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Bachelor Thesis

Financial analysis of a chosen firm

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Declaration

I declare that this bachelor thesis has been composed by myself and that the work has not been submitted for any other degree or professional qualification. I confirm that the work submitted is my own, except where work which has formed part of jointly-authored publications has been included. I declare that I have worked on my bachelor thesis titled "Financial analysis of a chosen firm" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on 30/11/2021

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Financial Analysis of Chosen Firm

Abstract

This bachelor thesis aims to evaluate the financial health of a selected company, which is Samsung Electronics Co., Ltd . The period taken under consideration is from 2010 to 2020 . This work intends to help, either internal or external users, to have a better understanding of the company's financial site, including all its activities. Therefore, to conduct a financial analysis, the company's financial statements have been taken as a source of data and analysed by the tools of this analysis. The thesis itself will consist of two major parts: theoretical background and practical work. In the first part, there will be provided the literature review of the chosen methodology, where each aspect of financial analysis will be described. It includes a detailed explanation of every relevant tool and technique applied in this analysis. In the practical work part, there will be a practical approach to the literature review provided in the first part. Therefore, it is an interpretation and explanation of data analysis of the chosen period. The data will be presented in the form of tables.

Keywords: Financial analysis, financial ratios, horizontal analysis, vertical analysis

Finanční analýza vybrané firmy

Abstrakt

Tato bakalářská práce si klade za cíl zhodnotit finanční zdraví vybrané společnosti, kterou je Samsung Electronics Co., Ltd. Období analýzy je od roku 2010 do roku 2020. Cílem této práce je pomoci interním i externím uživatelům získat přehled o finanční stránce společnosti včetně všech jejích aktivit. K provedení finanční analýzy je proto třeba brát finanční výkazy společnosti jako zdroj dat a analyzovat pomocí nástrojů této analýzy. Samotná práce bude sestávat ze dvou hlavních částí: teoretického základu a praktické práce. V teoretické části bude poskytnut literární přehled vybrané metodiky. Očekává, že tam budou popsány všechny aspekty finanční analýzy. Zahrnuje podrobné vysvětlení všech příslušných nástrojů a technik použitých v této analýze. V praktické části bude proveden praktický přístup k literární rešerši uvedené v první části. Jde tedy o interpretaci a vysvětlení analýzy dat za zvolené období. Data budou prezentována ve formě tabulek.

Klíčová slova: Finanční analýza, finanční ukazatele, horizontální analýza, vertikální analýza

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List of abbreviations

CF: cash flow

CR: cash ratio

COGS : cost of foods sold

CuR: current ratio

EBIT: net profit before tax and interest

EBT: net profit before tax

ICR: interest coverage ratio

QR: quick ratio

ROA: return on assets

ROE: return on equity

US: United States

USD: United States Dollar

1 Introduction

Numerous business owners and managers have found that insight gained from their examination of company financial statements can be inestimable. Companies can benefit from such insight into their profitability, cash flow, and value. Financial analysis helps to control business operations, plan, make decisions, find out how the business is performing.

The purpose of the bachelor's thesis is to give students an opportunity by working in depth with a limited subject area to independently demonstrate their ability to formulate a business-related topic, select relevant literature, process data, conduct analyses, apply methodologies, make critical assessments, and present answers to questions raised in the problem statement. In my opinion, working on a thesis gives the opportunity for students to study and practice more in their interested field. After working few years in the finance team, I understood that financial analysis is one of the most important skills in the financial field. The ability to read and comprehend financial data, as well as present information in the form of financial reports, is very challenging and stimulating. Consequently, I chose financial analysis as my bachelor thesis topic to challenge myself and practice my skills.

The first part is theory and methodology, and it focuses on explaining the financial analysis, as well as financial ratios, and indicators. The second part will include a general overview of the company, using methods and indicators from the first part to illustrate the results from chosen company. One important tool that can help sort out the data we need is the ratio analysis.

Ratio analysis looks at the relationships between key numbers on a company's financial statements. After the ratios are calculated, they can be compared to industry standards and the company's past results, projections, and goals to highlight trends and identify strengths and weaknesses.

2 Objectives and Methodology

2.1 Objectives

This bachelor thesis is devoted to the evaluation of a selected company's financial performance with the use of financial analysis such as horizontal, vertical and ratio analysis with the addition of competitors analysis and in industry overview.

The theoretical part generally characterizes financial analysis which are mentioned in the beginning and other related topics.

In the practical part, selected methods will be applied to the data obtained from company's financial statements and the evaluated findings. Furthermore, analysis will be performed by comparing the selected ratios towards the company's main competitors which are in direct competition with the company. Evaluation will be done by comparing liquidity, profitability, leverage and activity ratios between the companies. Therefore, this approach perform a more detailed overview than a general industry average.

In the end of the practical part this bachelor thesis, should be able to answer the following research questions.

- *Is Samsung electronics financially healthy?*
- *Is Samsung electronics good choice for investment?*
- *How the current situation will effect/affecting the company?*

2.2 Methodology

Relevant scientific literature will be used for the theoretical part, while the financial statements of the chosen company will be the main source that will provide data for the practical part of the bachelor thesis.

3 Theoretical part

3.1 Main sources of Financial Analysis

Financial analysis is a transformation of the data to financial metrics, which assists in an aspect of the overall business finance function that involves examining historical data to gain information about the current and future financial health of a company.

Users of financial information:

- Shareholders and investors (financial information is used for determining value of the investment – usually from annual reports)
- Financial analysts (it is hard to understand financial reports and their connections, so analysts provide and advise their client/investors)
- Management (for operating decisions)
- Lenders (banks and other institutions uses the information to know whether their loans are going to be repaid)
- Taxation or other authorities (determining whether the company recorded their financial information in line with the regulation in order to prevent customers from fraud)
- Employees (secure their future)

Financial analysis can be seen in following approaches:

- First approach is financial analysis of an investment standpoint. Analysis can be identified through investment evaluation and the accounting divisions are using tools to reflect capital expenditures or financing options. This approach is to quantify the returns on investments and also to create an overview of suitable financing options.
- Secondly, is the financial analysis is beneficial to the management who are directly involved in decision making process. It is continuing process of monitoring the current process within the company. Financial analyst has to be able to identify the key operations within the company and apply suitable measures that will have a positive influence on certain indicators.

- Lastly, the demands of the management. The analysts has to provide answers to the specific questions which were raised by the management.

Financial statements are not regular recordings, it is very important to understand the analysis and choose right indicators and techniques to define the rational connections. Correctly chosen analysis would explain a lot and approach deeper understandings where the real valuable information comes from.

The three main sources of data for financial analysis are a company's balance sheet, income statement, and cash flow statement.

3.1.1 The Balance Sheet

The balance sheet is prepared as of a specific date, records the categories and amounts of assets employed by the business (resources committed) and the offsetting liabilities incurred to lenders and owners (funds obtained). Recorded value of the total assets invested in the business at any point in time must be matched precisely by the recorded liabilities and owners' equity supporting these assets. On the other hand it must be balance all the time. (Erich Helfert, 2001, p37)

The balance sheet is a snapshot, representing the state of a company's finances (what it owns and owes) as of the date of publication.

Fundamental analysts use balance sheets, in conjunction with other financial statements, to calculate financial ratios.

3 major sections:

- Assets - resources of the business enterprise

The balance sheet can have the following type of assets on its record: cash, accounts receivable, inventory, investments, buildings and land. Based on the availability at which they can be turned into cash they are put into current and non-current assets (McCrary, 2010).

- Liabilities - obligations of the business enterprise

The balance sheet can have the following type of liabilities on its record: bank loans, payable accounts and lease capital. Liabilities represent the money which are to be paid back to the source in the short or long term future.

- Equity - ownership interest of the business enterprise

The balance sheet can have the following type of equities on its record: invested capital and retained earnings

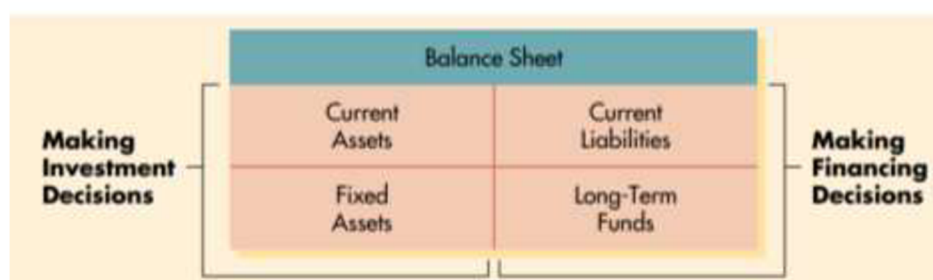
Formula Used for a Balance Sheet:

The balance sheet adheres to the following accounting equation, where assets on one side, and liabilities plus shareholders' equity on the other, balance out:

$$\text{Assets} = \text{Equity} + \text{Liability}$$

(Investopedia.com, 2020)

Picture 1: Balance sheet



Source: (Gitman, 2015, p13)

An important distinction is made between short term and long term assets and liabilities. The current assets and current liabilities are short term assets and short term liabilities. This means they are expected to be into cash (current assets) or paid (current liabilities) within 1 year or less than this. All other assets and liabilities, along with stockholders equity, which is assumed to have an infinite life are considered long term or fixed, because they are expected to remain on the company's books for more than 1 year. (Gitman, p45)

3.1.2 The Income Statement

The income statement reflects the effect of management's operating decisions on business performance and the resulting accounting profit or loss for the owners of the business over a specified period of time. The income statement represents the best

effort of the firm's accountants to match the relevant items of revenue with the relevant items of cost and expense for the period, a process which involves accrual accounting and extensive use of allocation of prior and future revenues and costs. The profit or loss calculated in the statement increases or decreases owners' equity on the balance sheet.

Thus, the income statement is a necessary adjunct to the balance sheet in explaining this major component of change in owners' equity, and it provides a variety of performance assessment information. The income statement, also referred to as the operating statement, earnings statement, or profit and loss statement, displays the revenues recognized for a specific period, and the costs and expenses charged against these revenues, including write-offs (e.g., depreciation and amortization of various assets) and taxes. (Erich Helfert, 2001, p39-42)

To better understanding of income statement, the simplified scheme below is provided:

$$\begin{aligned}
 &+ \text{Sales or revenues} \\
 &\quad - \text{Cost of goods sold (cost of sales)} \\
 &\quad = \text{Gross profit} \\
 &\quad - \text{Operating expenses (selling, administrative, depreciation)} \\
 &\quad = \text{Operating profit} \\
 &\quad - \text{Other expenses / + other revenues} \\
 &= \text{Earnings before interest and taxes (EBIT)} \\
 &\quad - \text{Interest expense} \\
 &= \text{Earnings before taxes (EBT)} \\
 &\quad - \text{Taxes}
 \end{aligned}$$

3.1.3 The Cash Flows Statement

The statement that captures both the current operating results and the accompanying changes in the balance sheet is the cash flow statement, statement of cash flows, or funds flow statement. It gives us a dynamic picture of the ultimate

changes in cash resulting from the combined decisions made during a given period. (Erich Helfert, 2001, p44)

The cash flows statement includes of three sections:

1. CF from Operating Activities consists of sources and uses of cash that are from the normal firm's operations (working capital).

2. CF from Investing Activities consists of increases and decreases in noncurrent and fixed assets and other firms' equity (subsidiaries or joint ventures of the parent firm).

2. CF from Financing Activities occurs when cash inflows are created by increasing notes payable and long-term liability and equity accounts (stock issues and bonds). (Reilly, 2012, p263).

3.2 Methods of Financial Analysis

In order to understand deeply about a company's performance, many tools and indicators are being used to analyse. There are several types of financial analysis commonly used in corporate practice. In order to read deeply about a company's performance, various tools and indicators are applied such as absolute indicators, flow indicators, state indicators, ratio indicators within horizontal, vertical and other indicators involving more calculations. For my financial analysis for the chosen company, I chose the most common indicators used in financial analysis (absolute indicators and ratio indicators).

3.2.1 Absolute indicators

This subchapter summarizes analysis of absolute indicators. For better understating it is necessary to recognize the difference between state and flow indicators. State indicators basically demonstrate a value of account in a specific point of time. State indicators are found in balance sheet. Typical examples are assets or liabilities. On contrary, flow indicators illustrate current change of account during a specific time period. This information is available in income statement and cash flow statement for instance revenues and expenses. This analysis performs with values of

items in its absolute form. Horizontal and vertical analyses are key instruments (RUČKOVÁ, 2015).

3.2.1.1 Horizontal analysis

Horizontal analysis is the restatement of financial statements with a fixed number as a common denominator or reference, allowing us to identify trends and major differences. , in which we use the accounts in a given period as the benchmark or a base period and restate every account in subsequent period as a percentage of the base period's same account. This ratio shows the ratio of assets, liabilities, expenses to total assets, liabilities, income.

The findings of horizontal analysis provide valuable data for the managers' subsequent planning and development of business policies to improve corporate performance. (Wells, 2007, p389).

Horizontal analysis is a time series analysis and is useful for identifying trends and growth in accounts over time. Whereas each account in a vertical analysis is restated each year as a proportion of the reference account, each account in a horizontal analysis is instead compared with the value of that same account in a benchmark year.

Horizontal analysis (trend analysis) can be presented as either in absolute value change or in percentage change. For the base year (also can be calculated by monthly or quarterly) numbers are presented as 100%. Calculated by following formula:

$$\text{Percentage changes} = (\text{Current year} / \text{Base year}) * 100$$

$$\text{Absolute changes} = \text{Current year} - \text{Base year}$$

3.2.1.2 Vertical analysis

In vertical analysis, we compare the accounts in a given period to a benchmark item in that same year. According to the definition provided by Wells, vertical analysis is “a technique for analyzing the relationships between the items on an income statement, balance sheet, or statement of cash flows by expressing components as percentages.” In contrast to horizontal analysis aimed at revealing

dynamics, vertical analysis focuses on the static perspective, investigating the structure of particular groups of financial statement items. (Wells, 2007, p390). This is why another common name for designating vertical analysis is structural analysis. At the same time, vertical analysis can be combined with horizontal analysis, in which case the analyst investigates how the structure of particular items has changed on a particular time interval. Vertical analysis focuses more on the internal structure analysis of various items in the report. It just does a vertical analysis of the current income statement or balance sheet.

Calculated by following formula:

$$\text{Percentage changes} = \left(\frac{\text{Individual Account}}{\text{Base account}} \right) * 100$$

3.2.2 Ratio indicators

Financial ratios have been used by many investors, managers, and shareholders to calculate the profitability and financial conditions of a firm. Other parties that use financial ratios analysis include the customers, suppliers, competitors, and academics.

Ratio analysis is a method of calculating and interpreting financial ratios to analyze and monitor how the firm is performing. The basic sources of financial ratios are the company's income statement and balance sheet. (Gitman, 2015, p49).

Ratio analysis is of interest to shareholders, creditors, and the firms current and future level of risk and return. Firstly, they interested into company short term liquidity and companys ability to make interest and principal payments. Second, companys profitibility in case companys financially healthy.

Financial ratios are very useful to compare and analyse firm's financial status. Understanding how to calculate and interpret ratios will help company's managers and investor make better decision and have a better overview of company's productivity over some time.

There are so many tools for doing performance assessment, we must remember that different techniques address measurement in very specific and often narrowly defined ways. One can be tempted to "run all the numbers," particularly given the speed and ease of computer spreadsheets. Yet normally, only a few selected

relationships will yield information the analyst really needs for useful insights and decision support.(Erich Helfert, 2001, p122)

Picture 2: Performance measures by area viewpoint

Performance Measures by Area and Viewpoint		
Management	Owners	Lenders
Operational Analysis	Investment Return	Liquidity
Gross margin Profit margin EBIT; EBITDA NOPAT Operating expense analysis Contribution analysis Operating leverage Comparative analysis	Return on total net worth Return on common equity Earnings per share Cash flow per share Share price appreciation Total shareholder return	Current ratio Acid test Quick sale value
Resource Management	Disposition of Earnings	Financial Leverage
Asset turnover Working capital management • Inventory turnover • Accounts receivable patterns • Accounts payable patterns Human resource effectiveness	Dividends per share Dividend yield Payout/retention of earnings Dividend coverage Dividends to assets	Debt to assets Debt to capitalization Debt to equity
Profitability	Market Performance	Debt Service
Return on assets (after taxes) Return before interest and taxes Return on current value basis EVA and economic profit Cash flow return on investment Free cash flow	Price/earnings ratio Cash flow multiples Market to book value Relative price movements Value drivers Value of the firm	Interest coverage Burden coverage Fixed charges coverage Cash flow analysis

Source: (Erich Helfert, 2001, p98)

Therefore I will use for the thesis some common indicators such as profitability ratios, liquidity ratios, activity ratios and stability ratios.

3.2.2.1 Profitability ratios

There are many measures of profitability. As a group, these measures enable the analyst to evaluate the firm's profits with respect to a given level of sales, a certain level of assets, or the owners' investment. Without profits, a firm could not attract outside capital. Owners, creditors, and management pay close attention to boosting profits because of the great importance placed on earnings in the marketplace.

Here the issue is the effectiveness with which management has employed both the total assets and the net assets as recorded on the balance sheet. This is judged by

relating net profit, defined in a variety of ways, to the resources utilized in generating the profit, for the company as a whole or for any of its parts. The relationship is used quite commonly, although the nature and timing of the stated values on the balance sheet and the accounting aspects of recorded profit will again tend to distort the results. As we'll see later, the approach can be refined to reflect the cash flow concepts underlying shareholder value creation. (Erich Helfert, 2001, p112)

Return on assets (ROA)

Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings. Return on assets is displayed as a percentage.

$$\text{ROA} = \text{EBIT} / \text{Total assets}$$

ROA uses EBIT instead of net income because EBIT includes external expenses (taxes, interest), therefore we can get more correct information of efficiency of the company as a whole.

Recommended value: $\text{ROA} > 0$

Return on equity (ROE)

Return on equity (ROE) is a measure of financial performance calculated by dividing net income by shareholders' equity. Because shareholders' equity is equal to a company's assets minus its debt, ROE is considered the return on net assets. ROE is considered a measure of how effectively management is using a company's assets to create profits.

$$\text{ROE} = \text{Net income} / \text{Equity}$$

ROE uses net income instead of EBIT because we care about the final profit, what we really earn after expenses.

Recommended value: $\text{ROE} > 0$

3.2.2.2 Liquidity ratios

One way to test the degree of protection afforded lenders focuses on the shortterm credit extended to a business for funding its operations. It involves the liquid assets of a business, that is, those current assets that can readily be converted into cash, on the assumption that they form a cushion against default. (Erich Helfert, 2001, p126).

The liquidity ratio is an important financial indicator to determine the debtor's ability to repay the current debt without increasing external capital. Analyze current liabilities against current assets to assess the coverage of short term liabilities in an emergency.

Current ratio

The ratio most commonly used to appraise the debt exposure represented on the balance sheet is the current ratio. This relationship of current assets to current liabilities is an attempt to show the safety of current debt holders' claims in case of default. . (Erich Helfert, 2001, p127)

$$\text{Current ratio} = \text{Current assets} / \text{Current liabilities}$$

A ratio under 1 indicates that the company's debts due in a year or less are greater than its assets. However, while a high ratio, say over 3, it may indicate that it's not using its current assets efficiently, is not securing financing very well, or is not managing its working capital.

Recommended value: $\text{CuR} \geq 1.5$

Quick ratio (acid test)

The quick ratio (acid test) is similar to the current ratio. But comparing with the current ratio, which was mentioned before, looks only at the most liquid assets. Quick ratio does not include accounts such as inventories and prepaid expenses (the least liquid asstes) because this ratio measures the ability of the firm to pay its short-term liabilities with only that assets, which can be quickly converted into cash.

$$\text{Quick ratio} = (\text{Current assets} - \text{Inventory}) / \text{Current liabilities}$$

A company that has a quick ratio of less than 1 may not be able to fully pay off its current liabilities in the short term, while a company having a quick ratio higher than 1 can instantly get rid of its current liabilities. A result of 1 indicates that the company is fully equipped with exactly enough assets to be instantly liquidated to pay off its current liabilities. When a quick ratio and current ratio are too high is that company is leaving too much cash instead of investing it to increase profits.

Recommended value: $QR \geq 1$

Cash ratio

The cash ratio is stricter than other liquidity ratios (current ratio and acid test) because only cash can pay current debt obligations. The cash ratio indicates whether the company is able to pay off its current liabilities with only cash and cash equivalents. All assets are described as cash equivalents and it can be quickly and easily converted into cash with minimal level of risk. (accounts, money market instrumentals and treasury bills). (Corporate Finance Institute, 2017, p25)

Cash ratio = Cash / Current liabilities

If a company's cash ratio is less than 1, there are more current liabilities than cash and cash equivalents. A cash ratio lower than 1 does sometimes indicate that a company is at risk of having financial difficulty. However, a low cash ratio may also be an indicator of a company's specific strategy that calls for maintaining low cash reserves. If a company's cash ratio is greater than 1, the company has the ability to cover all short-term debt and still have cash remaining. High cash ratios may indicate that a company is inefficient in the utilization of cash or not maximizing the potential benefit of low-cost loans.

Recommended value: $0.5 < CR < 1.0$

Higher cash ratio indicates a company can easily pay off its debt obligations. But having very high cash ratio presents that company keeps unnecessarily too much cash instead of reinvesting for future profits which is same with other liquidity ratios. (Corporate Finance Institute, 2017, p24)

3.2.2.3 Activity ratios

The activity ratios measure the speed measurements with which various accounts are converted into sales or cash (inflows or outflows). With regard to current accounts liquidity are generally inadequate because differences in the composition of companies current assets and current liabilities can affect liquidity. These ratios evaluate how efficient can be a company and operates along a number of dimensions (inventory management, disbursements, and collections). A number of ratios are available for measuring the activity of important current accounts (inventory, accounts receivable, and accounts payable). (Gitman, 2015, p55).

Total assets turnover

Assets turnover ratio is an indicator that reflects the efficiency of enterprise assets utilization. This index is used for subsequent analysis of the efficiency of firm's own assets management. Further, the indicator is also used to understand whether the assets in the firm are sufficient in relation to current or forecasted sales volumes (Belbin, 2013, p. 187).

$$\text{Total assets turnover} = \text{Net sales} / \text{Average total assets}$$

Where:

$$\text{Average total assets} = (\text{Beginning assets} + \text{Ending ending assets}) / 2$$

The asset turnover ratio is calculated in every year. When the asset turnover ratio is high or higher means a company is performing very well.

Inventory turnover ratio

The inventory ratio indicates how the company effectively managed its inventories. The ratio reflects the speed with which the company moves its inventory from raw materials through production into finished goods and to the customer as a completed sales. It calculates how many times inventory is turned or sold during a specific period by using cost of goods sold with average inventory for a selected period. (Gitman, 2015, p50)

$$\text{Inventory turnover} = \text{Cost of goods sold} / \text{Average Inventory}$$

Inventory turnover ratio is important to have higher values. In this case higher indicator shows the company does not overspend by purchasing too much inventory and wastes its resources to save inventory which cannot be sold. Generally it presents the company can effectively sell the inventory which it purchased.

Fixed assets turnover ratio

It measures a company's return on investment in business, plant and equipment by comparing revenues to fixed assets. The result will give us information about how many times fixed assets can turnover during one year. Fixed assets turnover ratio will explain how effectively and efficiently a business is using its fixed assets to generate profit.

$$\text{Fixed assets turnover ratio} = \text{Revenues} / \text{Fixed assets}$$

3.2.2.4 Stability ratios (Leverage ratio)

From the lender's viewpoint, however, when earnings do not exceed or even fall short of the interest cost, fixed interest and principal commitments must still be met. The owners must fulfill these claims, which might severely affect the value of owners' equity. The positive and negative effects of leverage increase with the proportion of debt in a business. With higher leverage, the risk exposure of the providers of debt grows, as does the risk exposure of the owners. From the lender's point of view, a variety of ratios that deal with total debt, or long-term debt only, in relation to various parts of the balance sheet, are more inclusive measures of risk than leverage alone. These ratios measure the risk exposure of the lenders in relation to the available asset values against which all claims are held. . (Erich Helfert, 2001, p153.)

Debt to equity ratio

Debt to Equity Ratio indicates the relative uses of debt and equity as sources of capital to finance the firm's assets. The Debt to Equity Ratio is calculated as follows:

$$\text{Debt to equity ratio} = \text{Total liabilities} / \text{Total equity}$$

It is a measure of the degree to which a company is financing its operations through debt versus wholly-owned funds. More specifically, it reflects the ability of shareholder equity to cover all outstanding debts in the event of a business downturn.

Recommended value: $1 < \text{DER} < 1.5$

Interest coverage ratio

The Interest Coverage Ratio also known as the Times-Interest-Earned Ratio (TIE Ratio) indicates the firm's ability to satisfy interest obligations on its debt.

$$\text{Interest coverage} = \text{EBIT} / \text{Interest expense}$$

If a company has a low-interest coverage ratio, a low-interest coverage ratio means there is a low amount of profits available to meet the interest expense on the debt. Also, if the company has variable-rate debt, the interest expense will rise in a rising interest rate environment. A high ratio indicates there are enough profits available to service the debt, but it may also mean the company is not using its debt properly. For example, if a company is not borrowing enough, it may not be investing in new products and technologies to stay ahead of the competition in the long-term.

Recommended value: $\text{ICR} > 1.5$

4 **Practical Part**

Samsung Electronics Co., Ltd

In today's world of digitalism, there are companies drifted towards the digital technology. The Samsung Electronics Co., Ltd is one of the top famous company in electronic industry. The company has made his position in the market by themselves and now days recognised as the most innovative and good quality brand in the era of electronic industry. The Samsung Electronics Co., Ltd was established in 1969 in Taegu, Korea. Under the support of proctionist government policy, Samsung transformed itself to the second largest electronics company in the world and the largest South Korean company followed by Hyundai motors (2020 revenue almost doubled the Huyndai motors). The company has started business with the manufacturing of black and white televisions. The Samsung Electronics Co., Ltd is a company that is very technology oriented and it continuously improves its technology infrastructure and acquisition. The company uses the most advanced technologies available to come up with new and innovative offerings for customers to attract them away from its competitors such as Apple and Lenovo. The company follows the policy of "we will devote out human resources and technologies to create superior products and services thereby contributing a better global society".

Nowadays numerous difficulties are facing Samsung Electronics Co., Ltd and these include very strict competition from its main rivals. When it comes to most of its main products such as its smartphones, and various other electronics. The main threat of competition comes from its smartphone segment and this is because of the rise of many other smartphone manufacturers that threaten the company for market share. This is a challenge that can result in the company suffering from a significant detriment if it is not addressed properly. Besides that, its competitors like Apple, Huawei and Lenovo are engaged in a great degree of diversification, and this poses a challenge to Samsung. . In contrast to the pace of innovation of Apple, Samsung is still slightly left behind as its diversification pace is much lower and thus it usually finds itself struggling to compete with Apple in certain areas.

In addition to that, Covid 19 is also a significant challenge which has resulted in the company experiencing numerous difficulties and loss of growth as well. The rise of this pandemic has resulted in significant problems being encountered by the company in a variety of areas such as its manufacturing processes, its supply chain activities as well as the marketing of its products. In addition to that, this pandemic has resulted in consumers being unwilling to spend unnecessarily on consumer electronics in such troubling times. Many countries are in recession across the world and this means that consumers have a lower purchasing power and thus will not be very willing to spend money on purchasing expensive items such as smartphones and other consumer electronics like those affected by Samsung. Therefore, it is likely that Samsung will experience the challenge of loss of sales volume and also decreasing profitability.

Important historical timelines:

1938 - Samsung ("three starts" in Korean) is founded with 30,000 Won by Lee Byung-chul as a trading company in Su-dong, near Daegu, Korea.

1947 - As the company begins to grow, Lee establishes Samsung's office in Seoul. A sugar refinery would be started soon and would succeed in a very short span of time.

1951 - Samsung Moolsan is established (later Samsung Corporation).

1969 - Samsung-Sanyo Electronics is established. The partnership would lead to the production of inexpensive TVs, microwave ovens and other consumer products for Western companies such as Sears and General Electric.

1972 - Samsung completes a table calculator factory and a TV factory.

1973 - Samsung announced its second "five-year management plan", which set goals for these business areas and allowed Samsung to enter the shipbuilding industry.

1981 - Samsung's partnership program is organized.

1982 - Samsung opens sales subsidiary in Germany and builds a television assembly plant in Portugal.

1983 - Samsung begins the production of personal computers.

1985 - Samsung builds a television assembly plant in Tokyo.

1986 – Samsung established Samsung Economic Research Institute (SERI).

1989 - Samsung Welfare Foundation was established.

1990 - Samsung Electronics developed the world's third 16M DRAM.

1996 - Samsung Group became the fifth largest group in the world, including multiple subsidiaries and several other legal entities.

2006 - the Samsung Group became the 35th largest economy in the world.

2010 - Samsung's smartphones adopted the Android operating system.

2012 - Samsung became the first cooperative OEM manufacturer of Microsoft Windows Phone 8

2013 - Samsung announced that they had made breakthrough progress in the research and development of 5G mobile communication technology

2016 - South Korean media reported that in order to improve business conditions, Samsung Electronics is expected to reduce R&D investment, along with large-scale layoffs. This is the first time Samsung Electronics has made the above decision in 18 years. Samsung has been generous in research and development expenses.

2018 - Samsung has closed its factory in Tianjin (China) also due to fierce competition and declining market share, and chose to move to a place with lower cost. The largest mobile phone factory under the brand was built in Noida, India.

2019 - Samsung Electronics stopped producing mobile phone products in China because of increasing competition from domestic competitors.

In this bachelor thesis, there are financial analysis of Samsung Electronics Co., Ltd in relation to the last eleven years summary based on the audited financial statements of from 31st of December 2009 until 31st of December 2020.

4.1 Horizontal analysis

As mentioned in the theoretical part, horizontal analysis can be represented in two ways: absolute values and percentages. The analysis is conducted through the data taken from the balance sheet.

4.1.1 Horizontal analysis of assets

In the following tables, absolute and percentage indicators of assets are presented. Year 2010 used as base year.

Table 1: Horizontal analysis of assets (percentage changes)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Assets	15.9%	45.2%	74.2%	88.0%	83.8%	94.1%	129.1%	164.9%	156.5%	175.2%
Current Assets	16.4%	53.0%	97.1%	105.4%	107.2%	129.0%	144.1%	198.2%	188.6%	215.4%
Non current Assets	15.4%	38.6%	54.9%	73.3%	64.2%	64.7%	116.5%	136.8%	129.5%	141.3%

Source: Own calculations based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2010 till 2020)

Table 2: Horizontal analysis of assets (absolute change in million US dollars)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Assets	18506	52613	86418	102449	97633	109606	150344	192009	182229	203976
Current Assets	8757	28235	51715	56141	57088	68699	76708	105545	100416	114673
Noncurrent Assets	9749	24378	34703	46308	40545	40907	73636	86464	81813	89302

Source: Own calculations based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2010 till 2020)

As we see in calculated datas, total assets are rapidly growing through the last 10 years. Because of increase in currents assets and noncurrent assets increases.

From 2010 until 2014, increased dramatically with average change of 55.82% or 64996.5 million US dollars in total assets. Total assets in 2010 (116439 millions of USD) was doubled in 2014 (218888 millions of USD).

Unfortunately in 2015, total assets decreased by 4.2% or 4816 million US dollars from last year (2014). Main reason was decrease of non current assets in Available for sale financial assets by 4668 million USD, long term prepaid expenses by 818 million USD and other noncurrent assets from previous year.

And in 2019 total assets decreased by 8.4% or 9780 million US dollars from last year (2018). Decrease in both current and noncurrent assets. Main reason was decrease in cash by 4801 million USD, in inventories 3670 million USD and in property plant equipment by 3396 million USD.

4.1.2 Horizontal analysis of Equity and Liabilities

In the following tables, absolute and percentage indicators of Equity and Liabilities are presented. Year 2010 used as base year.

Table 3: Horizontal analysis Equity and Liabilities (percentage changes)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Equity	13.9%	46.4%	83.5%	106.1%	99.9%	114.7%	144.8%	190.7%	187.4%	206.7%
Total Liabilities	19.7%	42.8%	55.8%	51.9%	43.2%	53.1%	97.9%	113.7%	94.9%	122.3%
Total Equity and Liabilities	15.9%	45.2%	74.2%	87.9%	83.8%	94.1%	129.1%	164.9%	156.5%	175.2%

Source: Own calculations based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2010 till 2020)

Table 4: Horizontal analysis Equity and Liabilities (absolute change in million US dollars)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Equity	10835	35944	64682	82201	76911	88899	112162	147715	145221	160164
Total Liabilities	7670	16670	21736	20248	16828	20707	38182	44295	37008	47685

Total Equity and Liabilities	18506	52613	86418	102449	97633	109606	150344	192009	182229	203976
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Source: Own calculations based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2010 till 2020)

As we see in calculated datas, Total Equity and Liabilities are increasing through the last 10 years. Moreover rapid increases in total equity.

Unfortunately in 2015, total Equity and Liabilities decreased by 4.2% or 4816 million US dollars from last year (2014). Main reason was decrease of non current liabilities by 4335. million USD from previous year.

And in 2019 total Equity and Liabilities decreased by 8.4% or 9780 million US dollars from last year (2018). Main reason was decrease in current liabilities by 8757 million USD.

4.1.3 Horizontal analysis of Income Statement

In the following tables, absolute and percentage indicators of profits and losses are presented. Year 2010 used as base year.

Table 5: Horizontal analysis of Income statement (percentage changes)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gross profit	0.45%	52.35 %	88.99%	62.25 %	49.31 %	54.18 %	113.70 %	121.87 %	56.39 %	71.41 %
Cost of Sales	7.87%	31.17 %	44.74%	35.18 %	21.08 %	15.04 %	26.80%	33.49%	40.15 %	35.78 %
Net Income	- 16.00 %	57.03 %	103.69 %	56.75 %	18.84 %	38.21 %	163.08 %	184.30 %	31.57 %	57.79 %

Source: Own calculations based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2010 till 2020)

Table 6: Horizontal analysis of Income statement (absolute change in million US dollars)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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Gross profit	205	23884	40602	28400	22499	24719	51878	55607	25729	32580
Cost of Sales	7093	28099	40335	31711	19005	13557	24162	30190	36190	32255
Net Income	-2269	8085	14701	8046	2671	5417	23121	26129	4475	8194

Source: Own calculations based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2010 till 2020)

In 2011, Net income decreased by 16% from previous year (2010) or by 2269 million USD but cost of sales increased by 7.87% or 13557 million USD which caused 0.45% or 205 million USD in Gross profit. In Income statement, non significant difference between 2010 and 2011. Except cost of sales is increased by 7092 million USD but net income decreased by 2269 million USD.

In 2012 and 2013, we can see increases in all 3 indicators. Specially in Net income significantly increased. Than in 2014 and 2015, slow decreases in all 3 indicators from previous years. From 2016 until 2018, there were slow increases in all 3 indicators.

Unfortunaly, in 2019 and 2020 significantly high cost of sales and very low increase in Net income.

4.2 Vertical analysis

Vertical analysis is a method of analyzing financial statements that list each line item as a percentage of a base figure within the statement within single selected period. The first line of the statement always shows the base figure at 100%, with each following line item representing a percentage of the whole. In following outcome will be using annual reports from 2010 until 2020.

4.2.1 Vertical analysis of Assets

By unifying the data of Samsung Electronics Co., Ltd from its balance sheet for the past 11 years, I can get some useful data from it. Base data is chosen as Total Assets. In following table 7, Vertical analysis of Assets represented in percentages.

Table 7: Vertical analysis of Assets (percentage)

	2010	2011	2012	2013	2014	2015
Total Assets	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Current Assets	45.72%	45.94%	48.20%	51.74%	49.97%	51.54%
Cash and cash equivalents	7.29%	9.44%	10.38%	7.61%	7.31%	9.35%
Short-term financial instruments	8.59%	7.41%	9.61%	17.15%	18.09%	18.26%
Available-for-sale financial assets	0.86%	0.42%	0.70%	0.70%	1.43%	1.91%
Trade and other receivables	15.87%	15.52%	14.73%	13.02%	10.72%	10.39%
Advances	0.97%	0.92%	0.92%	0.90%	0.86%	0.70%
Prepaid expenses	1.64%	1.50%	1.25%	1.16%	1.45%	1.31%
Inventories	9.95%	10.10%	9.80%	8.94%	7.52%	7.77%
Other current assets	0.56%	0.64%	0.08%	1.00%	0.78%	0.43%
Noncurrent Assets	54.28%	54.06%	51.80%	48.26%	50.03%	48.46%
Available-for-sale financial assets	2.26%	2.07%	2.89%	2.91%	5.50%	3.44%
Associates and joint ventures	6.21%	5.91%	4.85%	3.00%	2.27%	2.18%
Property, plant and equipment	39.44%	39.87%	37.82%	35.27%	35.10%	35.71%
Intangible assets	2.07%	2.16%	1.85%	1.86%	2.08%	2.23%
Deposits	0.49%	0.51%	0.44%	0.00%	0.00%	0.00%
Long-term prepaid expenses	2.64%	2.22%	1.91%	1.62%	2.11%	1.77%
Deferred income tax assets	0.84%	1.04%	0.98%	2.16%	1.96%	2.31%
Other non-current assets	0.33%	0.28%	0.24%	1.44%	1.01%	0.83%

Source: Own calculations based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2010 till 2015)

	2016	2017	2018	2019	2020
Total Assets	100.00%	100.00%	100.00%	100.00%	100.00%
Current Assets	53.94%	48.71%	51.48%	51.45%	52.41%
Cash and cash equivalents	12.25%	10.12%	8.94%	7.63%	7.77%
Short-term financial instruments	20.00%	16.39%	19.42%	21.63%	24.44%
Available-for-sale financial assets	1.39%	1.06%	-	-	-
Trade and other receivables	9.26%	9.18%	9.98%	9.96%	8.19%
Advances	0.55%	0.58%	0.40%	0.00%	0.00%
Prepaid expenses	1.34%	1.27%	1.22%	0.68%	0.60%
Inventories	7.00%	8.28%	8.54%	7.59%	8.47%
Other current assets	0.50%	0.47%	0.69%	1.17%	0.99%
Noncurrent Assets	46.06%	51.29%	48.52%	48.55%	47.59%
Available-for-sale financial assets	2.60%	2.57%	-	2.53%	3.32%
Associates and joint ventures	2.23%	2.25%	2.16%	2.15%	2.14%
Property, plant and equipment	34.89%	37.01%	34.01%	33.99%	34.09%
Intangible assets	2.04%	4.89%	4.39%	5.87%	4.88%
Deposits	0.00%	0.00%	0.00%	0.00%	0.00%
Long-term prepaid expenses	1.46%	1.14%	1.48%	-	-
Deferred income tax assets	2.03%	1.68%	1.61%	1.28%	1.13%
Other non-current assets	0.60%	1.44%	2.26%	2.27%	1.35%

Source: Own calculations based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2016 till 2020)

Based on the calculations of past 11 years, proportion of current asset in total assets is increasing that means noncurrent assets were decreasing. Main factors were Short-term financial instruments, Cash and cash equivalents, and Property, plant and equipment.

In 2010, proportion of Short-term financial instruments was 8.59% from that period it grew continuously. In 2020, Short-term financial instruments proportion in total assets hit 24.44% of it and its almost quarter of the total assets.

From 2010 until 2012, , Cash and cash equivalents were increasing. But in 2013, it dropped by 2.77%. From that time proportion were increasing until 2016 and again started decreasing until current period.

Property, plant and equipment proportion were stable through the years filling 80% (average) of noncurrent assets and 36% (average) of total assets.

4.2.2 Vertical analysis of Equity and Liabilities

Vertical analysis is a method of analyzing financial statements that list each line item as a percentage of a base figure within the statement. The first line of the statement always shows the base figure at 100%, with each following line item representing a percentage of the whole.

By unifying the data of Samsung Electronics Co., Ltd from its balance sheet for the past 11 years, I can get some useful data from it. Base data is chosen as Total Liabilities &Equity. In following table 8, Vertical analysis of Total Liabilities &Equity represented in percentages.

Table 8: Vertical analysis of Equity and Liabilities (percentage)

	2010	2011	2012	2013	2014	2015
Total Liabilities & Equity	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total Liabilities	33.46%	34.56%	32.91%	29.92%	27.05%	26.06%
Non-current liabilities	3.71%	6.08%	6.99%	5.95%	4.48%	23.51%
Debentures	0.44%	0.82%	1.01%	0.61%	0.59%	0.51%
Long-term borrowings liabilities	0.47%	2.37%	2.00%	0.46%	0.04%	0.11%
Long-term other payables	0.80%	0.66%	0.64%	0.49%	1.11%	1.26%
Retirement benefit obligation	0.45%	0.27%	0.96%	-	-	-
Deferred income tax liabilities	1.23%	1.50%	1.89%	2.81%	1.78%	2.13%
Provisions	0.22%	0.23%	0.23%	2.81%	0.22%	0.22%
Other non-current liabilities	0.12%	0.23%	0.26%	0.50%	0.65%	0.84%
Current Liabilities	29.75%	28.48%	25.92%	23.97%	22.57%	2.55%
Trade payables	11.95%	11.89%	9.33%	8.24%	3.43%	4.61%
Short-term borrowings	6.28%	6.20%	4.66%	3.01%	3.48%	3.66%
Advance received	0.66%	0.93%	0.84%	0.80%	0.62%	0.55%
Withholdings	0.78%	1.10%	0.53%	0.55%	0.50%	0.41%
Accrued expenses	5.29%	5.03%	5.24%	5.30%	5.59%	4.80%
Income tax payables	1.53%	0.81%	1.78%	1.58%	0.94%	1.40%
Current portion of long-term borrowings and debentures	0.84%	0.02%	0.55%	1.13%	0.77%	0.09%
Provisions	2.17%	2.26%	2.79%	3.15%	2.60%	2.65%
Other current liabilities	0.25%	0.23%	0.19%	0.22%	0.14%	0.12%
Total Equity	66.54%	65.44%	67.09%	70.08%	72.95%	72.12%
Preferred stock	0.09%	0.08%	0.07%	0.06%	0.05%	0.05%
Common stock	0.58%	0.50%	0.43%	0.36%	0.34%	0.32%
Share premium	3.28%	2.83%	2.43%	2.06%	1.91%	1.82%
Retained earnings	63.31%	62.68%	66.26%	69.42%	73.57%	76.44%
Other reserve	-3.52%	-3.37%	-4.52%	-4.42%	-5.52%	-7.26%
Non-controlling interest	2.80%	2.73%	2.42%	2.60%	2.56%	2.55%

Source: Own calculations based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2010 till 2015)

	2016	2017	2018	2019	2020
Total Liabilities &Equity	100.00%	100.00%	100.00%	100.00%	100.00%
Total Liabilities	26.40%	28.92%	26.99%	25.44%	27.04%
Non-current liabilities	5.53%	6.66%	6.63%	7.35%	7.05%
Debentures	0.02%	0.32%	0.28%	0.28%	0.25%
Long-term borrowings liabilities	0.47%	0.60%	0.03%	0.62%	0.53%
Long-term other payables	1.27%	0.68%	0.94%	0.62%	0.44%
Retirement benefit obligation	-	-	-	-	-
Deferred income tax liabilities	2.78%	3.88%	4.47%	4.84%	4.97%
Provisions	0.14%	0.15%	0.20%	0.17%	0.28%
Other non-current liabilities	0.79%	0.90%	0.57%	0.68%	0.46%
Current Liabilities	20.87%	22.26%	20.36%	18.09%	19.99%
Trade payables	2.47%	3.01%	2.50%	2.47%	2.57%
Short-term borrowings	4.86%	5.23%	4.00%	4.08%	4.38%
Advance received	0.52%	0.41%	0.24%	0.30%	0.30%
Withholdings	0.26%	0.26%	0.28%	0.25%	0.26%
Accrued expenses	4.78%	4.64%	5.99%	5.49%	6.43%
Income tax payables	1.08%	2.46%	2.57%	0.39%	1.17%
Current portion of long-term borrowings and debentures	0.47%	0.09%	0.01%	0.24%	0.19%
Provisions	1.75%	1.42%	1.29%	1.15%	1.15%
Other current liabilities	0.13%	0.13%	0.31%	0.29%	0.30%
Total Equity	73.60%	71.08%	73.01%	74.56%	74.17%
Preferred stock	0.05%	0.04%	0.04%	0.03%	0.03%
Common stock	0.30%	0.26%	0.23%	0.22%	0.21%
Share premium	1.68%	1.46%	1.30%	1.25%	1.16%
Retained earnings	73.65%	71.52%	71.52%	72.21%	71.67%
Other reserve	-4.55%	-4.61%	-2.34%	-1.41%	-2.30%
Non-controlling interest	2.49%	2.41%	2.26%	2.26%	2.19%

Source: Own calculations based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2016 till 2020)

Based on the calculations of past eleven years, proportion of Total Liabilities in Total Liabilities &Equity is increasing by average 1.5% therefore Total Equity were decreasing by average 1.5% . Long-term borrowings liabilities passed over 2% in 2012 and 2013. Proportion average was less than 0.4% was through the years. Proportion between total equity and total liability is average of 7:3 which means total equity is almost doubled the total liabilities.

Trade payables and short-term borrowings decreased slowly until 2015. From 2016, Trade payables and short-term borrowings kept stable proportion in the total Liabilities & Equity.

4.2.3 Vertical analysis of Income Statements

By unifying the data of Samsung Electronics Co., Ltd from its of Income Statements for the past eleven years, I can get some useful data from it. Base data is chosen as Revenue. In following table 9, Vertical analysis of Income Statements represented in percentages.

Table 9: Vertical analysis of Income Statements (percentage)

	2010	2011	2012	2013	2014	2015
Revenue	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Cost of Sales	66.40%	67.97%	62.98%	60.21%	62.21%	61.59%
Gross profit	33.60%	32.03%	37.02%	39.79%	37.79%	38.41%
Selling, informational & administrative expenses	16.97%	16.62%	22.58%	23.70%	25.65%	25.30%
Operating profit	11.19%	9.85%	14.44%	16.08%	12.14%	13.16%
Other non-operating income/expenses	1.47%	0.85%	0.77%	0.58%	0.91%	1.56%
Finance income	4.83%	4.49%	3.90%	3.50%	4.01%	5.24%
Finance expense	4.98%	4.78%	3.95%	3.39%	3.54%	5.00%
EBIT	12.50%	10.40%	14.88%	16.78%	13.66%	12.94%
Income Taxes	2.06%	2.08%	3.02%	3.45%	2.17%	3.44%
Net Income	10.44%	8.32%	11.86%	13.33%	11.35%	9.50%

	2016	2017	2018	2019	2020
Revenue	100.00%	100.00%	100.00%	100.00%	100.00%
Cost of Sales	59.58%	53.97%	54.31%	63.91%	61.02%
Gross profit	40.42%	46.03%	45.69%	36.09%	38.98%
Selling, informational & administrative expenses	25.93%	23.64%	21.53%	24.04%	23.79%

Operating profit	14.49%	22.39%	24.16%	12.05%	15.20%
Other non-operating income/expenses	0.39%	0.75%	0.36%	0.34%	0.25%
Finance income	5.64%	4.06%	4.10%	4.41%	5.18%
Finance expense	5.30%	3.75%	3.53%	3.59%	4.78%
EBIT	15.21%	23.46%	25.09%	13.21%	15.35%
Income Taxes	3.96%	0.58%	6.90%	3.77%	4.20%
Net Income	11.26%	17.61%	18.19%	9.44%	11.15%

Source: Own calculations based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2010 till 2020).

During analysed period Cost of Sales was steadily fall year by year by 66.40% beginning share of the revenue until 2018 with 54.31% of the share. In 2019 cost of sales hit 63.91% rise by 9.6% from last year. In 2020, it decreased by 2.89%. Consequently, gross profit was increasing over the period mentioned before as Cost of Sales was decreasing.

Operating expenses are increased drastically. Main factor was Selling, informational & administrative expenses, which was in 2010 only 16.97% hit in 2020 23.79% of the share. The highest operating profit recorded in 2018 by share of 24.16% and the lowest was in 2011 by share of 9.85%. Therefore EBIT hit the highest share by 25.09% and Net income by 18.19% in 2018.

4.3 Ratio indicators

4.3.1 Liquidity Ratios

The liquidity of a firm is measured by its ability to satisfy its short-term obligations as they come due. Liquidity refers to the solvency of the firm's overall financial position the ease with which it can pay its bills. Because a common precursor to financial distress and bankruptcy is low or declining liquidity, these ratios are viewed as good leading indicators of cash flow problems.

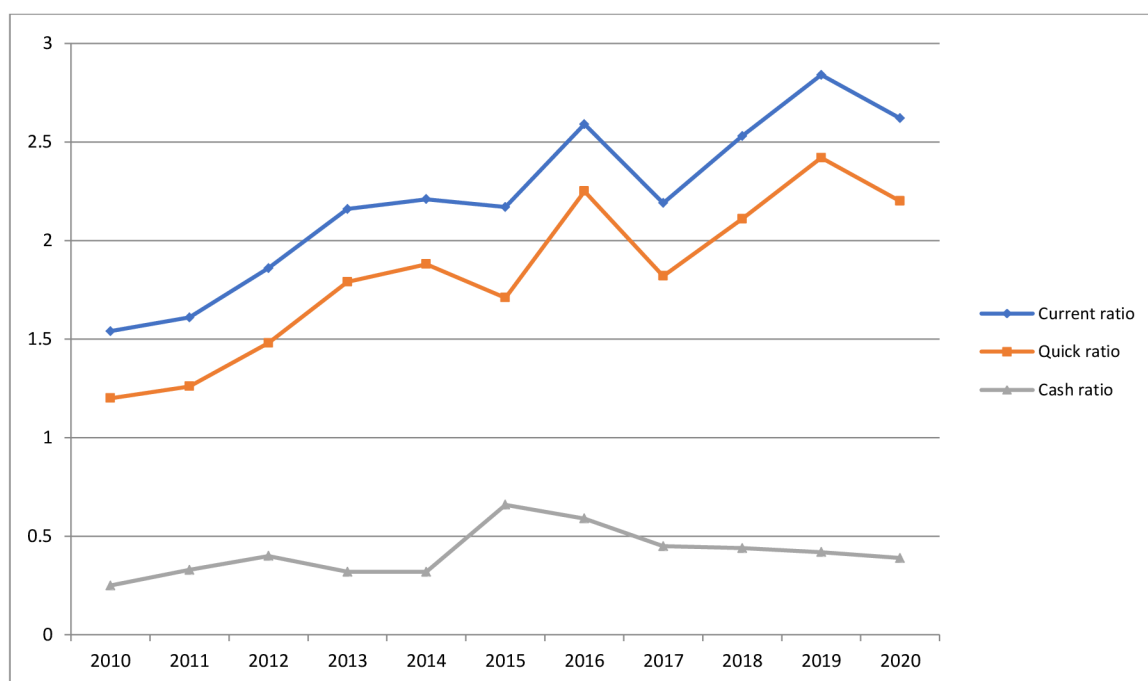
By unifying the data of Samsung Electronics Co., Ltd annual reports for the past 11 years, I can get some useful data from it. In following table 10, cash ratio, quick ratio, current ratio will be presented.

Table 10: Liquidity ratios analysis

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Current ratio	1.54	1.61	1.86	2.16	2.21	2.17	2.59	2.19	2.53	2.84	2.62
Quick ratio	1.20	1.26	1.48	1.79	1.88	1.71	2.25	1.82	2.11	2.42	2.20
Cash ratio	0.25	0.33	0.40	0.32	0.32	0.66	0.59	0.45	0.44	0.42	0.39

Source: Own calculations based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2010 till 2020)

Figure 1: Comparisation of liquidity ratios



As mentioned before in the theoretical part, current ratio represent capability of the company to pay its current liabilities by using its current assets. All of the current ratios are higher than 1.5 means they are financing and managing very well its working capital in selected period. However, in 2019 current ratio hit 2.84 which is very close to 3.00.

Also all quick ratios are more than 1.0, which was the lowest in 2010 with 1.2 and the highest was in 2019 with 2.42. Moreover, company is able to pay its current liabilities.

Every single cash ratios in selected period are more than 0.2 and less than 0.5. Therefore, company uses their cash efficiently and very well reinvesting through the years.

4.3.2 Profitability Ratios

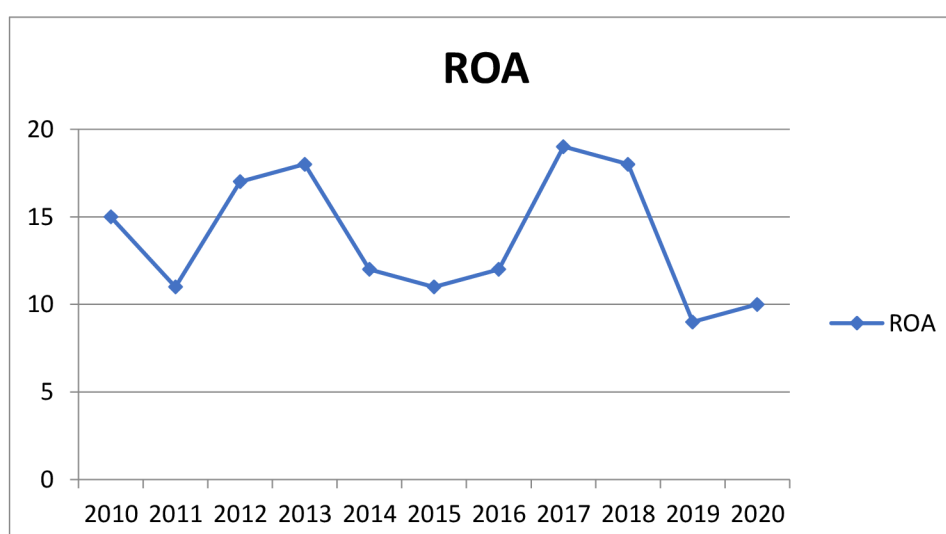
By unifying the data of Samsung Electronics Co., Ltd annual reports for the past 11 years, I can get some useful data from it. In following table 11, ROA, ROE, Gross profit margin will be presented.

Table 11: Profitabilty ratios analysis

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ROA	15%	11%	17%	18%	12%	11%	12%	19%	18%	9%	10%
ROE	18%	13%	20%	20%	14%	11%	12%	20%	18%	8%	9%
Gross profit margin	34%	32%	37%	40%	38%	38%	40%	46%	46%	36%	39%

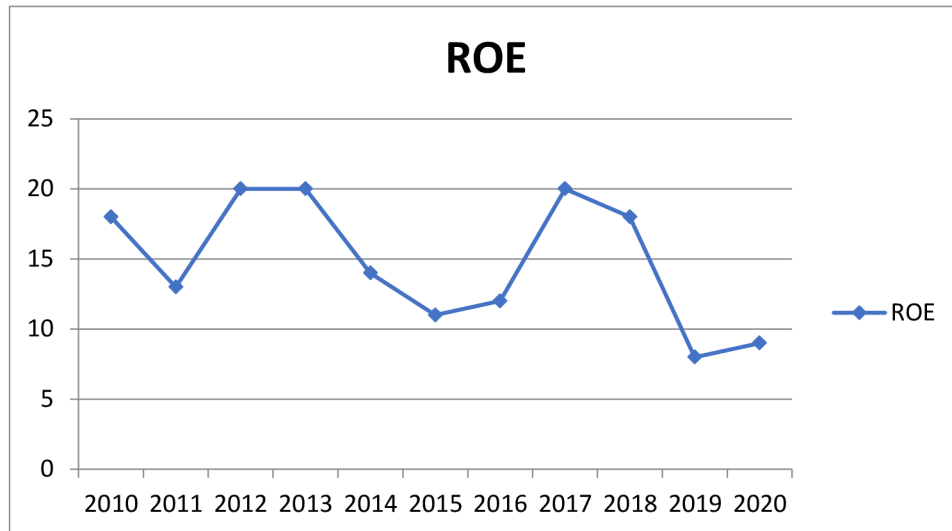
Source: Own calculations based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2010 till 2020)

Figure 2: Ratio ROA



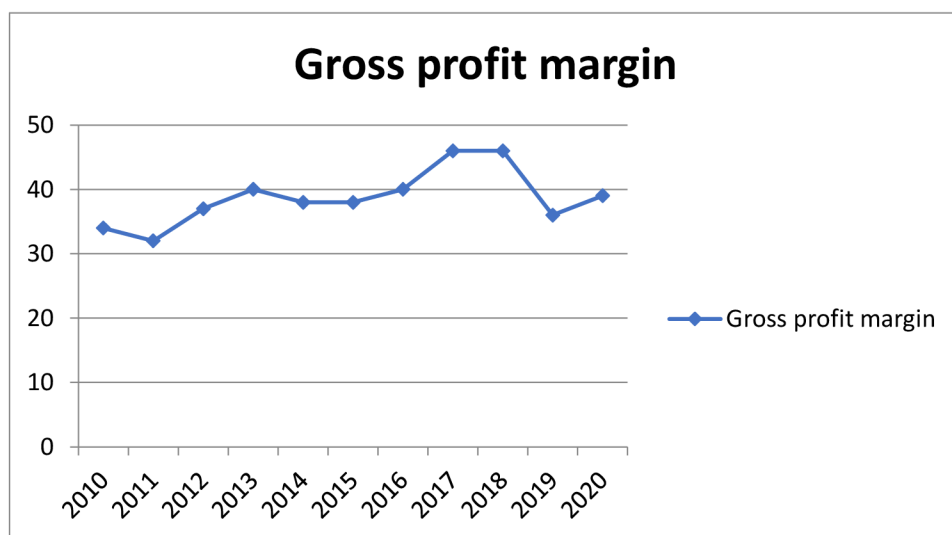
Return on assets (ROA) are more than 0 means the company was the highest profitable in 2017 (by 0.19%) and the lowest profitable was in 2019 (by 0.09 %) relatively to its assets.

Figure 3: Ratio ROE



Return on equities (ROE) are more than 0 means the company was the highest profitable in 2012, 2013,2014 (by 0.20%) and the lowest profitable was in 2019 (by 0.08%) are relatively to its assets.

Figure 4: Ratio Gross profit margin



Recommended industrial average for gross profit margin stays between 15%-20%. In the table 11, the lowest was in 2011 (32%) and the highest was in 2017 and 2018 (46%).

4.3.3 Activity ratios

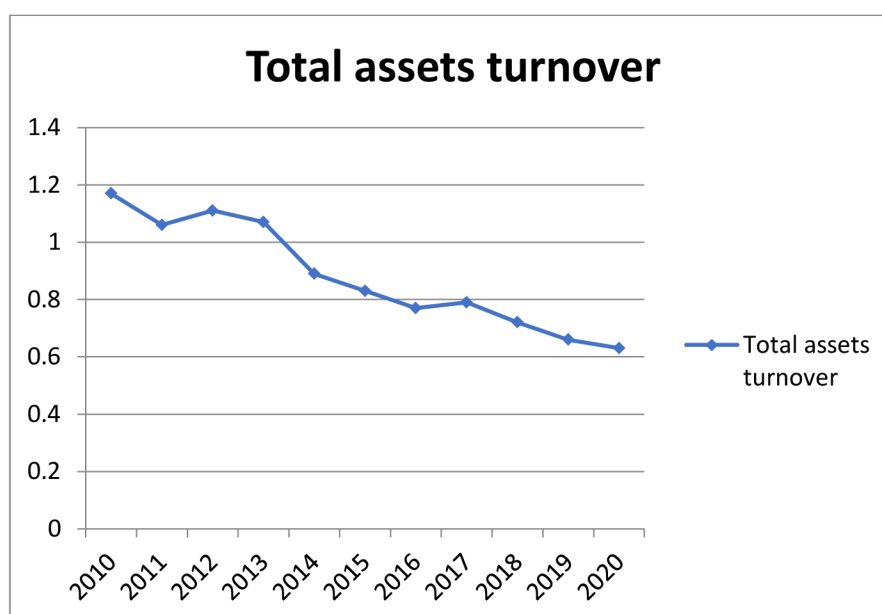
By unifying the data of Samsung Electronics Co., Ltd annual reports for the past 11 years, I can get some useful data from it. In following table 12, Total assets turnover, Inventory turnover, and Fixed assets turnover will be presented.

Table 12: Activity ratios analysis

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total assets turnover	1.17	1.06	1.11	1.07	0.89	0.83	0.77	0.79	0.72	0.66	0.63
Inventory turnover	7.78	7.14	7.14	7.20	7.41	6.56	6.55	5.18	4.57	5.57	4.51
Fixed assets turnover	2.96	2.66	2.94	3.03	2.55	2.32	2.21	2.15	2.11	1.95	1.84

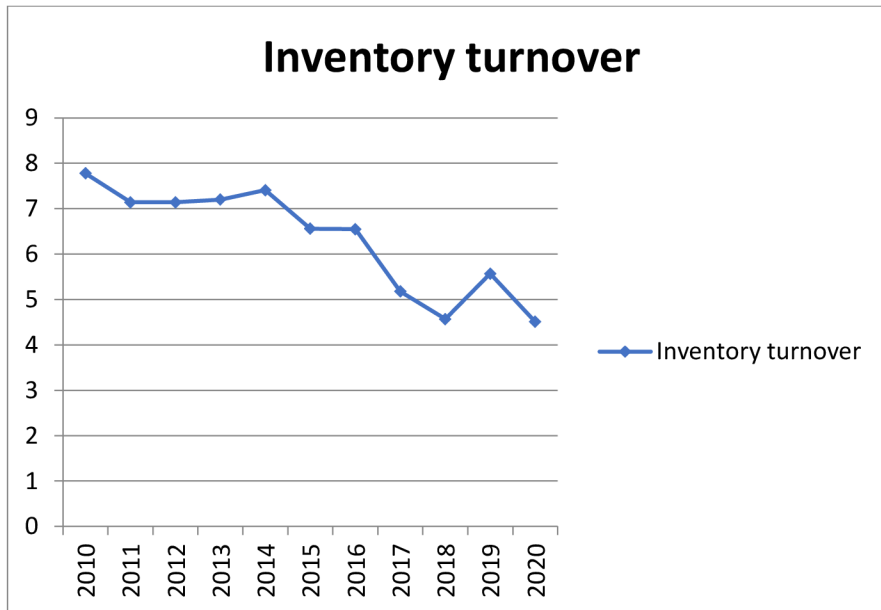
Source: Own calculations based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2010 till 2020)

Figure 5: Ratio Total assets turnover



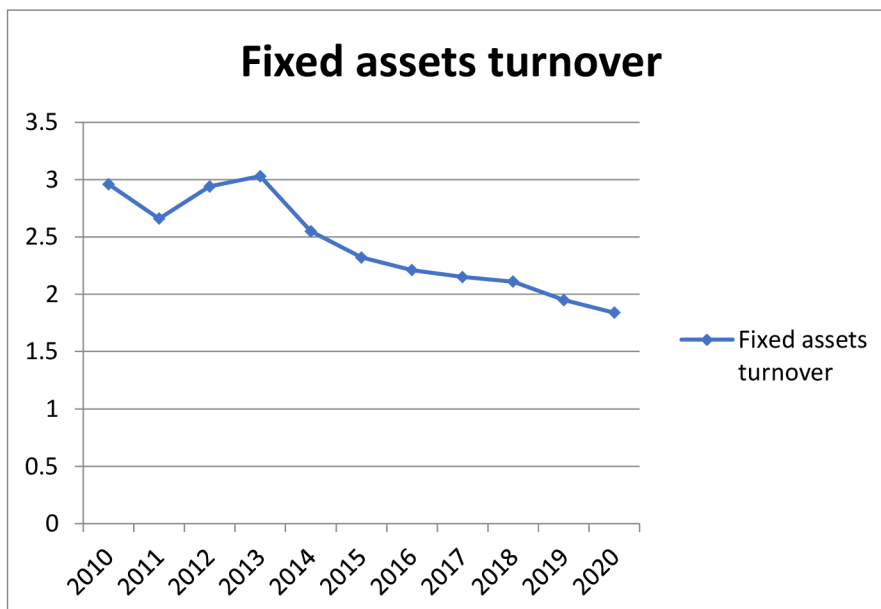
According to data, total assets turnover decreased year by year (by average 0.9). The main reason is total assets are increasing faster than the sales.

Figure 6: Ratio inventory turnover



The inventory turnover ratio is was in 2010, 7.78 (the highest) and in 2020, 4.51 (the lowest). For the company when inventory turnover ratio is bigger is better but in our case ratio is drastically dropped. Therefore we can say company is purchasing inventories more than needed or keeps unnecessary inventories which can not sell.

Figure 7: Ratio fixed assets turnover



Fixed turnover ratio decreased year by year. In 2010, the ratio was 2.96 (can be returned almost three times in one year). However, turnover in 2020 is still good with the lowest ratio 1.84 (difference in 11 years- 1.12).

4.3.4 Stability ratios analysis

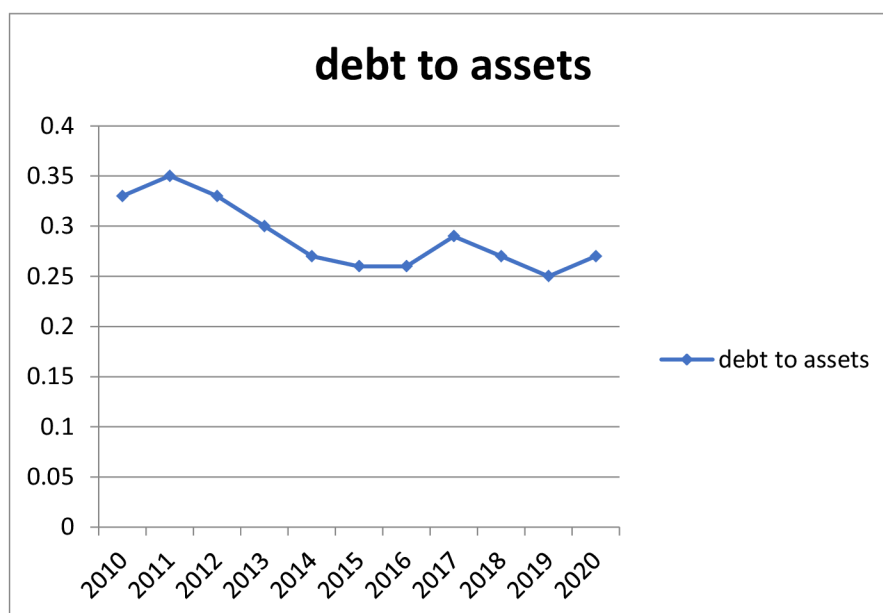
By unifying the data of Samsung Electronics Co., Ltd annual reports for the past 11 years, I can get some useful data from it. In following table 13, Debt to assets, Debt to equity, and Interest coverage will be presented.

Table 13: Stability ratios analysis

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Debt to assets	0.33	0.35	0.33	0.30	0.27	0.26	0.26	0.29	0.27	0.25	0.27
Debt to equity	0.50	0.53	0.49	0.43	0.37	0.36	0.36	0.41	0.37	0.34	0.36
Interest coverage	-	-	-	-	-	-	49.74	81.85	87.29	40.46	61.74

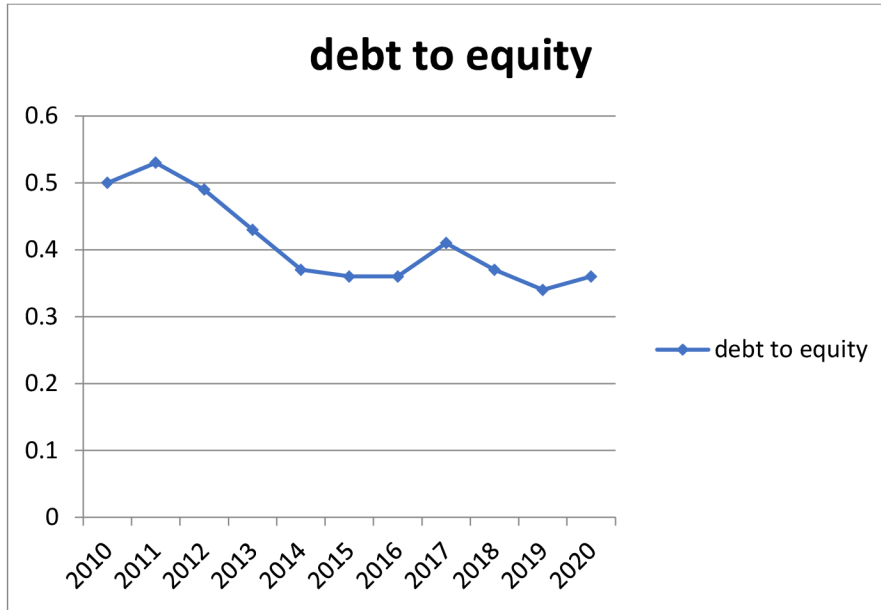
Source: Own calculations based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2010 till 2020)

Figure 8: Ratio debt to assets



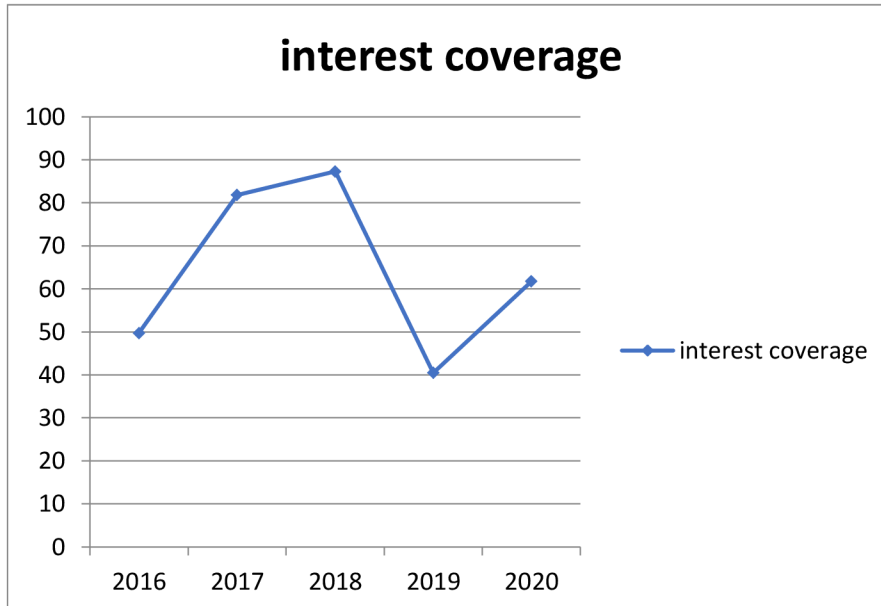
In 2010, Debt to assets ratio described as 0.33 (the highest in selected period). And slow fall continued until 2016. In 2017, ratio increased by 0.03 in 2019 increased by 0.02 in 2018. Overall risk is quite stable with range of 0.1.

Figure 9: Ratio debt to equity



As the debt to equity ratio continues to drop below 1 (the highest 0.5 in 2010 and the lowest 0.34 in 2019). When the debt to equity ratio is lower than 1, then that means its assets are more funded by equity.

Figure 10: Ratio interest coverage



According to the table 13, company has high ability to cover its interest expense. In 2016, ratio was 49.74 times. In following years 2017 and 2018, interest coverage increased to 81.85, 87.79. Generally company performs really well.

4.4 Competitors analysis

Top 10 Largest Electronics Companies in the World by Revenue in 2020:

Picture 3: Top 10 Largest Electronics Companies in the World by Revenue in 2020:

Rank	Company	Revenue (USD billions)	Headquarters
1	Apple Inc.	260.17	USA
2	Samsung Electronics	221.6	South Korea
3	Hon Hai Precision Industry	175.62	Taiwan
4	Huawei	122.97	China
5	Dell Technologies	90.62	USA
6	Hitachi	86.42	Japan
7	Sony	80.92	Japan
8	Panasonic	74.72	Japan
9	Intel	71.9	USA
10	LG Electronics	54.39	South Korea

Source: Investors.com

Samsung electronics is the world's second largest electronics technology company by its revenue, just behind Apple Inc. After looking at the financial performance individually, the main competitor of the company will be introduced as well with a general overview.

Therefore, I have chosen Apple Inc. as a competitor company to the financial analysis to have better overview of the company performance and main understandings in industrial area.

Apple Inc.

Apple Inc. was founded in 1971 by Steve Jobs and now is the largest electronics company in the world by its revenue. American multinational corporation that designs and markets consumer electronics, computer software, and personal computers.

The company's bestknown hardware products include the Macintosh line of computers, the iPod, the iPhone, the Mac and the iPad and such as consumer software, macOS, iOS, iPad OS, watch OS, the tv OS operating system, the iTunes multimedia browser, the Safari web browser, the iLife and iWork creative and productivity packages. The iPhone is series of smart phones developed and sold by Apple Inc which uses on the iOS mobile operating system developed by Apple Inc. According to their last 5 years of financial statement, only the iPhone itself makes approximately over 60% of share of total revenue.

Apple Inc is considered one of the Big Four technology companies, along with Microsoft, Google, and Amazon. Apple became the world's first company to record a market capitalization of \$1 trillion, and subsequently passed the \$1.3 trillion threshold in Dec. 2019 and roughly two years later, became the first publicly traded U.S. company to surpass \$2 trillion. As of March 15, 2021, Apple's market cap increased to \$2.08 trillion.

Apple operates under five major segments, Americas (includes North America and South America), Europe (includes all the European countries, India, and the Middle East), China (includes Hong Kong, China, and Taiwan), Japan, and the Rest of Asia Pacific (all the Asian countries, Australia, and other regions not represented under the five segments).

1976 - Apple Computer Inc. was founded by Steve Jobs, Steve Wozniak and Ron Wayne. The first Apple computer was assembled in the garage of Jobs' family.

1977 - Apple Computer Inc. was incorporated. In the same year, Apple II microcomputer was introduced.

1980 - Apple Computer Inc. went public and earned over \$100 million.

1983 - Apple produced the world's first personal computer.

1984 - Apple released Macintosh.

2001 - Apple introduced Mac OS X and introduced iPod and iTunes, and iPod beat SONY's Walkman.

2007 - Apple introduced iPhone.

2008 - Apple introduced iPhone 3G and MacBook Air.

2010 - Apple introduced iPad.

2020 - Apple introduced first iPhones to support 5G.

Horizontal analysis of Apple Inc.,

Horizontal analysis analysis is conducted through the data taken from the balance sheet. In the following tables, percentage indicators of assets are presented. Year 2016 used as base year.

Table 14: Horizontal analysis of assets (percentage changes)

In millions of US dollars	2016	2017	2018	2019	2020
Current Assets	100%	119.57%	120.38%	102.09%	123.97%
Cash and cash equivalents	100%	96.99%	99.05%	127.72%	188.49%
Short-term marketable securities	100%	227.87%	11.47%	74.94%	128.04%
Accounts receivable, net	100%	93.5%	113.46%	129.72%	98.88%
Inventories	100%	90.76%	227.72%	81.48%	103.79%
Vendor non-trade receivables	100%	100.38%	131.41%	145%	88.64%
Other current assets	100%	54.91%	168.25%	86.73%	102.19%
Noncurrent Assets	100%	103.88%	114.25%	87.72%	61.68%
Long-term marketable securities	100%	120.2%	125.08%	122.26%	90.49%
Property, plant and equipment, net	100%	120.41%	104.6%	122.59%	148%
Other non-current assets	100%	106.89%	114.83%	95.02%	74.96%

Source: Own calculations based on audited financial statements of Apple Inc, (annual reports from 2016 till 2020)

According to data we analyzed we can see that in 2017 and 2018, the amount of cash and cash equivalents decreased. In 2019, short-term and long-term stock prices fell and the market value fell below \$ 800 billion almost close to year 2015. However,

in 2016-2020, Apple Inc's liquid assets continued to grow. Apple Inc's total assets pointed to an increase in 2016-2020 while Apple Inc's total assets tended to decline in 2019-2020 due to factors such as stock declines and industry competition.

Table 15: Horizontal analysis Equity and Liabilities (percentage changes)

Total Liabilities & Equity	100%	110.79%	116.67%	97.44%	92.56%
Total Liabilities	100%	113.13%	124.73%	107.17%	95.92%
Non-current liabilities	100%	126.61%	122.74%	101.56%	95.92%
Long-term debt	100%	141.44%	128.88%	96.43%	97.94%
Other non-current liabilities	100%	105.27%	110.89%	113.09%	103.25%
Current Liabilities					
Current Liabilities	100%	98.01%	127.6%	114.99%	91.19%
Accounts payable	100%	105.08%	131.52%	113.94%	82.73%
Other current liabilities	100%	84.47%	116.87v	129.46%	113.18%
Deferred revenue	100%	90.38%	93.42%	79.04%	92.56%
Commercial paper	100%	95.36%	147.77%	99.89%	49.89%
Short-term debt	100%	140%	185.6%	135.22%	116.8%
Total Equity					
Total Equity	100%	107.45%	104.52%	79.93%	84.45%
Common stock	100%	113.99%	114.77%	112.08%	112.37%
Retained earnings	100%	104.42%	102.04%	71.6%	65.2%
Accumulated other comprehensive income/(loss)	100%	183.77%	-23.66%	-23.67%	16.91%

Source: Own calculations based on audited financial statements of Apple Inc, (annual reports from 2016 till 2020)

According to data we analyzed we can see that in that total current liabilities decreased in 2020 due to a drop in commercial paper and deferred revenue. The total amount of common stock and shareholders' equity increased continuously during these five years. Apple Inc's total debt dropped in 2020 due to a decrease in long-term debt and commercial paper. From 2016 to 2020, Apple Inc's common stock remained to increase.

Vertical analysis of Apple Inc.,

Vertical analysis is a method of analyzing financial statements that list each line item as a percentage of a base figure within the statement within single selected period. The first line of the statement always shows the base figure at 100%, with each following line item representing a percentage of the whole. In following outcome will be using annual reports from 2016 until 2020.

By unifying the data of Apple, Inc, from its balance sheet for the past 5 years, I can get some useful data from it. Base data is chosen as Total Assets. In following table 16 , Vertical analysis of Assets represented in percentages.

Table 16: Vertical analysis of Assets

In millions of US dollars	2016	2017	2018	2019	2020
Current Assets	30.78%	33.22%	34.28%	35.91%	48.1%
Cash and cash equivalents	7.27%	6.37%	5.41%	7.09%	14.43%
Short-term marketable securities	7.05%	14.51%	14.36%	11.04%	15.28%
Accounts receivable, net	5.8%	4.9%	4.76%	6.34%	6.77%
Inventories	0.81%	0.66%	1.29%	1.08%	1.21%
Vendor non-trade receivables	4.65%	4.21%	4.74%	7.06%	6.76%
Other current assets	5.20%	2.57%	3.71%	3.3%	3.65%
Noncurrent Assets	69.22%	66.78%	65.72%	64.09%	51.9%
Long-term marketable securities	56.51%	52.98%	51.88%	46.7%	31.12%
Property, plant and equipment, net	7.74%	8.4%	9. %	11.29%	11.04%
Other non-current assets	4.97%	5.4%	4.84%	6.09%	9.74%

Source: Own calculations based on audited financial statements Apple Inc., (annual reports from 2016 till 2020)

According to the data, we analyzed we can see that from 2016 to 2020, Apple Inc's current assets were increasing. The proportion of current assets rose from 30.78% in 2016 to 48.10% in 2020. In particular, the ratio of current assets grew by

12.19% between 2019 and 2020. The reason is that Apple Inc's long-term securities fell 15.58% between 2019 and 2020. Meanwhile, during the years 2016 to 2018, Apple Inc's total assets increased, while from 2019 to 2020, apple's total assets started to decrease. Comparization between year 2020 with year 2018, Apple Inc's total assets dropped by 9.81%. The ratio of net asset value, net plant and equipment value was stable for last five years.

By unifying the data of Apple Inc, from its of Income Statements for the past eleven years, I can get some useful data from it. Base data is chosen as Revenue. In oofollowing table 17, Vertical analysis of Income Statements reprinted in percentages..

Table 17: Vertical analysis of Income Statements (percentage)

In millions of US dollars	2016	2017	2018	2019	2020
Revenue	100%	100%	100%	100%	100%
Cost of Sales	59.94%	60.92%	61.53%	61.66%	62.17%
Gross profit	40.06%	39.08%	38.47%	38.34%	37.82%
Selling, informational & administrative expenses	6.13%	6.58%	6.66%	6.29%	7.01%
Operating profit	30.48%	27.84%	26.76%	26.69%	24.57%
Other non-operating income/expenses	0.55%	0.63%	1.2%	0.75%	0.69%
EBIT	31.03%	28.46%	27.96%	27.45%	25.27%
Income Taxes	8.18%	7.27%	6.87%	5.03%	4.03%
Net Income	22.85%	21.19%	21.09%	22.41%	21.24%

Source: Own calculations based on audited financial statements of Apple Inc, (annual reports from 2016 till 2020).

The gross profit margin continued to decrease from 2016 to 2020. The main reason was caused by the improvement of the cost structure of new products, consumers' increasing pursuance of high-quality goods, and the increase of industry labor costs. Proportion of Research and developments spending was increased from

2016 to 2020. Specially in 2019, as other mobile phone companies in the industry were producing 5G mobile phones, while Apple Inc, intends to produce in 2020. During these five years, the percentage of operating revenue decreased, main cause is increase of spending on operating expenses and advertising. Net revenue proportions fluctuated from 2016 to 2020,

5 Results and Discussion

Overall, Samsung Electronics Co. Ltd. appears to be financially healthy in terms of horizontal, vertical, and ratio analyses. The company has a stable liquidity ratio but be in bad shape: it might have a consistently poor ratio (be insolvent) for 10 years straight. Alternatively it may be too liquid for long periods of time (suggests minimal investments and low project pipeline = minimal growth prospects) and ratio analyses reveal it is capable of repaying short term debts while maintaining a minimal reliance on debt financing for its operations. Conversely, activity ratios for 2019 reveal Samsung incurred efficiency losses arising from longer collection periods as debtors increased repayment time, increasing, in turn, the company's own repayment time. Samsung Electronics Co. Ltd. sustained a slow growth period from 2010-2018, over which profits consistently increased. This trend was reversed in 2019, however, as the company delivered its worst results in the last ten years. This was largely due to the changing economic environment and stiffened competition of the electronics industry.

According to the ratio analysis, we can say that the company's debt is in good condition. The company only finances its assets through its own resources and short-term liabilities. Despite the high debt ratio in 2017, which did not pose a danger due to its short-term nature, the company has achieved positive results in the debt sector. In terms of liquidity, Samsung achieved high overall liquidity and other liquidity during the reporting period.

It is assumed these changes will persist into 2020 with greater economic instability is expected due to the ongoing pandemic (Covid-19) by affecting the company's financial performance. As such, it is likely a negative impact on the company's performance will be observed by the financial year's end. Nonetheless, the financial analysis presented in this thesis demonstrates Samsung Electronic's Co. Ltd. is stable and financially healthy. With strong liquidity and a sound capital structure that is not overleveraged, the company is well positioned to eventually overcome today's financial and economic headwinds.

6 Conclusion

The goal of this bachelor thesis was to conduct a financial analysis of Samsung Electronics Co. Ltd. over the last eleven years. As the author of this thesis, I used published books and reputable online references for academic purposes. Annual financial statements are taken from audited reports of the Samsung Electronics Co. Ltd. Investor relations website for data processing and analysis. Forming the core of this thesis is the exhaustive financial analysis I conducted based on eleven years of available financial data. This document consists of two main sections: a theoretical and practical one. According to the goal questions asked in the beginning:

- *Is Samsung electronics financially healthy?*

Yes, depending on Samsung electronics the last 10 years of data analyzed under vertical and horizontal analysis have shown that the company is financially healthy and stable. Samsung electronics retains a robust liquidity profile, its debt is mostly a short-term trade product, with little financial debt on its balance sheet except for foreign-currency debt. Samsung electronics maintains a similar cash balance throughout the year with no seasonality. The company is to continue to maintain its net cash position over the longer term.

- *Is Samsung electronics good choice for investment?*

Yes, even during the last years analysis have shown negative results company has strong management and control and company has extremely low chances of bankruptcy, and it good for investors and creditors as it shows high chances of earning repayment. Firstly, semiconductor and memory intensity in computing and consumer electronics products is only likely to rise in the longer term, driven by the continued migration to cloud computing and 5G smartphones that will drive memory demand. Moreover, Samsung is seen as a leader in advanced process technologies in memory products and this could help its margins. The company has been expanding mass production of 14 nm DRAM and 176-layer V-NAND. Samsung's next generation foldable smartphones have also seen a strong response and it's likely that they could help to drive growth in the coming years.

- *How the current situation will affect/affecting the company?*

The effects of COVID-19 are having a significant impact on the technology sector, affecting raw materials supply, disrupting the electronics value chain, and causing an inflationary risk on products. Samsung electronics has strong liquidity and a sound capital structure that is not overleveraged, the company is well-positioned to eventually overcome today's financial and economic headwinds. More positively, the disruption has caused an acceleration of remote working, and a rapid focus on evaluating and de-risking the end-to-end value chain. In addition, potential carbon emission reductions could result in renewed focus on sustainability practices.

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8 Appendix

Appendix 1: Simplified Balance Sheet based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2010 till 2015)

In millions of US dollars	2010	2011	2012	2013	2014	2015
Total Assets	116,439	134,944	169,052	202,857	218,888	214,072
Current Assets	53,241	61,998	81,476	104,956	109,382	110,329
Cash and cash equivalents	8,490	12,739	17,544	15,431	15,998	20,009
Short-term financial instruments	9,997	9,997	16,243	34,798	39,603	39,096
Available-for-sale financial assets	1,005	569	1,175	1,411	3,122	4,090
Trade and other receivables	18,476	20,943	24,904	26,415	23,458	22,247
Advances	1,129	1,245	1,563	1,827	1,890	1,508
Prepaid expenses	1,908	2,020	2,112	2,343	3,179	2,803
Inventories	11,588	13,628	16,569	18,132	16,451	16,628
Other current assets	647	857	137	2,024	1,705	915
Noncurrent Assets	63,198	72,946	87,576	97,901	109,506	103,743
Available-for-sale financial assets	2,636	2,795	4,882	5,911	12,033	7,365
Associates and joint ventures	7,227	7,981	8,202	6,086	4,971	4,664
Property, plant and equipment	45,924	53,797	63,939	71,540	76,824	76,440
Intangible assets	2,410	2,909	3,133	3,772	4,546	4,770
Deposits	569	687	739	-	-	-
Long-term prepaid expenses	3,073	2,995	3,225	3,284	4,614	3,796
Deferred income tax assets	975	1,400	1,665	4,380	4,300	4,940
Other non-current assets	384	383	413	2,928	2,218	1,767
Total Liabilities & Equity	116,439	134,944	169,052	202,857	218,888	214,072
Total Liabilities	38,966	46,637	55,636	60,702	59,214	55,794
Non-current liabilities	4,331	8,209	11,818	12,076	9,804	50,325
Debentures	509	1,110	1,708	1,242	1,288	1,088
Long-term borrowings liabilities	550	3,193	3,383	933	97	236
Long-term other payables	930	889	1,088	999	2,434	2,689
Retirement benefit obligation	518	363	1,615	-	-	-
Deferred income tax liabilities	1,433	2,023	3,202	5,697	3,893	4,557
Provisions	256	315	381	5,697	474	462
Other non-current liabilities	134	316	441	1,010	1,427	1,805
Current Liabilities	34,635	38,428	43,818	48,626	49,410	5,469

Trade payables	13,916	16,049	15,768	16,710	7,518	9,861
Short-term borrowings	7,309	8,371	7,883	6,101	7,627	7,836
Advance received	766	1,258	1,417	1,617	1,356	1,188
Withholdings	913	1,487	902	1,114	1,103	878
Accrued expenses	6,158	6,784	8,865	10,750	12,232	10,279
Income tax payables	1,779	1,095	3,009	3,209	2,053	3,007
Current portion of long-term borrowings and debentures	975	26	933	2,299	1,690	196
Provisions	2,530	3,047	4,719	6,383	5,692	5,675
Other current liabilities	289	311	321	443	310	254
Total Equity	77,473	88,308	113,416	142,155	159,673	154,384
Preferred stock	104	104	112	113	113	106
Common stock	675	675	726	737	739	688
Share premium	3,819	3,819	4,112	4,173	4,183	3,893
Retained earnings	73,714	84,577	112,021	140,813	161,043	163,645
Other reserve	-4,098	-4,547	-7,649	-8,963	-12,092	-15,540
Non-controlling interest	3,260	3,681	4,095	5,281	5,611	5,465

Appendix 2: Simplified Balance Sheet based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2016 till 2020)

In millions of US dollars	2016	2017	2018	2019	2020
Total Assets	226,045	266,783	308,448	298,668	320,415
Current Assets	121,940	129,949	158,786	153,657	167,914
Cash and cash equivalents	27,686	27,005	27,577	22,776	24,891
Short-term financial instruments	45,207	43,717	59,892	64,595	78,310
Available-for-sale financial assets	3,137	2,822	-	-	-
Trade and other receivables	20,933	24,486	30,783	29,761	26,231
Advances	1,242	1,550	1,238	-	-
Prepaid expenses	3,019	3,391	3,759	2,038	1,920
Inventories	15,824	22,088	26,345	22,675	27,145
Other current assets	1,134	1,256	2,114	3,492	3,181
Noncurrent Assets	104,105	136,834	149,662	145,011	152,500
Available-for-sale financial assets	5,867	6,854	7,205	7,557	10,653
Associates and joint ventures	5,033	6,014	6,647	6,431	6,842
Property, plant and equipment	78,867	98,725	104,904	101,508	109,240
Intangible assets	4,608	13,050	13,535	17,539	15,645
Deposits	-	-	-	-	-
Long-term prepaid expenses	3,306	3,036	4,553	-	-
Deferred income tax assets	4,588	4,475	4,970	3,816	3,621
Other non-current assets	1,355	3,855	6,983	6,772	4,332
Total Liabilities & Equity	226,045	266,783	308,448	298,668	320,415
Total Liabilities	59,673	77,148	83,261	75,974	86,651
Non-current liabilities	12,508	17,758	20,471	21,942	22,604
Debentures	50	843	874	826	803
Long-term borrowings liabilities	1,073	1,604	77	1,861	1,694
Long-term other payables	2,860	1,807	2,903	1,850	1,426

Retirement benefit obligation	-	-	-	-	-
Deferred income tax liabilities	6,288	10,354	13,782	14,447	15,935
Provisions	309	411	603	518	891
Other non-current liabilities	1,778	2,395	1,774	2,041	1,462
Current Liabilities	47,165	59,390	62,789	54,032	64,047
Trade payables	5,591	8,031	7,708	7,385	8,250
Short-term borrowings	10,990	13,940	12,349	12,193	14,023
Advance received	1,172	1,104	746	908	970
Withholdings	591	702	865	760	826
Accrued expenses	10,801	12,374	18,487	16,400	20,611
Income tax payables	2,446	6,550	7,926	1,176	3,753
Current portion of long-term borrowings and debentures	1,063	246	30	717	607
Provisions	3,964	3,797	3,985	3,447	3,685
Other current liabilities	303	356	959	878	955
Total Equity	166,371	189,635	225,187	222,694	237,637
Preferred stock	103	106	109	101	101
Common stock	671	688	707	659	659
Share premium	3,797	3,894	4,003	3,731	3,731
Retained earnings	166,478	190,802	220,594	215,665	229,630
Other reserve	-10,290	-12,288	-7,209	-4,209	-7,359
Non-controlling interest	5,638	6,435	6,984	6,747	7,012

Appendix 3: Simplified Income Statement based on audited financial statements of Samsung Electronics Co., Ltd (annual reports from 2010 till 2015)

In millions of US dollars	2010	2011	2012	2013	2014	2015
Revenue	135772	143069	187754	216709	195883	177365
Cost of Sales	90146	97238	118245	130481	121857	109151
Gross profit	45626	45831	69510	86228	74026	68125
Selling, informational & administrative expenses	23043	23777	42389	51371	50254	44867
Operating profit	15187	14090	27121	34857	23772	23348
Other non-operating income/expenses	1991	1213	1450	1250	1790	2775
Finance income	6555	6419	7316	7595	7846	9295
Finance expense	6761	6844	7408	7349	6929	8867
EBIT	16971	14878	27929	36354	26750	22948
Income Taxes	2794	2970	5667	7476	4256	6100
Net Income	14177	11908	22262	28878	22223	16848

Appendix 4: Simplified Income Statement based on financial statements of Samsung Electronics Co., Ltd (annual reports from 2016 till 2020)

In millions of US dollars	2016	2017	2018	2019	2020
Revenue	174048	211812	221568	197691	200606
Cost of Sales	103703	114308	120336	126336	122400
Gross profit	70345	97504	101233	71355	78206
Selling, informational & administrative expenses	45134	50076	47709	47529	47714
Operating profit	25211	47428	53523	23826	30491
Other non-operating income/expenses	685	1585	802	667	507
Finance income	9817	8609	9089	8719	10392
Finance expense	9231	7938	7825	7100	9588
EBIT	26481	49684	55589	26112	30789
Income Taxes	6887	1239	15284	7459	8418
Net Income	19594	37298	40306	18653	22371

Appendix 5: Simplified Balance Sheet based on audited financial statements of Apple Inc, (annual reports from 2016 till 2020)

In millions of US dollars	2016	2017	2018	2019	2020
Current Assets	89378	106869	128645	131339	162819
Cash and cash equivalents	21120	20484	20289	25913	48844
Short-term marketable securities	20481	46671	53892	40388	51713
Accounts receivable, net	16849	15754	17874	23186	22926
Inventories	2349	2132	4588	3956	4106
Vendor non-trade receivables	13494	13545	17799	25809	22878
Other current assets	15085	8283	13936	12087	12352
Noncurrent Assets	200967	214817	246674	234386	175697
Long-term marketable securities	164065	170430	194714	170799	105341
Property, plant and equipment, net	22471	27010	33783	41304	37378
Other non-current assets	14431	17377	18177	22283	32978
Total Liabilities & Equity	290345	321686	375319	365725	338516
Total Liabilities	170990	193437	241272	258578	248028
Non-current liabilities	37051	39004	43251	48914	50503
Long-term debt	53329	75427	97207	93735	91807
Other non-current liabilities	37051	39004	43251	48914	50503
Current Liabilities	80610	79006	100814	115929	105718
Accounts payable	35490	37294	49049	55888	46236
Other current liabilities	25181	22027	25744	33327	37720
Deferred revenue	8940	8080	7548	5966	5522
Commercial paper	8499	8105	11977	11964	5980
Short-term debt	2500	3500	6496	8784	10260
Total Equity	119355	128249	134047	107147	90488
Common stock	27416	31251	35867	40201	45174
Retained earnings	92284	96364	98330	70400	45898
Accumulated other comprehensive income/(loss)	-345	634	-150	-3454	-584

Appendix 6: Simplified Income Statement based on audited financial statements of Apple Inc, (annual reports from 2016 till 2020)

In millions of US dollars	2016	2017	2018	2019	2020
Revenue	233715	215639	229234	265595	260174
Cost of Sales	14089	131376	141048	163756	161756
Gross profit	93626	84263	88186	101839	98392
Selling, informational & administrative expenses	22396	24239	26842	30941	34462
Operating profit	71230	60024	61344	70898	63930
Other non-operating income/expenses	1285	1348	2745	2005	1807
EBIT	72515	61372	64089	72903	65737
Income Taxes	19121	15685	15738	1372	10481
Net Income	53394	45687	48351	59531	55256