to use, there is also a downside due to the ratio format. Like in quick ratio, there are general guidelines for a current ratio as well. The following table illustrates this:

Table 5. Current ratio ratings

Current ratio	Valuation
Over 2	good
1-2	satisfying
Under 1	weak

Source: Leppiniemi, Kyykkänen (2013, 171)

Working capital -%

The working capital ratio indicates how much the daily operating and running the business ties up capital. Working capital percentage illustrates the development of liquidity in relation to the development of company's turnover when comparing the ratio from past several years (Niskanen, Niskanen 2003). The formula for working capital percentage is as follows:

$$\text{Working capital} - \% = \frac{\text{working capital}}{\text{turnover}} \times 100$$

Figure 8. Working capital -%
Source: Niskanen, Niskanen (2003, 121)

The less capital is needed, the less are the capital expense and better gain on capital, this leads to better liquidity. However, in order to make sure that ability to operate is good and stay that way, it requires sufficient level of working capital. Working capital management is one of the most important things in business and leadership (Salmi 2004).

Account receivable turnover days

Account receivable turnover in days tells how many times the account receivables turnover in a certain period of time, in this thesis the time period is 12 months. Thus the account receivable in days can be considered to be notable figure when analysing the effective use of capital and particularly the working capital (Ikäheimo et al. 2014). This figure is calculated as follows:

$$\text{Account receivable turnover days} = \frac{\text{account receivables}}{\text{turnover}} \times 365 \text{days}$$

Figure 9. Account receivable turnover days
Source: Ikäheimo et al. (2014, 74)

Account receivables turnover in days can be interpreted from another aspect as well. The ratio also tells how much (Dollars) is possible to increase the sales by investing one Dollar to account receivables (Niskanen, Niskanen 2003, 124).

Account payable turnover days

The term account payables mean the time a third party has given to a company to pay the bill for service or product. The higher is the amount in accounts payables; the more financing a company will need. Since the trade payable is usually interest-free, it reduces the requirements for capital (Salmi 2004, 162). Account payable turnover days is calculated as follows:

$$\text{Account payable turnover days} = \frac{\text{account paybles}}{\text{product \& service purchases}} \times 365\text{days}$$

Figure 10. Account payable turnover days
Source: Salmi (2004, 162)

This ratio tells the average time how long it took for a company to execute the payment to the supplier for a product or a service. However, on the balance sheet the account payable is represented without value-added tax and due to to this the actual account payable turnover days might be little longer than presented. If the liquidity of the company is good, it can execute the payments on time and take advantage of the credit terms, in case there is. Also by paying the bills on time, the company can avoid the extra cost that occurs from delayed payments. Like liquidity ratios in general, both account receivable turnover and account payable turnover in days can be utilized in the evaluation of customers and suppliers liquidity and even in the evaluation of creditworthiness (Vilkkumaa 2010, 53).

3.3 Solvency

The financial structure of the company represents how the operating activities and the whole business is funded. Basically, there are two ways to finance the business, either with own equity or by borrowing external capital. The company has to pay back the external capital during times, and it will cause capital expenses, for example, interest expenses. The company does not have to pay back the own equity and dividends are not compulsory. Thus the financial structure of the company tells the company ability to get trough liabilities in the long-term aspect. In case the external capital has a bigger portion in company financial structure, and the more expenses related to external capital decreases the turnover, it is more likely that company will face solvency problems during economic depressions. Financial position can be evaluated by looking

the financial structure and performance-based financial ratios of the company (Ikäheimo et al. 2014).

It can be stated that company has substantial financial structure and no problems related to solvency if it can get through the expenses of external capital even in economic depression in long-term aspect without causing any risk towards the operating activities and the whole business. Analysing the solvency ratios is not always a simple job to do. It is not always the best option to let equity ratio grow too much because of the advantages of external capital. For example, the required rate of return is much lower with external capital than the rate of return with own equity and the interest expenses can be utilized in tax reductions. The second thing to point out is that if the company can manage the indebtedness, it can take advantage of the debt leverage, this leads to increase in expected gain per share since the gearing level goes up. However, the downside of an increase in gearing is that the risk of indebtedness grows. The secondly pointed benefit can be utilized in case the company is publicly listed (Niskanen, Niskanen 2003).

The company can affect the portion of external capital by taking more debt or by paying the debt. Own equity is affected by the net income because in the financial statement the net income (loss) is accounted to addition (reduction) in own equity. Also, the amount of dividend, purchased own shares and returns of capital lower the amount of own equity. In addition, the issues of shares increase the amount of own equity. There is not any general optimal financial structure level, but companies are usually trying to find out the best financial structure for themselves. It is common that companies in the same industry have the similar financial structure in the light of the fact that every industry has their own business risks. The more risks the industry contains, the more stable financial structure the trying to build (Ikäheimo et al. 2014).

Great solvency situation gives the company more margins to make moves in different situations. The greater the solvency is, the more independent decision company can make. However this works both ways, the more borrowed external capital company have, the more easily the providers of the external capital can set clauses and demands for a company in debt terms (Vilkkumaa 2010).

Solvency ratios presented in this thesis paper are the following:

- 1) Equity ratio - %
- 2) Net gearing
- 3) Leverage ratio - %

Equity ratio - %

Equity ratio is one of the most commonly used figures in evaluating the company's solvency. This ratio indicates how much of the company's capital is financed with equity (Salmi 2004, 142). This ratio is calculated by comparing the proportionality of the company's equity to balance sheet total where possible advances are eliminated. The advances include such entities as work-in-process and actually, do not represent liabilities; these advances represent more like the first stage of an agreed deal with the customer (Leppiniemi, Kyykkänen, 2013). The formula for equity ratio -% is as follows:

$$\text{Equity ratio} - \% = \frac{\text{equity}}{\text{balance sheet total} - \text{advances received}} \times 100$$

Figure 11. Equity ratio - %
Source: Yritystutkimus ry (2011, 66)

There are guidelines for equity ratio, however, these guidelines can vary depending on the industry where the company operates. For example, a company which operates in the very stable industry and it is not affected by economic depression, can a company have a little lower equity ratio than a company that operates more dynamic industry and the turnover is dependent on economic cycles (Salmi 2004). Yritystutkimusneuvottelulautakunta has given the following guidelines for equity ratio:

Table 5. Guidelines for equity ratio -%

Equity ratio %	Valuation
Over 40%	good
20-40%	satisfying
Under 20%	weak

Source: Yritystutkimus ry (2011, 67)

Net gearing

Net gearing ratio is one of the most common solvency ratios among with the equity ratio. One of the reasons for its popularity is that the Finnish accounting board has recommended its use, although is not obligatory. The numerator in the equation is the company's liabilities minus all the liquid money of the company, and the numerator is divided by company's own equity. So the net gearing ratio represents a situation where all the liquid money is used into interest-bearing liabilities. This situation is hypotactic since no company would survive without liquid assets (Niskanen, Niskanen 2003, 133). Net gearing is calculated as follows:

$$\text{Net gearing} = \frac{\text{interest bearing liabilities} - \text{cash and financial securities}}{\text{equity}}$$

Figure 12. Net gearing
Source: Yritystutkimus ry (2011, 68)

In case the value of net gearing is under one, it can be considered as a good result. However, if the result is negative because of the negative equity, the result of the ratio is weak (Yritystutkimus ry 2011, 68).

Leverage ratio - %

The leverage ratio is a financial ratio where the liabilities of the company make a proportional to the turnover. This ratio can be utilized only if comparing two different companies in the same industry, since companies from different industries have a different structure of the balance sheet and the need for external capital varies, depending on the industry. All comparisons done between companies from different industries can be seen as directional estimations (Niskanen, Niskanen 2003). The leverage ratio is calculated by reducing the advances received from interest-bearing liabilities and dividing the sum by turnover. The higher the leverage ratio, the more indebted the company is. The formula is as follows:

$$\text{Leverage ratio} - \% = \frac{\text{interest bearing liabilities} - \text{advances received}}{\text{turnover}} \times 100$$

Figure 13. Leverage ratio - %
Source: Yritystutkimus ry (2011, 67)

High leverage ratio percentage requires that the company also have high EBIT margin in order to get through the obligation caused by liabilities. As said, the only reliable way to compare the figure is between companies in the same industry. The advantage of the leverage ratio - % is that the result is reliable even if it is calculated from unadjusted financial statements. Even though the ratio is pretty bound to industry, the Finnish accounting board have suggested following target guidelines for leverage ratio - %:

Table 6. Leverage ratio - % guidelines

Leverage ratio %	Valuation
Under 40 %	Good
40-80 %	Satisfying
Over 80 %	Weak

Source: Yritystutkimus ry (2011, 67)

4. SUPERCELL OY

4.1 The company

The story of Supercell started in the summer of 2010 when the founders set up the first office in a city called Espoo, Finland. Back then the office quite small, actually the office was just one room with fifteen people inside and the office equipment where from the recycling center. In the beginning, the funding consist of founders own savings and borrowed money from Tekes, which is Finnish government's technology funding arm. After while the CEO of the company; Ilkka Paananen had to move out of the office because of the lack of space. Founders had a few core beliefs and vision how to create new kind of game company; they put people front and centre in order to be able to create a work environment with absolute zero bureaucracy. One of the core beliefs was that the best people make the best games, this follows the idea of putting people first and gave the company ability to create a working place where the people could make the biggest impact, and nothing would stand in their way. One thing that was pretty extraordinary is that the founders make a decision that everything else would be secondary, including financial goals. The vision of the founders would be able to make games that people will play for years, not just weeks or months and also create games for the widest possible market (Supercell 2018)

The organisational structure is quite abnormal; the key was to constitute small team where every member of the team is passionate about the work they do. By creating small teams, Supercell had eliminated emerge of processes, bureaucracy, and politics so the work would still be fun. The mission of the managers and founders was to acquire the best talent for every position while the working environment would be the best possible and then, well basically just get out of the way. To support this, every team is responsible for the game they are developing and the final decision whether is the game good enough to be launched or to be killed is on up to the team. The name of the company also comes from these little teams, or as they called it "cells" and the name Supercell is kind of a collection of the cells. The company itself has stated that the

organizational model is not created for better control, on the contrary, it is created for passion and speed (Supercell 2018).

The first product or actually the first game Supercell launched in spring 2011. The game was called "Gunshine.net." Based on the core beliefs this game was created to cross-platform gaming services so the idea of reaching the biggest market would fulfil. So, the game was build by using flash technology, and it could be played via the desktop web, Facebook, tablet, and mobile. The peak for the first game was in summer of 2011 when the Gunshine had around half a million monthly players. However, it was not delivering on the original product vision. Players did play it only for a month or two, and it was too hard to get into the game without the experience of similar games. They realized that this product would never be a mass-market phenomenon and since they planned the mobile version, it became clear that the game would not be great on mobile (Supercell 2018).

This was kind of a game-changing moment for Supercell and they realized that it is better to focus on one platform at the time. Since the focus now on one platform, they had to rethink the product strategy. Supercell ended all the on-going productions and started to follow new strategy what they call "tablet first." However, it did not take long when this strategy was changed to "mobile first." It's fair to say that this decision was maybe the best one they have ever made when looking thing nowadays but back in 2011 it was quite a risky move. In 2012 Supercell had five little teams working on new games for tablets and mobile. One of those games had to be successful, or the company would not have any future. They killed the first two of the projects, and finally, on May 2012, Supercell launched game named "Hay day." This game included the founders two core pillars for games; great gameplay with good interface experience and social. Hay day was a success, and not long after the launch, Supercell was ready to go public with the second games. In August 2012, they launched game that goes under name "Clash of Clans" globally. This real-time strategy game took over the market, and it took only three months for Clash of clans to become number one top grossing game in the United States. In 2013 these two games generated revenue of 2,400,00 USD a day. Since Hay Day and Clash of Clans, Supercell has launched games called Boom Beach, and Clash Royale and all the games have been hits from the day they were globally launched (Supercell 2018).

The working culture in Supercell is unique; the shoes are left in the vestibule when arrived at the office, and they have a small ball pit in as well. Failure is something that employees should not

fear, but rather think that every failure is an opportunity to learn and it will make Supercell better if they can learn from mistakes. Fun fact is that they have a tradition to drink champagne every time they make a mistake to celebrate the opportunity to learn from the mistake.

Supercell wants to be a truly global game company which has hit games not only in the western market but also in the big eastern markets such as Japan, Korea, and China. Supercell has opened offices in Tokyo, Seoul, San Francisco, and Shanghai. Launched games have been received warmly in the eastern market as well. In fall of 2013 Japanese corporation, Softbank and its subsidiary Gungho acquired 51% of the company, the reported value of the deal was 1,1 billion dollars. The main office remained in Helsinki, which was the demand of the founders. According to the CEO Ilkka Paananen the main reasons for acquisition were the similar philosophy and help the Supercell will receive towards developing the business model. This was also a right step into truly global games company and the acquisition helps to get in the eastern markets. Later on, Softbank bought the Gungho owned shares, and in 2015, Softbank bought out the rest of investors of the Supercell and increased its shares to 73,2% of the company and at the same time making Softbank the sole external shareholder. On June 2016 Chinese corporation Tencent acquired 84,3% of Supercell's shares, the value of the deal was reported to be 8.6 billion dollars (Kauppalehti 2016; Talouselämä 2013).

4.2 The industry

Supercell Oy is registered to belong in the computer hardware and software consulting section, which is part of the computer programming, consultancy, and related activities industry. The main activities in this section are the programming of computer software where combines hardware, software, and communication technology. This industry is commonly known in the Finnish industry system as 62020 (Tilastokeskus 2018).

5. CASE COMPANY SUPERCELL OY

5.1 Horizontal analysis

The comparison of a company's performance in different years is called horizontal analysis (Horngren et al. 2012). Horizontal analysis is also known as time series analysis, financial ratios changes during years, therefore the time series analysis is a relevant and effective method to analyse specified company ratios as the foundation of statistical inference in these analyse methods is the concept of weak stationary (Tsay 2013). In this Thesis paper, the period is five years from 2012 to 2016. The horizontal analysis gives investors and analysis the ability to determine how the company has grown within the time zone under investigation. In this horizontal analysis, the author has chosen two different ratios from groups profitability, solvency, and liquidity. The industry is taken into account in the cross-section analysis part.

Profitability

In the profitability section, the author presents EBIT-% and return on investment - % ratios. Supercell Oy earning before interest expenses and taxes from years 2012-2016 are presented in the following chart:

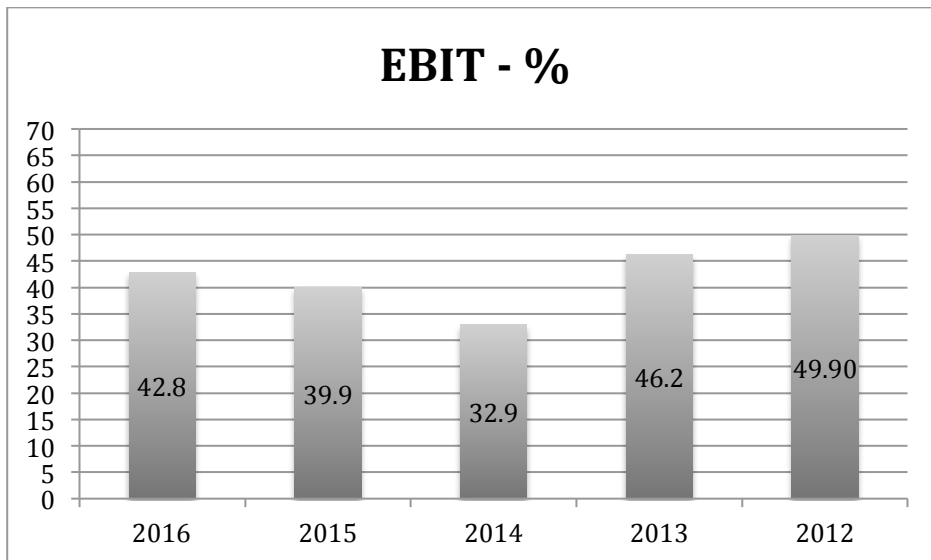


Figure 14. EBIT-% 2012-2016

Source: based on data from Appendix 5

There are no general guidelines for the rate of earning before interest expenses and taxes, since it's dependent on the industry. However, if the ratio is above 10%, it can be considered as a good rate. The exact EBIT- % ratios for the years 2012-2016 can be seen in Appendix 5. Supercell financial ratios 2012-2016. Even though the level of the EBIT-% is good, this does not give the right picture since the ratio is declining from the year 2012. In order to increase the level of the ratio, the company should increase the total sales or by reducing the operating expenses.

Supercell has grown rapidly over the years, and the total sales have increased, however over the years operating expenses have increased more in relation to sales. Therefore the outcome is that the ratio has been sloping downwards compared to 2012, needless to say, that this is not the favourable development direction. However, the rate is increasing in 2015 and in 2016, because the relation between operating expenses and sales has improved. Appendix 1 illustrates the operating expenses, and if we compare the year 2016 to the year 2015, we can see that Supercell has managed to reduce the operating expenses for over 100,000,000 EUR; thus the rate is slightly better.

The second profitability ratio presented in the horizontal analysis is return on investment. Figure 15 below illustrates the ROI-% from years 2012-2016:

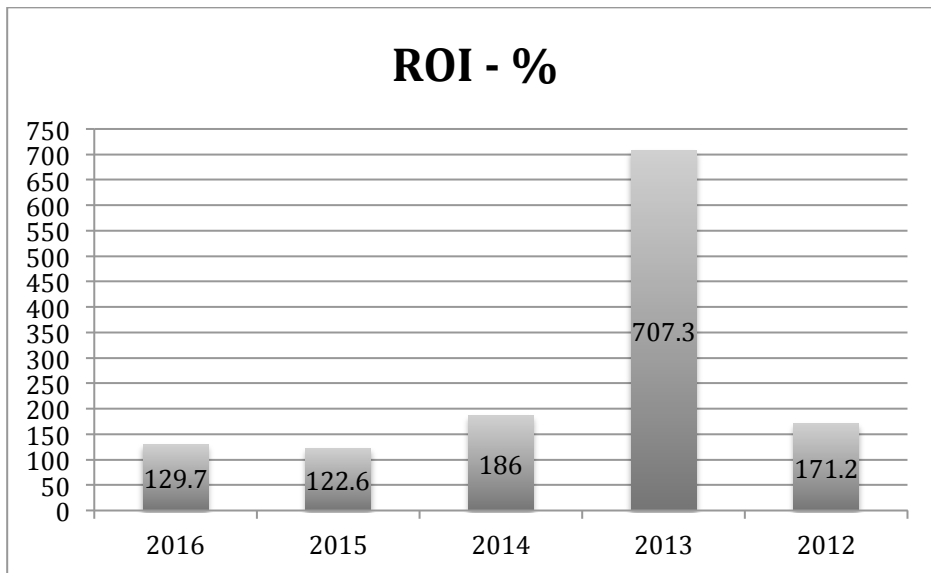


Figure 15. ROI-% figures 2012-2016
Source: based on data from Appendix 5

The general return on investment-% ratings are provided earlier in thesis paper under sub-chapter 3.1. According to this, if ROI-% above 15% is considered as a good value.

The level of this ratio indicates that Supercell is a highly profitable company, which it is but this does not tell the whole truth. Supercell has managed to be efficient in utilising the investment since the financial income has been greater than the financial expenses, however, the major part of the liabilities that Supercell has are interest-free, which might be the reason why the ratio remains so high. Also, the growth is a key player since the change % in turnover has been quite huge over the years, while the amount of invested capital has been lower in relation to turnover. Change % in turnover can be seen in Appendix 5. Supercell financial ratios 2012-2016. The peak was in 2013 when 51% of the company was acquired by Softbank and its subsidiary Gungho.

Liquidity

The chosen liquidity ratios for this horizontal analysis are quick ratio and the working capital - %. The following figure illustrates the changes in Supercell's quick ratio between the years 2012-2016:

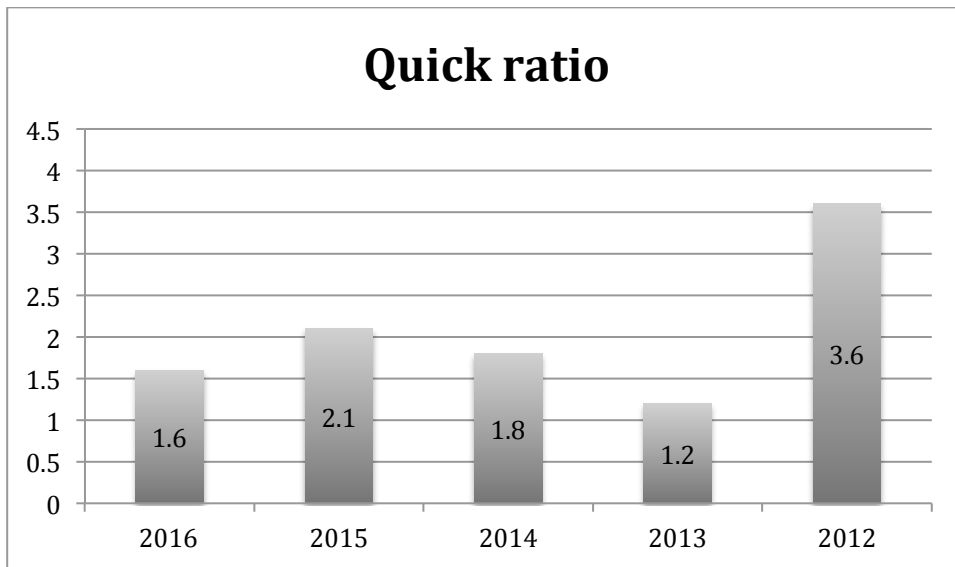


Figure 16. Quick ratio for 2012-2016
Source: based on data from Appendix 5

By looking the figures, it seems that Supercell does not have any troubles by getting through the current liabilities by using current assets, but once again this does not tell the whole truth. Like mentioned previously, if the rate is above one, it will be considered as a good rate. Even though the ratio has remained as a good level, the development of the ratio is sloping downwards. The reason is the short-term debts that have increased over 800,000,000 EUR during the years.

Luckily the amount of current assets is also increased, but as the development of ratio shows, the liabilities are increasing faster. For example, the drop from 2,1 to 1,6 between the year 2015 and 2016 occurred because the amount of short-term liabilities grew, but the amount of current assets decreased. The peak was in 2012, and it was caused by the release of the games "Hay Day" and "Clash of clans," which caused the increased in sales and therefore increase in current assets. The changes in current assets and in short-term liabilities can be seen in Appendix 3. Balance sheet summary 2012-2016.

The second chosen ratio was working capital -%. The figure below shows the ratio variance in years 2012-2016:

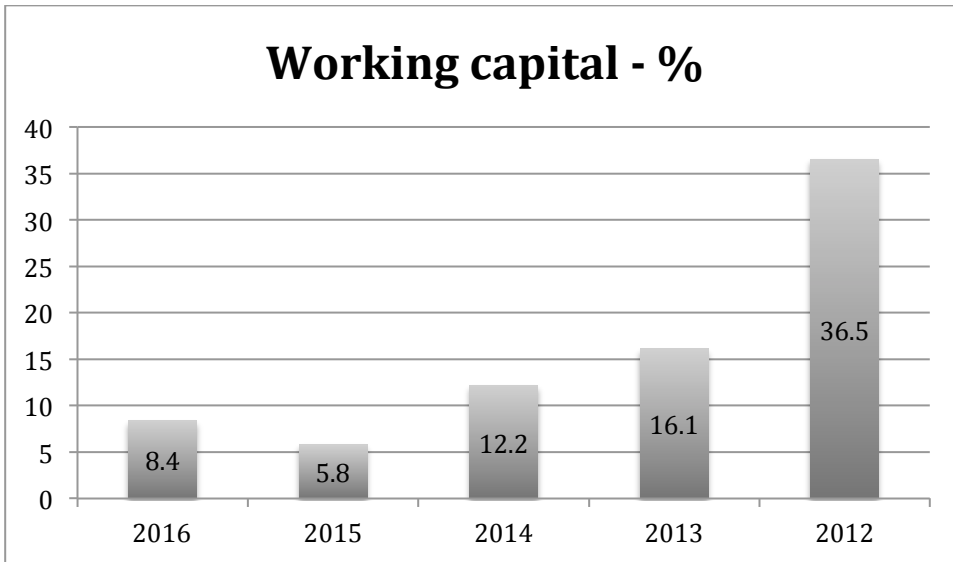


Figure 17. Working capital - % for 2012-2016

Source: based on data from Appendix 5

Working capital -% has also been declining since 2012. The reason is the growth, which in this case has been rapid. Supercell has made investments in order to increase the turnover, but this ties up capital before the investments are generating cash inflow. The development of the ratio indicates that as the company grows, more capital is tied in the investment and therefore the level of the ratio is decreasing. However, this is a quite normal trend for a growth company. The ratio was higher in 2016 than in 2015, which exception towards the development compared to other years, the reason that is in 2015 more investments were made. The ratio is on a satisfying level.

Solvency

The solvency ratios presented in the horizontal analysis part are the net gearing and equity ratio - %. The following figure below illustrates the equity ratio - % changes during years 2012- 2016:

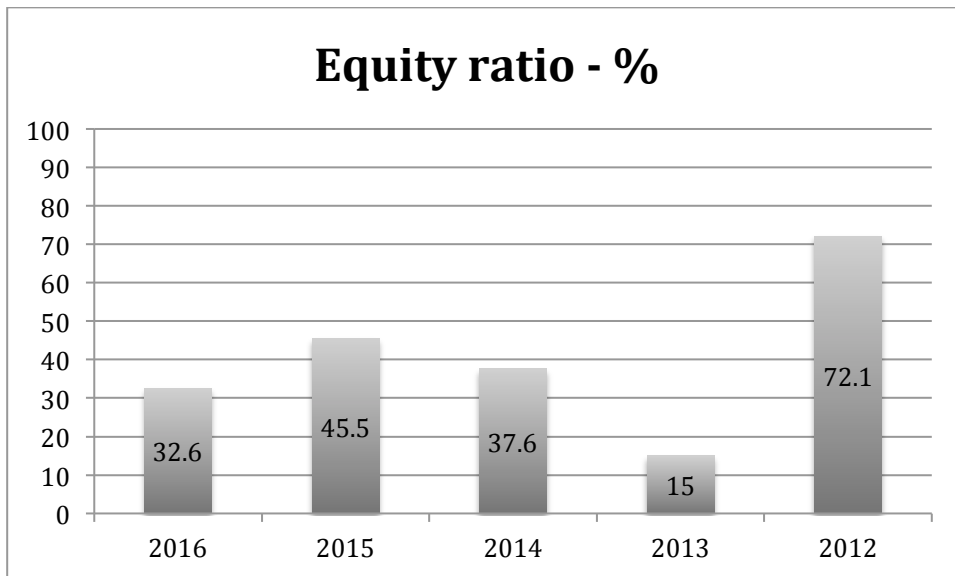


Figure 18. Equity ratio - % for 2012-2016

Source: based on data from Appendix 5

As like the previous ratios, also equity ratio -% is declining. The reason is pretty simple, during the years when the company grows, it has used more and more external capital to finance its operations and resources. This can be seen as an increase in long-term liabilities and in short-term liabilities, which can be seen in Appendix 3, Balance sheet summary 2012-2016. Also, the increase in financial expenses indicates this, which can be seen in Appendix 1, Income statement summary 2012-2016. The peak of Equity ratio was in 2012 when the company was basically financed with the founder's own savings. The lowest point of equity ratio was in 2013 when the merger took place. Since then Supercell has increased the ratio. Based on the general guidelines presented earlier in this thesis, Supercell is operating in the satisfying level. However, the author points out that this measurement is static, since it measures the ratio at a certain time.

The net gearing is one of the most popular solvency ratios and therefore is presented in the horizontal analysis part. The chart below illustrates net gearing in 2012-2016:

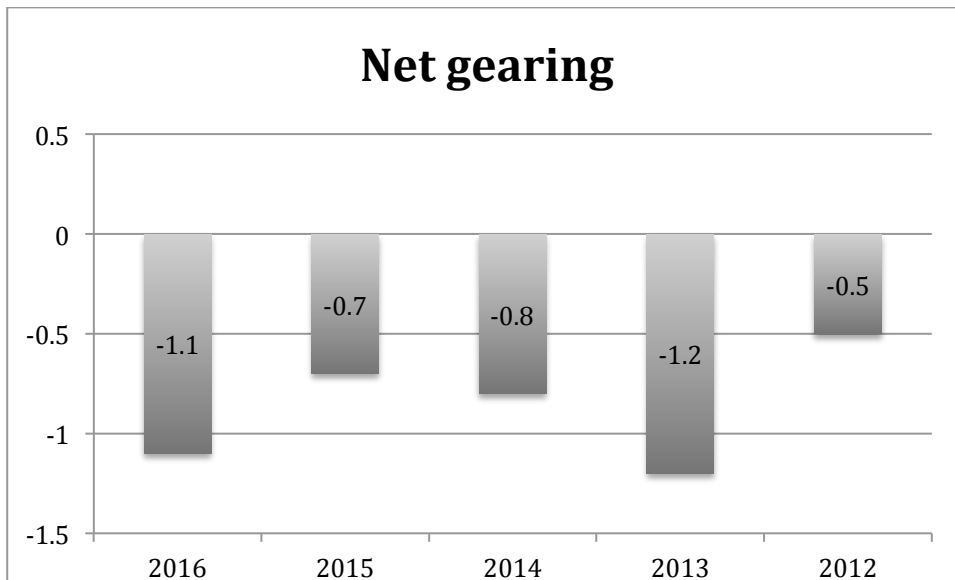


Figure 19. Net gearing for 2012-2016
 Source: based on data from Appendix 5

By looking the ratios of net gearing during the years presented, the level of gearing has been at least on a satisfying level according to general guidelines for net gearing. Supercell has managed to lower the ratio to -1.1 in 2016, which is, in this case, is the aim. Also, the ratio -1.1 can be described as an excellent result. According to this ratio, it seems that Supercell has no troubles with interest-bearing liabilities, however, this ratio gives the wrong picture of the company solvency since it does not take interest-free liabilities into account. For example, by looking the general guidelines the ratio in 2016 was -1,1, which can be described as an excellent rate, but as said Supercell has a lot of interest-free liabilities and this ratio does not take them into account. Evidence to support this can be found in Appendix 5, Supercell financial ratios 2012-2016. The net gearing ratio has improved over the years in relation to general guidelines even though the equity ratio has declined.

5.2 Cross-sectional analysis

Cross-sectional analysis means that the specified company's financial ratios are compared to other companies or to the industry benchmark figures. In this case, the specified company is Supercell Ltd and it is compared to industry benchmark figures, also known as industry averages. Cross-section analysis is the most used method when the companies are reasonably comparable, therefore the Supercell is compared to companies operating in the same industry in Finland, due

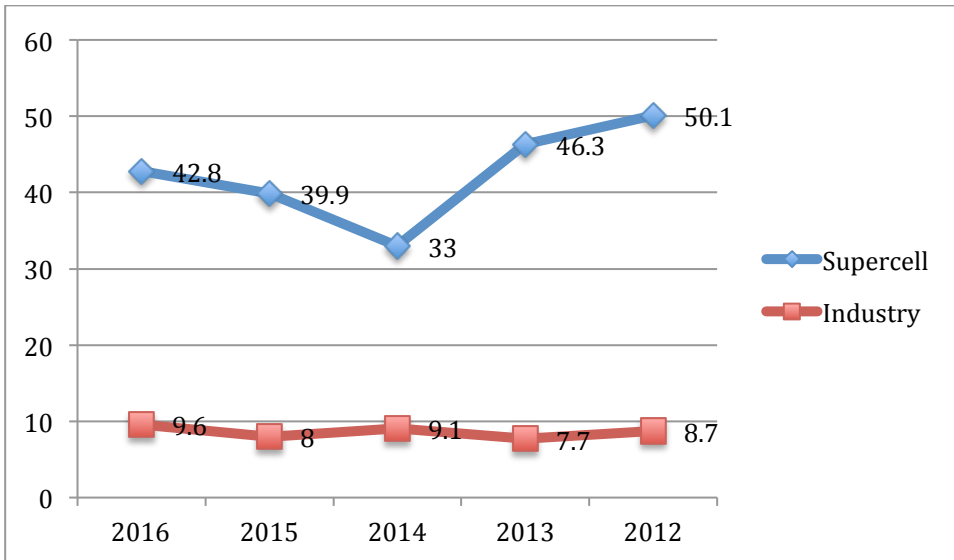
to the similar accounting methods (Samonas 2015). The industry averages are found in the appendix as well as Supercell's financial statements and financial ratios. In this case, the benchmarks are the whole Finland's averages in 2016 from the industry known as 62020 in Finnish industry system (Asiakastieto 2018). The industry contains 1587 different companies, the risk of bankruptcy in the industry is 0,2 %, and the risk of payment defaults is 4,6%, which is close to the median of all companies in general (Asiakastieto 2017). All the results are presented in graphs or in tables in order to show the differences between Supercell ratios and the industry averages, except the analysis of the volume.

Volume

Supercell's turnover is 2,100,000,000 EUR, which is very big compared to all operating companies and notably bigger than industry average 102,000,000 EUR. This reduces the risks of the company, since the company has several resources related to its size. This can be seen in Appendix 6, Industry financial ratios 2012-2016. The turnover for Supercell is on the similar level than in the previous year. In the long-term aspect, the development of the turnover has been exceptional fast, however, if compared the years 2015 and 2016, the level of turnover has decreased, which is not favourable direction. Supercell's turnover during the years can be seen in Appendix 5, Supercell financial ratios. In the year 2016, the average amount of employees was 144, and the turnover per person was 14,580,600 EUR, which is very good compared to the industry median, which was 94,000 EUR per person. Thus, the labour productivity is on a high level, and the development in the long-term has been very favourable.

Profitability

The first profitability ratio taken into account in this cross-section analysis is EBITDA -%. The following graph illustrates the EBITDA-% changes for Supercell and the variance of the industry average:



Graph1. EBITDA - % for 2012-2016

Source: based on data from Appendix 5 & Appendix 6

As the graph shows, Supercell's EBITDA -% is very good in comparison to the industry median. Actually, the rate has been much higher since 2012. This implies an exceptional good cash flow financing and indicates that the relative operating efficiency is better compared to industry average. The exact rates can be found in Appendix 5 and in Appendix 6.

The second ratio presented for profitability is the return on investment as percentages. Since the Supercell's ratios are on a totally different level than the industry averages, it's hard to make a clear graph to illustrate the difference, the author chose to present this comparison as in the following table:

Table 7. ROI-% for 2012-2016

ROI-%	Industry	Supercell
2016	8,7%	129,7%
2015	5,9%	122,6%
2014	6,3%	186%
2013	5,8%	707,3%
2012	6,2%	171,2%

Source: based on data from Appendix 5 and Appendix 6

The return on investment rate is pretty huge for Supercell. The rate has been over ten times bigger than the industry median, starting from the year 2012. The level of this rate indicates that Supercell has really good functionality possibilities and it has generated great profits to its investors. The reason for such high ratios is the rapid and huge growth the company has achieved over the years since the profits have been bigger than invested capital in relation. However, even the rate is on this level, the development has not been favourable thus the rate is declining. The portion of investments per year is growing faster than profits. In the year 2013, the merger, and the releases of the first games in 2012 increased the profits, also the amount of investments started to increase during the year 2014, which is one reason to such high rate in 2013. As the amount of short-term and long-term liabilities started increasing from 2014, also the rate has sloped downwards. Changes in liabilities can be seen in Appendix 3.

Return on assets is also presented in the table form for the same reason as return on investments. The table below shows the rates for industry and Supercell:

Table 8. ROA-% for 2012-2016 (percentages)

ROA - %	Industry	Supercell
2016	7,5%	61,6%
2015	4,7%	62%
2014	4,9%	77,5%
2013	4,6%	199,5%
2012	5,1%	132,3%

Source: based on data from Appendix 5 and Appendix 6

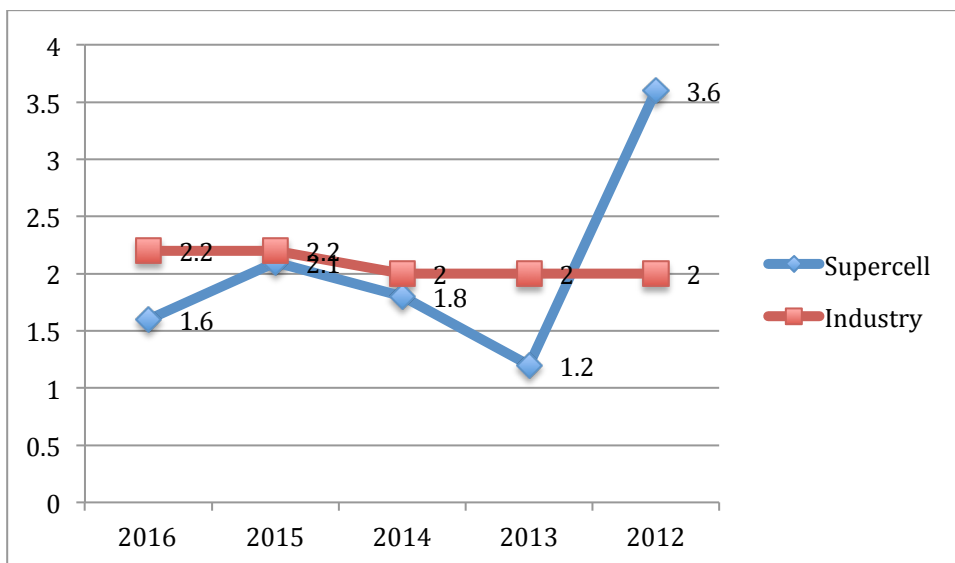
In case we take the interest-free liabilities into account, we can see that the return on assets rate is much lower than the return on investment. This rate is also declining, pretty much for the same reasons than the return on investment. Even though the rate of return on investment and return on asset is on such high-level due the rapid growth and increase in profits, this gives the wrong picture of the overall condition. Supercell has been very profitable if measured by these ratios, but the direction of the development and the huge increase in interest-free liabilities indicates problems. The general guidelines provided by the Finnish accounting board suggest that over 10% return on asset is considered as a good rate, so it is fair to say that Supercell is on an excellent level in comparison to the general guidelines. When comparing the ratios to industry

benchmarks, the return on assets for Supercell is extremely good and way above the industry median with both rates, which might indicate that the company has some sort of competitive advantage.

Liquidity

The liquidity ratios presented in this cross-section analysis are the current ratio, working capital - %, account receivable turnover days, and the account payable turnover days.

The following graph illustrates current ratio changes in the industry and for Supercell between the years 2012-2016:



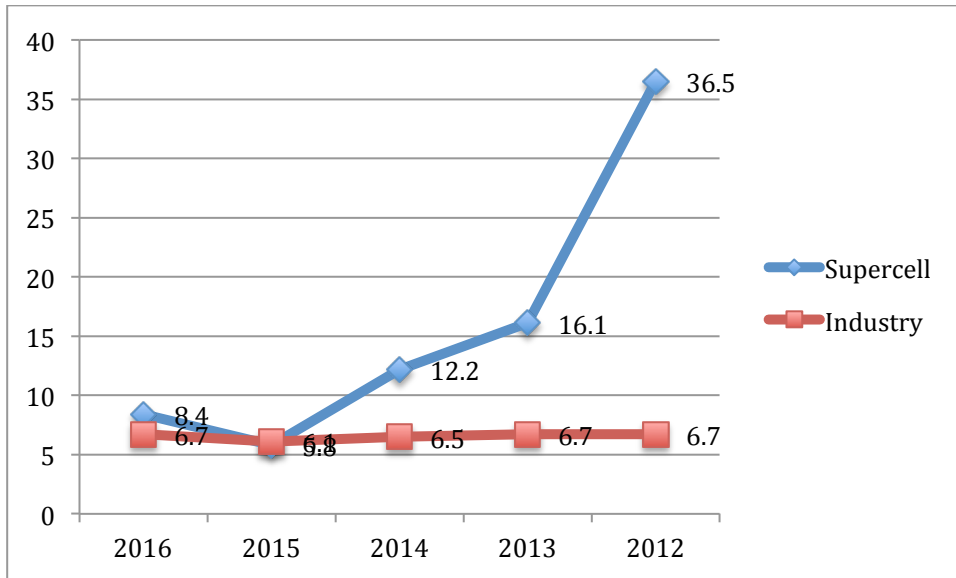
Graph 2. Current ratio for 2012-2016

Source: based on data from Appendix 5 and Appendix 6

The development of current ratio is also not very favourable even though the company has managed to keep the rate on a satisfying level. The drop of the rate in 2013 occurred due to a huge increase in short-term liabilities while the financial assets did not increase as in similar relation. The development of the relation between short-term liabilities and financial assets improved during years 2014 and 2015 which lead to the increase of the current ratio on a good level, if compared to general guidelines. However, in 2016 the amount of short-term liabilities remained increasing while the financial assets decreased and the ratio dropped back to satisfying level. The changes in financial assets and short-term liabilities can be seen in Appendix 3. The current ratio for Supercell has been lower than the industry median, except in the year 2012. In

case the ratio is over 2, it's considered as a good rate, and the industry median has been at least two or little over.

The second liquidity related ratio is the working capital -%, and the following graph shows the results for years 2012-2016:

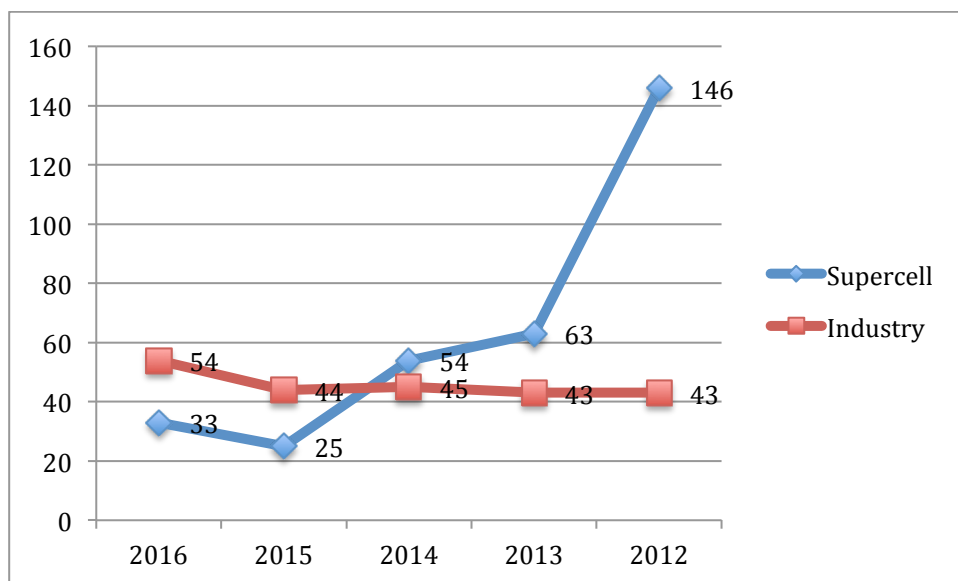


Graph 3. Working capital - % for 2012-2016

Source: based on data from Appendix 5 and Appendix 6

The working capital-% follows the development of current ratio as the relation between current assets and current liabilities affects it as well. As the amount of the current liabilities increases, it reduces the amount of working capital in case the current assets do not grow on the similar relation. This is the reason for such drop in 2013 as the current liabilities grew over 140,000,000 EUR; also the growth plays a role in the form of rapidly increased turnover. At this point the author would like to point out that Supercell is operating in the technology-based industry and this industry does not require high working capital since the operational expenses are quite stable regardless of sale fluctuations, the low variance of industry average supports the statement. If we look the Appendix 3, we can see that Supercell has started to make investments in long-term assets in the form of an increase in long-term liabilities starting from 2014. This reduces the company's total assets and its net working capital, which leads to a decrease of working capital-%. One reason might be that Supercell is purposely reducing the level of working capital -% and aiming closer to industry benchmark figure.

The change in account receivable turnover days are presented in the graph below:

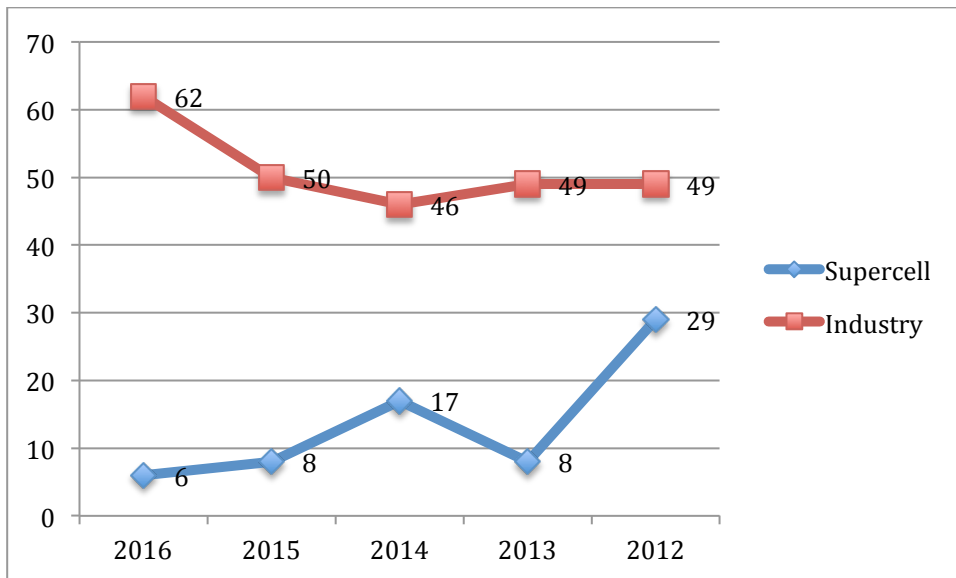


Graph 4. Account receivables turnover days for 2012-2016.

Source: based on data from Appendix 5 and Appendix 6

The ratio has declined since 2012, this is not a good sight when the ratio is telling how many times the receivables converted into cash each year. This indicates that the company has problems with cash collections or revenue recognition. However, the tighten credit-terms and improved debt collection reduces the rate. Factoring reduces the rate, and it might explain the big drop in 2013 and the following development of the ratio. The industry average variance is quite stable over time, and the latest rate for Supercell is 33 days, which is pretty short turnover rate while compared to industry median.

Last but not least ratio related to liquidity is the account payable turnover days, the following graph shows the rates in 2012-2016:

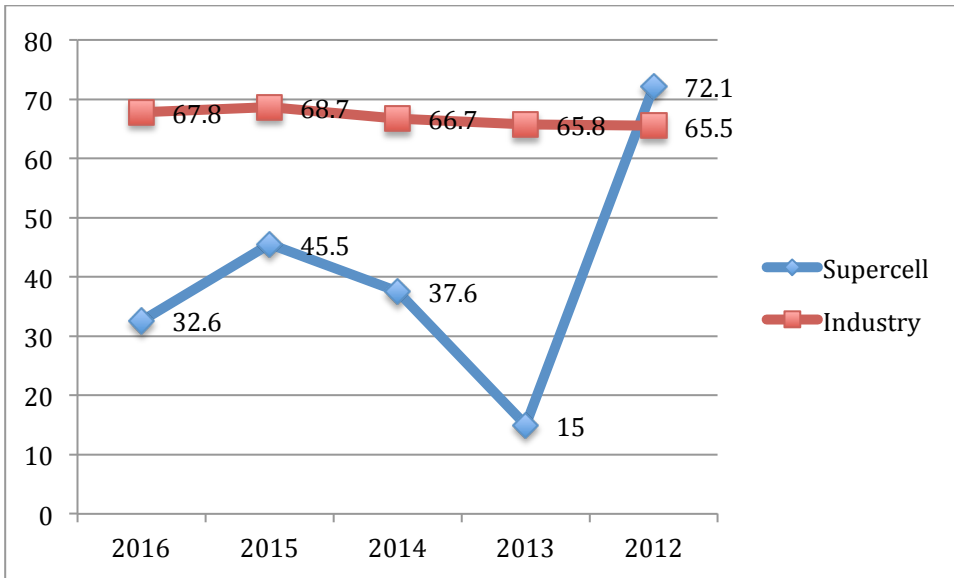


Graph 5. Account payable turnover days for 2012-2016
 Source: based on data from Appendix 5 and Appendix 6

Like the account receivables turnover days, also this ratio is declining. This is not favourable direction and Supercell is way under the industry median. This indicates that Supercell is paying the payments less than ten days while the industry is paying in 62 days on average, this might indicate that Supercell has shorter credit-term than industry average or Supercell is effective in taking advantage of credit terms. As the turnover is better than industry and Supercell is collecting money faster than industry, but the payable turnover differs much from the industry, the author does not have enough information to make clear statements for changes in financial stability.

Solvency

This cross-section analysis contains two solvency related ratios. These ratios are equity ratio -% and the leverage ratio -%. Equity ratio as in percentage for the years 2012-2016 are presented in the graph below:

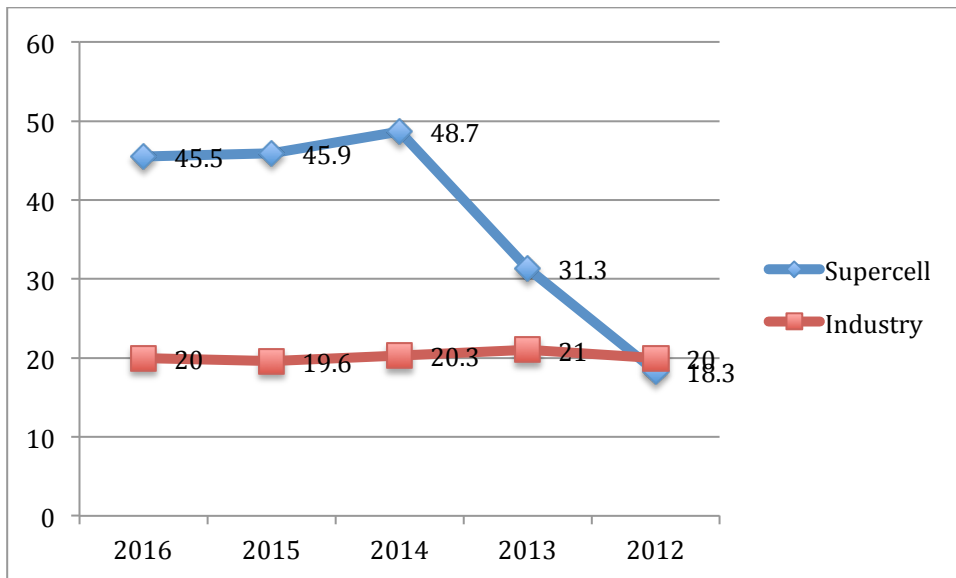


Graph 6. Equity ratio -% for 2012-2016

Source: based on data from Appendix 5 and Appendix 6

The equity ratio development is not good for Supercell. The ratio has declined from 2012, but as said this is a quite usual trend as the company is growing. Reasons are explained in the horizontal analysis section but the main factor driving the rate down is the increase in short-term liabilities, which also caused such change between 2012-2013. Equity ratio -% is dependent on the industry, and if we compare the average figures to Supercell, we can state that the ratio for Supercell is not good. In relation to general guidelines for equity ratio -%, Supercell is on a satisfying level, but as the graphs show, the "target" rate in this industry would be somewhere between 60-70% and compared to that the Supercell's rate is for recent years is pretty weak. The overall variance is also much greater for Supercell than the industry, but this is mainly caused by the growth.

The second ratio taken into account for this cross-section analysis is the leverage ratio -%. The following graph below illustrates this ratio changes in 2012-2016:



Graph 7. Leverage ratio -% for 2012-2016.

Source: based on data from Appendix 5 and Appendix 6

As seen in the graph, the development of the leverage ratio -% has not been that favourable for Supercell. While the industry median has remained quite the same during the years, the ratio for Supercell has increased. The direction of the ratio development is caused by the increase in liabilities over the years even though the turnover has increased, thus the amount of equity has decreased. This means that Supercell has financed its assets by using more debt and other liabilities. The merger took place in 2013, and the possible changes in financing decisions could explain the variance but the author does not have such information in order to make such conclusions. Compared to the industry average, Supercell seems to be a riskier company than average in the industry.

5.3 Author's analysis

In this part of the thesis paper, the author will provide an analysis of the results presented in the earlier stages of the thesis paper. The author does not have any other information of the company than presented or what can be found in the appendix. Since the financial statements and the variance of financial ratios are all the information used in this thesis paper, this analysis alone should not be used in making investment decisions. In case additional information is held, the analysis could be utilized when investigating the company. This fact can also be seen as a potential factor for additional research.

The author thinks that the overall picture of the company is not that positive what one might think when looking just the profitability ratios. When looking the horizontal analysis, the development of the financial ratios is not favourable in general. When comparing to them to industry averages, the picture got worse. The technology industry cannot be compared to general guidelines that are designed for manufacturing companies, but they give perspective and some insights. Supercell is relatively young company since it was founded in 2010. In six years the growth has been stunning, and in the investing world Supercell could be named as a "unicorn." This term means that it is pretty rare for a company to grow at this level within such short period of time. In the cross-section analysis, Supercell seems to be on total different league than the average companies. By looking the financial ratios such as ROI-% or ROA-%, the difference is so big that it raises questions such as too good to be true?

In order to able to answer the empirical research question, the author of the paper executes the horizontal and cross-section analysis. The following parts of the thesis consist of the author's analysis of profitability, liquidity, and solvency.

Supercell has been very profitable company since 2012. The EBITDA-% is on a very good level and much higher than the median in the industry, which is the outcome of extremely good cash flow financing. Also, the EBIT-% is notably good compared to the industry median, which means Supercell has a higher margin than the average company within the industry, however, the rate is almost the same despite the minimal changes. One of the key financial ratios in profitability is ROI-%, this ratio is unbelievably good for Supercell, since it has managed to generate over 100% return on investment for six years in a row. This indicates that Supercell has very good functionality possibilities. Return on assets is notably lower than the return on investment because Supercell has quite a big amount of interest-free liabilities. However, the profitability rates give the wrong picture of the company. Even though the level of the rates is very high and above industry averages, the development of the ratios have been unfavourable thus they are all declining. Supercell should reduce the operating expenses or increase the turnover in order to turn the development direction for EBIT-% and EBITDA -% ratios. High ROA-% and ROI-% rates compared to industry benchmarks generally tell that company has operated relatively more efficiently and profitably, but as explained in cross-section analysis part, the reason is a rapid development of profits in relation to invested capital. As the portion of

invested capital and liabilities grew, the rates started to decline, and therefore its one reason more to increase the level of profits in case everything else remains the same.

The liquidity rates are not as good as the profitability ratios. When looking at the current ratio, it is on the satisfying level but below the industry median. Even though the company is highly profitable, the liquidity rates indicate problems. The quick ratio and current ratios are the exact same for every year since Supercell does not have any inventories. When taking account payable turnover and account receivable turnover rates into account, more data and information should be held for making a statement towards Supercell's financial stability.

The solvency is also not on a good level if measured only by equity ratio-%. This ratio is notably below the industry average, also the leverage ratio -% is above the industry media, which in this case is not good since it means Supercell uses more debt and liabilities to finance its assets than the average company in the industry. The net gearing ratio is very good for Supercell, however, this ratio does not take interest-free liabilities into account, and therefore it gives wrong the wrong picture. So by adding all to together, the author's conclusion is that even though the company has been highly profitable, it might have some liquidity problems and Supercell seems to be riskier than the average company in the industry. However Supercell has a lot of resources and the as the new major shareholder is Tencent, the author believes that if this analysis were done after the next few years, the overall picture would be different. The author thinks that traditional financial ratio analysis is enough effective method to get insights of a technology company, and the standard comparison of the ratios work. However, in order to produce a comprehensive analysis of technology company, more advanced methods and more specific information about the company, its protocols, and decision-making preferences is required.

CONCLUSION

The aim of this thesis is to prove that traditional financial analysis is enough effective method to investigate and looking insights for technology company Supercell Ltd. The paper is compiled of theoretical aspect and empirical aspect. The author's focus is on financial ratios and analysis of them based on profitability, liquidity, and solvency.

Theoretical questions are answered in the firsts parts of the thesis, such as financial ratio is the outcome of the equation where two or more numerical values from the company's financial statements are taken into account. These ratios are used in the evaluation of the economic performance of the company and can be utilized both, externally and internally. In order to calculate financial ratios, reliable financial statements are required with actual numbers of the company. The main results rely on the empirical research questions, which are answered by using the analyses. With horizontal analysis, the author was able to find out the recent trends of the ratios for Supercell by comparing them to historical events. Declining ratios, as a result, were quite surprising for the author since the personal image of the case company was pretty different before the analysis. The cross-section analysis answered the question does some ratios work better than the others, and the result was simple. In case of a technology company, some ratios can be utilized more easily than others while comparing to the industry. Certain ratios required additional information in order to make statements about the situation. The author also mentioned personal aim, which was gaining a deeper understanding and improve knowledge on the matter. The author finds this aim fulfilled.

Author's conclusion towards the hypothesis is that financial ratio analysis can be used when investigating technology Company, however, the general guidelines give just direction, and the comparison between a similar company or within the industry is required because the comparison to general standards gives a wrong and too good picture of the company. Also in order to produce comprehensive analysis, more advanced and complex methods with more

company-specific information is required. Some of the ratios work better than others, for example, is pretty impossible to calculate inventory related ratios such as inventory turnover since Supercell does not have any inventories. However, the Author thinks that is it possible to get insights from Technology Company by using financial ratio analysis as this thesis paper proves.

In Author's opinion of the assessment of conclusion is that the conclusions are on the line with the results of the paper. The author believes that the research field for seeking the financial performance and condition towards technology companies will improve in short-term future as more and more technology and high tech start-ups arise. The author believes that applicability of conclusions is somehow limited as the author is not expert or professional in the field. However, this paper arises further research possibilities such as what's really behind the high ROI and ROA rates and why they differ so much. Also, the author finds interesting the possible further research on how the organisation structure affects the performance of gaming companies.

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APPENDIX

Appendix 1. Income statement summary 2012-2016 (k EUR)

Particulars	31.12.2016	31.12.2015	31.12.2014	31.12.2013	31.12.2012
Sales	2.099.601,0	2.109.181,6	1.545.453,0	519.093,4	78.358,0
Other operating income			1	3	91
Materials and services	-793.998,0	-901.383,6	-849.657,0	-249.907,0	-33.481,0
Gross profit	1.305.603,0	1.207.797,9	695.797,0	269.189,5	44.968,0
Other operating costs	-405.926,0	-365.394,0	-186.567,0	-29.028,9	-5.676,0
Depreciation	-1.494,0	-942,1	-579	-376,2	-112
Operating profit	898.183,0	841.461,8	508.651,0	239.784,3	39.179,0
Financial income	85.540,0	83.159,8	32.279,0	2.286,2	51
Financial expenses	-46.177,0	-48.504,7	-1.477,0	-12.861,1	-264
Profit before extraordinary items	937.546,0	876.116,8	539.453,0	229.209,3	38.967,0
Profit before appropriations and taxes	937.546,0	876.116,8	539.453,0	229.209,3	38.967,0
Income taxes	-192.631,0	-185.115,3	-118.259,0	-56.619,2	-9.030,0
Profit/loss for the financial year	744.915,0	691.001,5	421.194,0	172.590,1	29.937,0

Appendix 2. Income statement 2016 (k EUR)

Particulars (k EUR)	31.12.2016
Turnover	2.099.601,0
<u>Raw materials and services</u>	
External services	(793.998,0)
<u>Staff expenses</u>	
Wages and salaries	(78.433,0)
<u>Social security expenses</u>	
Pension expenses	(3.775,0)
Other social security expenses	(1.356,0)
<u>Depreciation and reduction in value</u>	
Depreciation according to plan	(1.494,0)
Other operating expenses	(322.362,0)
Operating (loss) profit	898.183,0
<u>Financial income and expenses</u>	
Income from other investments held as non-current assets	703
Other interest income and other financial income	84.837,0
Interest and other financial expenses	(46.177,0)
Profit (loss) before extraordinary items	937.546,0
Profit (loss) before appropriations and taxes	937.546,0
Income taxes	(192.631,0)
Profit (loss) of the financial year	744.915,0

Appendix 3. Balance sheet summary 2012-2016 (k EUR)

Particulars	31.12.2016	31.12.2015	31.12.2014	31.12.2013	31.12.2012
Intangible assets	1.669,0	1.089,2	692	902,1	68
Tangible assets	3.106,0	1.739,5	769	592,5	107
Investments	8.522,0	1.441,0	198	199,6	38
Inventories	0	0	0	0	0
Current assets	1.402.835	1.772.356	1.203.374	189.580,4	51.215
Subscribed capital	3	2,5	3	2,5	3
Reserves	4.528,0	21.221,7	4.525,0	1.692,1	9.252,0
Retained earnings(loss)	(287.812,0)	96.328,2	27.044,4	(145.546,3)	(2.113,0)
Profit(loss) for the financial year	744.915,0	691.001,5	421.194,0	172.590,1	29.937,0
Capital notes	0	0	0	0	0
Accrual of appropriations	0	0	0	0	0
Provisions	0	0	0	0	0
Long-term liabilities	90.824,0	143.835,3	90.153,0	0	0
Short-term liabilities	863.674,0	824.236,5	662.116,0	162.536,2	14.350,0
Ending balance	1.416.132,0	1.776.625,7	1.205.034,0	191.274,6	51.428,0

Appendix 4. Balance sheet 2016 (k EUR)

Assets		Equity and Liabilities	
<u>A non-current assets</u>		<u>Capital and reserves</u>	
Intangible rights	184,0	Subscribed capital	3,0
Other capitalized long-term expenditures	1.485,0	Fair value reserve	50,0
<u>Tangible assets</u>		<u>Other reserves</u>	
Machinery and equipment	3.106,0	Other reserves	4.478,0
<u>Investments</u>		Retained earnings (loss)	(287.812,0)
Holdings in group member companies	8.522,0	Profit (loss) of the financial year	744.915,0
<u>Current assets</u>			
<u>Long-term receivables</u>		<u>Long-term liabilities</u>	
Amounts owed by participating interest companies	9.438,0	Accruals and deferred income	90.824,0
Loans receivables	10,0	<u>Short-term liabilities</u>	
Prepayments and accrued income	27.247,0	Trade creditors	12.897,0
<u>Short-term receivables</u>		Amounts owed to group member companies	6.028,0
Trade debtors	189.065,0	Other creditors	7.806,0
Amounts owed by group member companies	116,0	Accruals and deferred income	836.943,0
Other debtors	306.478,0	Ending balance	1.416.132,0
Prepayments and accrued income	273.716,0	-	-
<u>Investments</u>		-	-
Other investments	95.050,0	-	-
<u>Cash in hand and at banks</u>	501.715,0	-	-
Ending balance	1.416.132,0	-	-

Appendix 5. Supercell financial ratios 2012-2016

Year	31.12.2016	31.12.2015	31.12.2014	31.12.2013	31.12.2012
<u>Volume</u>					
Turnover kEUR	2.099.601,0	2.109.181,6	1.545.453,0	519.093,4	78.358,0
Change in turnover %	-0,5	36,5	197,7	562,5	9.999,0
Turnover kEUR/employee	14.580,6	15.978,6	10.442,3	5.190,9	1.506,9
<u>Profitability</u>					
EBITDA %	42,8	39,9	33	46,3	50,1
EBIT %	42,8	39,9	32,9	46,2	49,9
Return on investment %	129,7	122,6	186	707,3	171,2
Return on assets %	61,6	62	77,5	199,5	132,3
<u>Liquidity</u>					
Quick ratio	1,6	2,1	1,8	1,2	3,6
Current ratio	1,6	2,1	1,8	1,2	3,6
<u>Solvency</u>					
Equity ratio %	32,6	45,5	37,6	15	72,1
Net gearing	-1,1	-0,7	-0,8	-1,2	-0,5
Leverage ratio %	45,5	45,9	48,7	31,3	18,3
<u>Working capital</u>					
Working capital %	8,4	5,8	12,2	16,1	36,5
Account receivable turnover days	33	25	54	63	146
Account payable turnover days	6	8	17	8	29

Appendix 6. Industry financial ratios 2012-2016

Year	31.12.2016	31.12.2015	31.12.2014	31.12.2013	31.12.2012
Companies	1.587	1.581	1.594	1.519	1.496
<u>Volume</u>					
Turnover kEUR	102	83	83	83	85
Change in turnover %	1,3	0	0	-1,2	0
Turnover kEUR/employee	94	89,8	88,5	85	91,6
<u>Profitability</u>					
EBITDA %	9,6	8	9,1	7,7	8,7
EBIT %	7,1	5,8	6,3	5,2	6,2
Return on investment %	8,7	5,9	6,3	5,8	6,2
Return on assets %	7,5	4,7	4,9	4,6	5,1
<u>Liquidity</u>					
Quick ratio	2,2	2,1	2	2	2
Current ratio	2,2	2,2	2	2	2
<u>Solvency</u>					
Equity ratio %	67,8	68,7	66,7	65,8	65,5
Leverage ratio %	20	19,6	20,3	21	20
<u>Working capital</u>					
Working capital %	6,7	6,1	6,5	6,7	6,7
Account receivable turnover days	54	44	45	43	43
Account payable turnover days	62	50	46	49	49