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Diploma Thesis

Financial analysis of chosen company Apple Inc.

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Declaration

I declare that I have worked on my Diploma Thesis titled “Financial analysis of Apple Inc.” by myself and I have used only the sources mentioned at the end of the thesis. As the author of the Diploma Thesis, I declare that the thesis does not break copyrights of any third person.

In Prague on date of submission _____

Financial analysis of chosen company – Apple Inc.

Summary

The diploma thesis focuses on a financial (Fundamental and Technical) analysis of “Apple Inc.". In addition to the financial analysis, the thesis evaluates the current condition of the company.

The key words for this thesis are "financial analysis", "fundamental analysis", "technical analysis", "activity", "liquidity", "profitability", "horizontal and vertical analysis", "simple moving average", "Bollinger Bands", "relative strength index", "correlation", etc.

The theoretical part provides a basic overview of the definitions and also explains the basic theories of fundamental and technical analyses. In addition, a brief description of financial indicators is given, utilizing an income statement, ratio analysis, balance sheet and stock price charts.

In the practical part, Apple Inc.'s profile is examined with a focus on technical and fundamental analysis. The objective of the financial analysis is to provide an overview of the fundamental and technical aspects of Apple, in addition to providing an overall financial picture of “Apple Inc.”

Key words: financial analysis, fundamental analysis, technical analysis, activity, liquidity, profitability, leverage, horizontal and vertical analysis, simple moving average, Bollinger Bands, relative strength index, correlation.

Finanční analýza vybrané společnosti - Apple Inc.

Souhrn

Diplomová práce se zaměřuje na finanční (fundamentální a technickou) analýzu společnosti „Apple Inc.“ Kromě finanční analýzy tato práce navíc hodnotí i současný stav společnosti.

Klíčová slova pro tuto práci jsou „finanční analýza“, „fundamentální analýza“, „technická analýza“, „aktivita“, „likvidita“, „ziskovost“, „horizontální a vertikální analýza“, „klouzavý průměr“, „Bollingerova pásma","index relativní síly"," korelace" atd.

Teoretická část poskytuje základní přehled definic a také vysvětluje základní (hlavní/ základní teoretické principy) teorie fundamentální a technické analýzy. Dále je uveden stručný popis finančních ukazatelů s využitím výkazu zisků a ztrát (výsledovky), poměrové analýzy, rozvahy a grafů cen akcií.

V praktické (empirické) části je zkoumán profil společnosti Apple Inc. se zaměřením na technickou a fundamentální analýzu. Cílem finanční analýzy je nejen poskytnout celkový finanční obraz společnosti „Apple Inc.“, ale i přehled o základních a technických aspektech společnosti Apple.

Klíčová slova: finanční analýza, fundamentální analýza, technická analýza, aktivita, likvidita, ziskovost, pákový efekt, horizontální a vertikální analýza, klouzavý průměr, Bollingerovy pásma, index relativní síly, korelace.

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1. Introduction

Apple Inc. is one of the biggest American multinational technology company. It was found April 1st, 1976 by Steve Jobs, Steve Wozniak and Ronald Wayne. Apple Inc. is a leader in their field. Their products available almost everywhere in the world. Since August 2018 market capitalization of Apple Inc. has reached 1 trillion dollars. After July 31st, Apple passed the state oil giant Saudi Aramco to become the world's most valuable publicly traded company.

Years of hard work, billions of calculations and research stand behind stability and success of every company. Therefore, there is no way to underestimate the importance of financial and technical analyses. These analyses help to determine the success of the organization in general and its smaller divisions. In addition, financial analysis is used to analyze factors influencing the company's financial stability.

Financial analysis, including all indicators and ratios, is the most useful source of widely used financial information. With these tools, top managers, creditors, shareholders, banks, suppliers, competitors and investors can evaluate businesses. Even if they use this information for their own various reasons, there is no better source for collecting this information.

2. Objectives and Methodology

2.1. Objectives

The main purpose of this diploma thesis is to evaluate financial situation of Apple Inc., in years 2017-2020. Apple Inc. is one of the famous American multinational companies in technology industry and ranked first by market capitalization in the world. The work will focus on the effectiveness of the financial and economic activity of the company in the current market. To evaluate the future scenario of Apple Inc. will be used Financial ratios such as: profitability, leverage, liquidity and activity. Also, it is going to be used Technical analyses like: Simple Moving Average, Relative Strength Index and Bollinger Bands. And the last is to find if there any correlations between Apple, Microsoft and Cisco Systems, Inc.

Hypotheses

H_1: Quick ratios has increased since 2017

H_2: There is strong correlation between Apple and Microsoft stocks

H_3: Simple Moving Average shows that stock price is increasing

2.2. Methodology

It is understandable that financial analysis of Apple Inc., were done before, so that's why has been chosen to use secondary data from an annual report of the company. In this diploma thesis will be used quantitative methods for the better understanding of the financial situation which happened with Apple Inc. over the last couple years. The main source of data for this diploma thesis is will be "Apple Inc. annual report". Chosen time period for an annual report is going to be from 2017 to 2020. Also, stock prices from New York stock Exchange is going to be used.

For this Diploma these will be use two types of the analysis: Technical and Fundamental analyses. Fundamental analysis will be used for the better understanding of business aspects of Apple Inc. For the Fundamental analysis will be used Horizontal analysis, Vertical analysis, Dept ratios, Liquidity ratios, Profitability ratios and Activity ratios. Technical analysis will be providing provide detailed information about a stock price.

For the comparison of stock prices between Apple, Microsoft and Cisco Systems, Inc. will be used correlation analysis which will be done in Microsoft Excel.

Conclusion is going to provide an answer for the questions as if Apple Inc., still that profitable. Also, will be provided an answer for the hypotheses question, either they will be rejected or not.

3. Theoretical Part

Financial analysis is used to determine economic conditions, set financial policy, create long-term business operation strategies, and classify investment projects. This can be achieved by synthesizing financial numbers and details. A financial analyst will closely review the financial statements of a company: income statement, balance sheet, and statement of cash flow. In both corporate finance and investment finance environments, financial analysis can be performed.

One of the most common used methods to evaluate financial data of the company is to compare calculated ratios from financial statement of the company with competitors or again its own historical performance.

In corporate finance, in order to improve business decision-making process, the analysis is conducted internally by the accounting department and discussed with management. To find projects worth implementing, this form of internal analysis can involve ratios such as net present value (NPV) and internal rate of return (IRR).

A main area of corporate financial analysis includes deriving the past performance of a company, such as net earnings or profit margin, into an estimation of the potential performance of the company. This kind of historical pattern analysis is suitable for analyzing seasonal patterns.

3.1. Financial Analysis

The most frequently used sources for financial analysis are financial statements.

"Financial are at the heart of every business, whether it is a transaction with a customer at a cash register or a multibillion-dollar corporate merger. Both follow the same set of accounting rules and are registered in financial statements, which are nothing more than a

summary of all the financial dealings that occurred within the business over a specific period of time." (Kline, 2007).

Financial analysis requires the use of financial data to determine the success of an organization and to make recommendations on how to improve it in the future.

3.1.1. Leverage ratios

A leverage ratio is any of many accounting measures that evaluate how much capital comes in the form of debt (loans) or measure a company's ability to fulfill its financial obligations. The category of leverage ratio is essential because businesses rely on a mixture of equity and debt to fund their operations, and it is beneficial to know the amount of debt held by a company to determine whether it will pay off its debts when they are due. There are several different ratios that can be defined as a leverage ratio, but debt, equity, assets, and interest expenses are the key factors.

A leverage ratio can also be used to calculate the combination of operating expenses of a business to get an idea of how operating income would be influenced by changes in output. Fixed and variable costs are the two forms of operating costs; the combination can vary depending on the sector and the market.

3.1.1.1. Debt to Equity ration

The Debt to Equity ratio is a leverage ratio that measures the weight against the overall equity of the shareholders of the total debt and financial liabilities. This ratio illustrates how the financial structure of an organization is tilted towards either debt or equity funding.

Short formula:
Debt to Equity Ratio = Total Debt / Shareholders' Equity

Long formula:
Debt to Equity Ratio = (short term debt + long term debt + fixed payment obligations) / Shareholders' Equity

Given that the debt-to-equity ratio measures the debt of a company relative to the value of its net assets, the calculation of the extent to which a company takes on debt as a way of optimizing its assets is most frequently used. High risk is also associated with a high debt/equity ratio; this means a business has been aggressive in funding its growth with debt.

3.1.1.2. Debt to Capital

Analysts and investors have a greater idea about the financial structure of a company with a debt-to-capital ratio and whether a company is suitable for investment. The greater the debt-to-capital ratio, the riskier the organization is. All other variables are equal. And the higher the debt-funded the company, the greater is the liability of the debt and the probability that the debt will be paid in due time, the higher the debt-funded company.

While one business could be paralyzed by a certain amount of debt, the same amount would hardly impact another. The use of total capital also provides a more realistic image of the health of the company, since it frames debt rather than dollar amounts as percentages of the capital.

Formula: Debt to Capital Ratio=Debt/Debt + Shareholders′ Equity

3.1.1.3. Debt to Assets

The debt-to-asset ratio, also referred to the debt ratio, is the leverage ratio that shows the proportion of assets funded by debt. The higher the ratio, the more leverage and financial risk you will have.

Creditors typically use the debt to equity ratio to measure the level of debt, the ability to pay back debt and whether more loans are extended to the company. Investors, on the other hand, use the ratio to ensure that they are solvent, fulfill current and future commitments and produce a return on investment.

Formula: Debt/Asset = (Short-term Debt + Long-term Debt) / Total Assets

3.1.1.4. Interest Coverage Ratio

The Interest Coverage Ratio (ICR) is a financial ratio used to calculate how well the interest on its outstanding debts can be paid by a company. The ICR is frequently used to assess the risk of lending capital to a business by lenders, creditors, and investors. The ratio of interest coverage is also called the ratio of "times interest earned".

The lower the ICR, the higher the debt burden of the company and the greater the risk of bankruptcy or default. A lower ICR means that there is less earnings available to cover interest payments and that the business is more vulnerable to increases interest rate.

If the interest coverage ratio of a business is only 1.5 or lower, its ability to meet interest expenses may be doubtful. An interest coverage ratio below 1.0 suggests that the firm is having trouble raising the money required to meet its interest obligations (i.e. interest payments in excess of its earnings (EBIT)).

Formula: Interest Coverage Ratio = EBIT/ Interest Expense
EBIT – is the company's operating profit (Earnings Before Interest and Taxes)

3.1.2. Profitability Ratios

Profitability ratios are financial measures used by analysts and investors to assess and analyze a company's ability to produce revenue (profit) compared to revenue, balance sheet assets, operating costs, and shareholder equity. They illustrate how effectively a corporation uses its assets to create shareholder benefit and value.

3.1.2.1. Gross Profit Margin

Gross profit margin is a measure used to determine the financial health of a business by measuring the amount of money left over from product sales after subtracting the price of products sold.

If the gross profit margin of a business fluctuates wildly, this may signify poor management practices and/or inferior products. On the other hand, in cases where an organization makes structural changes to its business model, such fluctuations can be justified, in which case temporary volatility should be no cause for alarm.

For example, if a business chooses to automate certain supply chain functions, the initial investment might be high, but because of the reduced labor costs arising from the implementation of automation, the cost of goods eventually decreases.

Gross profit margin = gross profit / total revenue

3.1.2.2. Operating Profit Margin

Operating profit margin-sees profits as a percentage of sales before deducting interest costs and revenue taxes. In general, businesses with high operating profit margins are better positioned to pay for fixed costs and interest on obligations, are more likely to withstand an

economic recession, and are more able to deliver lower rates than their lower profit-margin rivals. Operating profit margin is also used to measure the strength of the management of a company, as effective management can greatly boost a company's profitability by managing its operating costs.

Operating profit margin varies across industries and is also used as a metric to benchmark one business against similar businesses within the same industry. In an industry, it may show the top performers and suggest the need for more research into whether a particular business is outperforming or falling behind its peers.

The operating profit margin of a corporation is an evidence of how well it is managed because variable costs, rather than fixed expenses, are operating expenses such as wages, rent, and equipment leases. A business may have little control over the direct cost of production, such as the cost of raw materials used to manufacture the goods of the company. However, in areas like how much company want to spend on office rent, supplies, and staffing, the management of the business has a great deal of discretion. Therefore, as compared to gross or net profit margin, the operating profit margin of a company is generally seen as a superior measure of the strength of the management team of a company.

Operating Profit Margin = Operating Income / Sales Revenue

3.1.2.3. Net Profit Margin

Net Profit Margin looks at the net profits of a company and divides it into overall sales. It offers the final image of how profitable a business is after all expenses have been taken into account, including interest and taxes. As an indicator of profitability, one explanation for using the net profit margin is that it takes everything into account. A downside of this indicator is that it contains a lot of "noise" such as one-time expenses and gains, making it more difficult to equate the profitability of a business with its rivals.

One of the most important indicators of the financial health of a business is net profit margin. A business may determine whether current policies are working and forecast profits based on revenue by monitoring increases and decreases in its net profit margin. Since companies express the net profit margin as a percentage rather than a dollar figure, the profitability of two or more businesses can be compared regardless of size.

Net Profit Margin = (Net Profit / Revenue) x 100

Net Profit = Revenue – COGS (Cost of Goods Sold) – Operating Expenses – Interest – Taxes

3.1.3. Return on Assets

As the name indicates, return on assets (ROA) shows the amount of net earnings compared to the total assets of the company. Primarily, the ROA ratio shows how much after-tax profit a company produces for each dollar of assets it carries. The lower the profit of assets per dollar, the more asset-intensive a company is considered to be. In order to produce profits, highly asset-intensive businesses need major investments to buy machinery and equipment.

In simple terms, Return on Assets (ROA) tells what income was generated from the capital invested (assets). ROA can differ considerably for public corporations and will be highly dependent on the industry. This is why it is better to compare it against the previous ROA numbers of a company or against the ROA of a similar company when using ROA as a comparative measure.

The ROA figure gives investors an indication of how good the business is in turning the cash it spends into net sales. The higher the ROA number, the better, because with less spending, the business earns more money.

ROA = Net Income / Total Assets

3.1.3.1. Return on Equity

Return on Equity (ROE) shows the percentage of net income relative to stockholders' equity. In its derivation, Return on Equity is a two-part ratio since it puts the income statement and the balance sheet together, where net income or profit is compared to the equity of the shareholders. The number demonstrates the total return on equity capital and indicates the ability of the company to turn investments in equity into profits. To put it another way, it calculates the profits generated from shareholders' equity for each dollar.

ROE = Net Income / Shareholders' Equity

The shareholder's equity is equivalent to total assets, minus total liabilities. Shareholder equity is an accounting product that reflects the assets provided by the retained earnings of the company and the paid-in capital of the shareholders.

3.1.4. Liquidity Ratios

A liquidity ratio is a one of a financial ratios that is used to evaluate the capability of a business to pay its short-term debt obligations. The metric helps to assess whether a business has a possibility to use its current or liquid assets in order to cover its current liabilities.

There are three most commonly used liquidity ratios – quick ratio, current ratio and cash ratio. The current liability amount is placed in the denominator of the equation for each of the liquidity ratios, and the liquid asset amount is placed in the numerator.

Taking into account the structure of these ratios, with assets on top and liabilities on the bottom, results above 1 are sought after. A ratio of 1 means that, with its current assets, a business will precisely pay off all its current liabilities. A ratio of less than 1 would mean that it is not possible for a business to meet its current liabilities. A ratio of 2.0 actually means that a business will cover its current liabilities two times over.

3.1.4.1. Current Ratio

The current ratio is a liquidity ratio which measures the ability of a business to pay short-term or due obligations within one year.

Current ratio = Current assets / Current liabilities

The higher the ratio, the more liquid the business is. Usually The socially acceptable current ratio is 2; for most companies, it is a comfortable financial situation. Appropriate current ratios differ between industries. 1.5 could be an acceptable option for most industrial companies.

Low current ratio values (values lower than 1) suggest that an organization will have trouble fulfilling current obligations. However, to get a better understanding of its liquidity, an investor should also take note of the operating cash flow of a firm. A good operating cash flow may also sustain a lower current ratio.

If the current ratio is too high (much more than 2), the organization can not be able to effectively use its current assets or short-term financing facilities. This may also reflect difficulties in the working capital management.

3.1.4.2. Quick Ratio

The quick ratio is an indication of the short-term liquidity position of a company and measures the ability of a company with its most liquid assets to fulfill its short-term obligations. Since it shows the ability of the company's capacity to pay assets (assets that can be easily converted to cash) immediately to pay down its current liabilities.

Quick Ratio = (Accounts Receivables + Cash + Marketable Securities) / Current Liabilities

The greater the quick ratio, the better the performance of the business. The quick ratio that is typically acceptable is 1, although it can differ from industry to industry. A business with a quick ratio of less than 1 is currently unable to repay its current liabilities; it is a bad sign for investors and partners.

3.1.4.3. Cash Ratio

The cash ratio is a calculation of the liquidity of a company, specifically the ratio of the total cash and cash equivalents of a company to its current liabilities. The metric measures the ability of a business to repay its short-term debt with cash or near-cash resources, such as securities that are easily marketable.

Cash Ratio = (Marketable Securities + Cash) / Current Liabilities

In financial analysis, the cash ratio is not as common as current or quick ratios, and its usage is limited. There is no common cash ratio standard. A cash ratio of no less than 0.2 is considered appropriate in certain countries. But too high cash ratio may indicate low use of assets for a company that keeps large amounts of cash on its balance sheet.

3.1.5. Activity Ratios

Activity ratios are financial metrics used to gauge how effective the activities of an organization are. The term can include multiple ratios that can be applied to how effectively a business uses its resources or assets. Activity ratios are helpful in comparing how the performance of a company trends over time in a horizontal analysis or how the performance of a company performs in comparable company analysis against its competitors. They are often referred to as ratios of turnover or operating efficiency ratios.

3.1.5.1. Receivables Turnover

The accounts receivable turnover calculates how well a business is able to manage its credit sales and transform its receivables into cash. A high receivables turnover means that a business is able to transform its receivables into cash very easily, while a low turnover of receivables indicates that a business is unable to convert its receivables as quickly as it can.

To assess if a trend or pattern is evolving over time, a company's receivables turnover ratio should be monitored and tracked. Companies should also track and compare the accumulation of receivables to earnings to calculate the effect on profitability of the company's credit practices.

For investors, to get a sense of what the standard or average turnover ratio is for that sector, it is useful to compare the accounts receivable turnover of several companies within the same industry. If one firm has a far higher turnover ratio of receivables than the other, it will prove to be a safer one.

Receivables Turnover = Revenue / Average Receivables

3.1.5.2. Inventory Turnover

Inventory turnover evaluates how easily a business can manage its inventory. A low ratio of inventory turnover is an indication that inventory moves too slowly and capital ties up. A business with a high inventory turnover ratio, on the other hand, can transfer inventory at a rapid pace; but if the inventory turnover is too high, it can lead to shortages and loss of sales.

A high ratio shows either strong sales or insufficient inventory ratio. The former is desirable, while the latter can lead to business losses. A low inventory turnover rate is often a positive thing, such as when prices are expected to increase (pre-positioned inventory to meet rapidly increasing demand) or when shortages are expected.

A vital indicator of market success is the pace at which a firm can sell inventory. Distributors that move product out quicker appear to outperform. The longer an item is kept, the higher its storage cost will be, and for new items, the less reasons consumers will have to return to the store.

Inventory Turnover = Cost of Goods Sold / Average Inventory

3.1.5.3. Payables Turnover

Payables turnover analyses how quickly a business pays off its creditor-payable accounts. A low payable turnover may indicate either lenient credit terms or a company's inability to pay its creditors. A high payable turnover might mean that a business pays creditors too soon or can take advantage of early payment discounts.

Payables Turnover = Cost of Goods Sold / Average Payables

3.1.5.4. Fixed Asset Turnover

This efficiency ratio compares net sales (income statement) with fixed assets (balance sheet) and calculates the capacity of a business to produce net sales from its investments in fixed assets.

As a percentage of accumulated depreciation, the fixed assets value is used. A higher fixed asset turnover ratio means a business has used investment in fixed asset to efficiently produce sales.

- The fixed asset turnover ratio reflects the efficiency of a business in generating income from its fixed assets.
- A higher ratio means that management uses the fixed assets more effectively.
- A high FAT ratio says nothing about a company's ability to generate strong sales or cash flow

Fixed Asset Turnover = Revenue / Average Net Fixed Assets

3.1.5.5. Total Asset Turnover

Total asset are all the assets listed on the balance sheet of a company, both operating and non-operating (current and long-term). The total assets turnover is an indicator of how successfully a corporation uses its total assets. A high ratio shows that a business uses its total assets very effectively or that, to begin with, it does not own many assets. A low ratio implies that too much money is tied up in assets and that revenue generation assets are not being used effectively.

For businesses in some industries, the asset turnover ratio appears to be higher than for others. For example, retail and consumer goods have rather small asset bases but a large

selling volume – they thus have the highest average asset sales ratio. On the other hand, businesses in industries such as utilities and translocation have broad asset bases and low asset turnover.

Since this ratio can differ greatly between industries, it is not very useful to compare a retail company's asset sales relationships with a telecommunications company. Only when the comparisons are made with various firms in the same sector is they relevant.

Total Assets Turnover = Revenue / Average Total Assets

3.2. Balance sheet

A balance sheet is a financial statement that at a given point in time reports the assets, liabilities and shareholder equity of a company and provides a framework for estimating rate return and analyzing the capital structure. It is a financial statement that shows a summary of what is owned and owed by a company, as well as the amount invested by shareholders.

In addition to other significant financial statements, such as the income statement and the statement of cash flows, the balance sheet is used to perform fundamental analysis or measure financial ratios.

The balance sheet adheres to the following accounting equation, which balances assets on the one hand and liabilities plus equity of shareholders on the other:

Assets = Liabilities + Shareholders' Equity

3.2.1. Assets

An asset is an item held by the company, with the intention that it will deliver future financial advantage. This advantage can be accomplished by improved buying power (i.e. reduced expenses), production of sales or cash receipts.

3.2.1.1. Current Assets

Current assets are short-term economic resource that the company plans to turn to cash or use within a year or a longer operating period. Cash, receivable accounts and inventory (e.g., raw materials, work in progress, finished goods) are examples of current assets

3.2.1.2. Fixed Assets

Fixed assets are long-term assets that have been acquired by a corporation and are used to manufacture its products and services. Fixed assets are non-current assets, meaning more than one year of useful life for the assets. Fixed assets include and listed on the balance sheet as property, plant, and equipment (PP&E). Fixed assets, meaning they are physical assets, are often referred to as tangible assets.

Examples of Fixed Assets:

- Vehicles
- Furniture
- Machinery
- Buildings
- Land

3.2.1.3. Financial Asset

A financial asset is a liquid asset that, from a contractual right or ownership claim, gets its value. Examples of financial assets include cash, securities, shares, mutual funds, and bank deposits. Financial assets do not usually have an intrinsic physical value or even a physical shape, unlike land, buildings, commodities, or other tangible physical assets. Instead, their value represents supply and demand conditions in the marketplace they trade in, as well as the degree of risk they bear.

3.2.1.4. Intangible Asset

An intangible asset is an asset that is not necessarily physical. All intangible assets are goodwill, brand awareness, intellectual property, patents, trademarks, and copyrights. As compared to tangible assets, which include property, vehicles, machinery, and inventory, intangible assets exist. In addition, tangible assets are known to be financial assets, such as stocks and bonds, which derive their value from contractual statements.

3.2.2. Equity

Equity, usually referred as the equity of shareholders (or owners' equity for private companies), reflects the sum of money that would be returned to the shareholders of a

corporation if all the assets were liquidated and in the event of liquidation, all the debt of the company was paid off. In the case of the purchase, the value of the sale of the company minus any liabilities owed by the company not transferred from the sale is the value of the sale of the company minus any liabilities owed by the company not transferred from the sale. Equity can be found on the balance sheet of a company and is one of the most common pieces of data used by investors to measure a company's financial health.

To evaluate the equity of a company, which is derived from the accounting equation, the following formula and calculation can be used:

Shareholders' Equity=Total Assets−Total Liability

3.2.2.1. Type of Equities

1) Common stock demonstrates the investment in the company made by the owners or shareholders as a capital contribution. This include both the shares which entitle the shareholders to vote and their residual claim on the assets of the company.
2) Retained earnings are the part of net income that is not paid out as a dividend to shareholders as dividends. Instead, it is held for reinvestment in the company or to pay off future obligation.
3) Wages payable: the total amount obtained but not yet received by workers earned wages.
4) Dividends payable are dividends declared to be payable to their shareholders by the board of directors of a corporation. When the corporation finally pays the shareholders, the cash amount of the dividend is reported as a current liability within a dividend payable account.

3.2.3. Liabilities

A liability is anything owed by an entity or corporation, usually an amount of money. Liabilities are resolved by transferring economic benefits, including income, goods, or services, over time. Liabilities include loans, accounts payable, mortgages, deferred revenues, bonds, guarantees, and unpaid expenses, as recorded on the right side of the balance sheet.

In general, a liability is a duty not yet fulfilled or paid for between one of the parties to another. A financial liability is also an obligation in the field of accounting, but is more determined by prior business transactions, incidents, purchases, exchange of goods or services, or something at a later date that will provide economic benefits. Liabilities are usually called short-term (expected to be resolved in 12 months or less) or long-term (12 months or greater).

3.2.3.1. Current Liabilities

Current liabilities are a business entity's financial obligations that are due and payable within a year. When a corporation has experienced a transaction that has created an expectation for a potential outflow of cash or other economic capital, a liability arises.

In this definition, the main operator is the word "expectation," as a liability does not always have to result in a value outflow but must reasonably be expected to result from the acceptance of the liability.

While a current liability is defined as payable within one year, a wider definition of the term may include liabilities payable within the operating company's business cycle. In other words, if a company conducts a business cycle that lasts beyond the time of a year, a current liability is defined for that company as any liability due during the two periods.

3.2.3.1.1. Examples of Current Liabilities

- Dividends payable are used to characterize the cash that a business owes to its shareholders on the basis of a payout officially approved by the board of directors of the company.
- Interest payable, including long-term obligations, on outstanding debts

3.3. Income Statement

The Income Statement is one of the main financial statements of a business that demonstrate its profit and loss for a period of time. To calculate profit or loss is needed to take all revenue and subtract all expenses from operating and non-operating activities.

In both corporate finance (including financial modeling) and accounting, the income statement is one of three statements used. The statement demonstrates company's sales,

expenditures, gross profit, sales and operating expenses, other expenses and profits, taxes paid, and net profit.

The statement is divided into time intervals that follow the operations of the company. The most common periodic division is monthly (for internal reporting), although a thirteen-period cycle can be used by some organizations. For quarterly and annual results, these periodic statements are aggregated into overall values.

Net Income = (Total Revenue + Gains) – (Total Expenses + Losses)

3.4. Vertical analysis

Vertical Analysis is a tool for the analysis of the financial statement, which lists each item in the statement as a percentage of the basic amount. The items on an income statement can then be reported as a percentage of gross revenue and the items on the balance sheet as a percentage of total capital or liabilities and each cash influx or outflow as a percentage of the overall cash inflows is displayed vertically by a cash flux statement.

The vertical analysis makes comparison between one company and another financial statements and across sectors much simpler. This is because the proportions of the financial statements can be seen. It makes it easier to compare previous time-series analyzes in the quarterly and annual figures for a few years, so that a picture can be obtained of the change or degradation of output measures.

For example, by illustrating the different products on the expense line as a share of sales in the income statement, can be seen how they relate to profit margins and whether profitability increases over time. The profitability of a business with its competitors is therefore easier to compare.

Financial statements that provide vertical analysis clearly demonstrate the percentages of line items in a particular column. Such financial statements are often known for their common size, including comprehensive vertical analyzes, and many businesses use them to clarify a company's financial status in more detail.

3.5. Horizontal analysis

The horizontal analysis is used for analyzing historical data, such as percentages or line items over a variety of accounting periods in the financial statement analysis. Horizontal

analysis can use either absolute comparisons or percentage comparisons where the figures are given as a percentage of the total in the baseline year for each succession cycle, with a comparison number of 100 percent. This is often referred to as a base-year analysis.

Horizontal analysis helps investors and analysts to detect the financial results of a business over a number of years, and to detect trends and patterns of growth including seasonality. It helps analysts to analyze and schedule relative adjustments to various line items over time. By looking at the income statement, balance sheet and cash flow statement over time, you will see what is driving the success of an organization and whether it is functioning effectively and profitably, in a full overview.

Analysis of critical corporate performance measures such as profit margins, inventory turnover and equity return can identify emerging strengths and problems. For example, earnings per share (EPS) may have improved due to a decrease in the cost of produced products or strong growth in sales. And coverage ratios such as the cash flow-to-debt ratio and interest coverage ratios can indicate whether a business can provide sufficient liquidity to service its debt. Horizontal analysis also simplifies the comparison of several firms with growth rates and profitability.

3.6. Technical analysis

Technical analysis utilizes statistical patterns, such as moving averages, obtained from trading activities. Essentially, technical analysis assumes that the price of a security already represents all the details available to the public and relies instead on statistical analysis of price changes. Technical analysis tries to understand the market sentiment behind price movements by searching for trends and patterns instead of evaluating the fundamental attributes of a security.

With historical trading data, technical analysis can be used on any security. This includers: commodities, stocks, futures, fixed income and other securities.

Technical analysis focuses on price and volume research, unlike fundamental analysis which attempts to evaluate the value of security on the basis of business results, including sales and earnings. Technical analysis tools are used to analyze ways in which security supply and demand influence price, volume and implied volatility adjustments. Technical analyzes are mostly used to produce short trade signals from different charts but may also

help to determine the intensity or vulnerabilities of a protection relative to the larger market or one of their sectors.

Any security with historical trading data can be used for technical analysis. It includes stocks, futures, commodities, fixed incomes, currencies and other stocks. Typically, traders examine inventories in our examples in this tutorial, but note that these principles can be applied to any kind of security. Technical analysis in commodities and forex markets where trader focuses on the short-term price fluctuations is currently much more common.

3.6.1. Simple Moving Average

The Simple Moving Average (SMA) refers to the average closing price of a stock for a certain period of time. The explanation why the average is called "moving" is that the price of the stock changes continuously, so the moving average changes accordingly. In technical analysis, SMA is one of the key indicators and is typically the easiest moving average to build.

The goal of all moving averages is to determine the direction in which a stock price moves based on previous prices. Since SMA is developed using past closing values, it is a lag metric. This means that it actually indicates an earlier pattern, but it is not indicative of future prices.

3.6.2. Relative Strength Index

One of the most common and commonly used momentum oscillators is the Relative Strength Index (RSI). The famous mechanical engineer who became a technical analyst, J Welles Wilder, originally designed it. In price changes within the industry, the RSI tests both the speed and rate of change.

The RSI oscillator values, usually calculated over a span of 14 days, vary between zero and 100. The Relative Strength Index displays market conditions that are over-sold when below 30 and market conditions that are overbought when above 70. It is used by swing traders regularly. In short to intermediate term price fluctuations within a market, they search for signs of waning or strengthening momentum. Overbought or oversold conditions often immediately precede shifts in short-term patterns that present opportunities for trading.

3.6.3. Bollinger Bands

Bollinger Bands is a technical analysis method developed for trading stocks by John Bollinger in the 1980s. Bands comprise an index of uncertainty that calculates the relative high or low price of a security relative to previous transactions. Volatility is calculated using standard deviation, which varies in volatility with increases or decreases. When there is a price rise, the bands widen, and narrow when there is a price decrease. Bollinger Bands can be extended to the exchange of different securities due to their complex nature.

There are three lines include in Bollinger Bands (upper, middle and lover bands). A moving average is a middle band, and the stockbroker selects its parameters. The upper and lower bands are positioned on both side of the moving average. The trader calculates the number of standard deviations at which the index of volatility is set. In essence, the number of standard deviations defines the distance between the upper and lower bands and the middle band. These bands' location offers details on the strength of the trend and the possible high and low price levels that can be expected in the near future.

3.7. Correlation Analysis

Correlation in the financial and investment industries is a statistical indicator of how often the two stocks are moving in relation to each other. Correlations are used as a correlation coefficient for advanced portfolio management which has a value between +1.0 and +1.0.

The correlation indicates the strength of an interaction between two variables and the correlation coefficient is numerically expressed. The values range from -1.0 to 1.0 of the correlation coefficients. A perfect positive correlation means that the coefficient of correlation is exactly 1. This ensures that when one stock is going up or down, the other security is moving in the same way. A completely negative correlation implies that two assets move in opposite directions, while a zero correlation does not indicate a linear relation.

4. Practical Part

4.1. Description of Apple Inc.

Apple Inc. is one of the biggest American multinational technology company. It was found April 1st, 1976 by Steve Jobs, Steve Wozniak and Ronald Wayne. Apple Inc. is a

leader in their field. Their products available almost everywhere in the world. Since August 2018 market capitalization of Apple Inc. has reached 1 trillion dollars. After July 31st, Apple passed the state oil giant Saudi Aramco to become the world's most valuable publicly traded company.

4.1.1. Product Portfolio

Even Apple Inc. started their product portfolio with Apple computer 1 back in April 1976. Within first 5 years Apple Inc. operation revenue grow up exponentially and doubling almost every month.

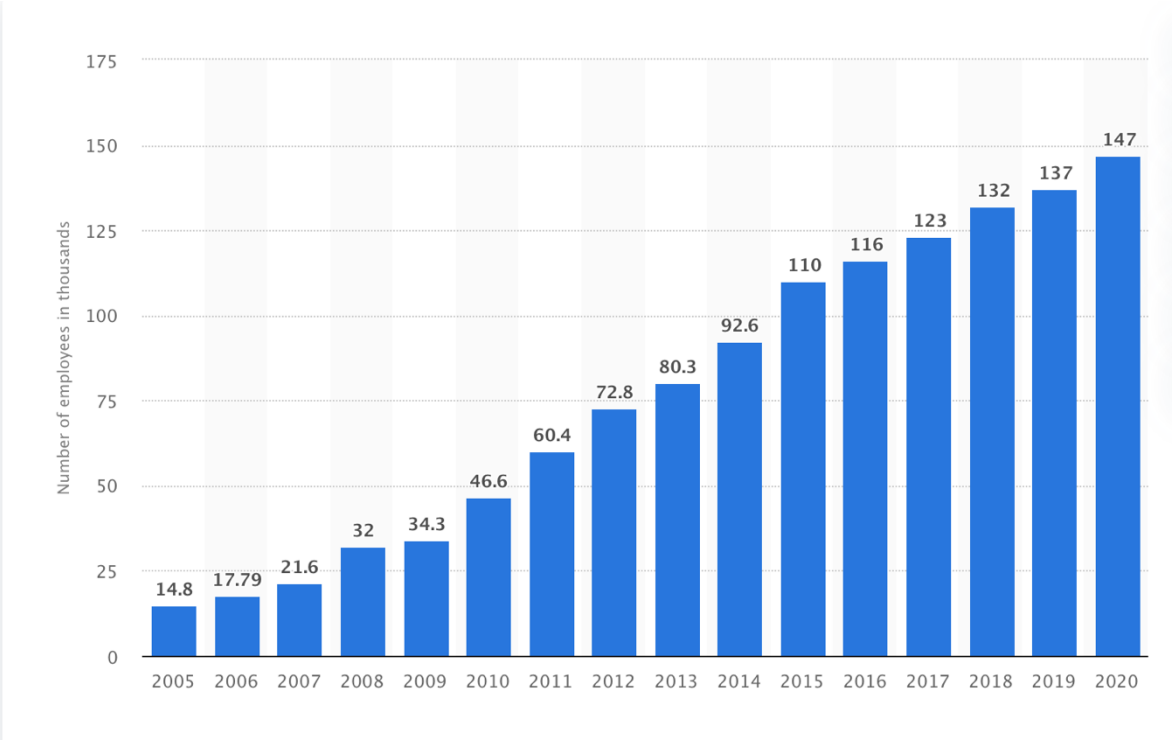
Nowadays Apple Inc. has a wide verity of products. The most well-known products are:

- iPhone
- iPad
- MacBook
- iMac
- Apple Watch
- Apple TV
- iPod Touch
- Air Pods

4.1.2. Employees

Apple Inc. had started only with three employees back in April 1976. Those employees were Steve Jobs, Steve Wozniak and Ronald Wayne. From the Finger 1 it can be clearly stated that Apple Inc. has a growing trend on their employees. Every year Apple Inc. has more and more workers. There was no year where their number of employees dropped. Nowadays Apple Inc. has over 147 000 employees.

Figure 1: Apple Inc. employee number 2005-2020



Source:*(STATISTA.com, 2020)*

4.1.3. Financial Information

Apple Inc., along with Amazon, Google, Microsoft, and Facebook, is considered one of the Top Five firms in the U.S. information technology industry. Apple is the world's largest revenue-driven information technology company, the world's largest technology company by total assets, and the world's second-largest manufacturer of mobile phones after Samsung.

In its fiscal year ending in September 2011, Apple Inc. reported a total annual revenue of $108 billion—a significant increase from its 2010 revenue of $65 billion—and almost $82 billion in cash reserves. On March 19, 2012, Apple announced plans for a $2.65-per-share dividend starting in the fourth quarter of 2012, with the approval of its Board of Directors.

The company's global annual revenue in 2013 increased to $170 billion. In May2013, Apple entered the top ten of the Fortune 500 list of companies for the first time, rising 11 places above its 2012 ranking to take sixth place. As of2016, Apple has around US$234

billion in cash and marketable securities, of which 90 percent is located outside the United States for tax purposes.

On April 30, 2017, The Wall Street Journal reported that Apple had $250 billion in cash reserves, officially confirmed by Apple as specifically $256.8 billion a few days later.

As of 3 August 2018, Apple was the largest publicly traded company in the world through market capitalization. On August 2, 2018, Apple became the first U.S. publicly traded company to reach a market value of $1 trillion. Apple ranked No. 4 in the 2018 Fortune 500 ranking of the largest U.S. corporations by total revenue.

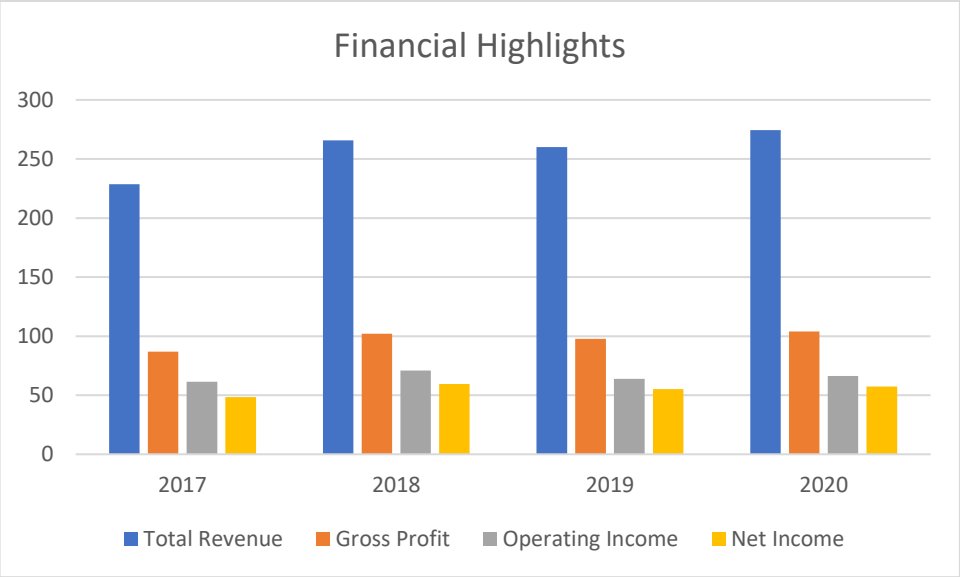
Table 1: Financial Highlights (in millions)

	2017	2018	2019	2020
Total Revenue	228,575	265,809	259,998	274,510
Gross Profit	86,870	101,983	97,704	104,007
Operating Income	61,344	70,898	63,930	66,288
Net Income	48,351	59,531	55,256	57,411

Source: *(finance.yahoo.com, 2020)*

Apple Inc. financial results remain very positive. For the fiscal year 2020, total revenues amounted to more than $ 274,510 (in millions). Taking into consideration that year 2020 was hard for all corporation due to coronavirus, Apple Inc managed to boost their total revenue by 5,58% comparison to previous year.

Figure 2: Apple Inc. Total Revenue 2017-2020



Source: *Own calculation, data from annual report 2017-2020*

4.1.4. What does it mean for investors?

It indicates that Apple Inc. is safe for creditors to stay and invest. The business is strong enough and has a track record that is reliable enough to be able to rebound from its current problems. With that being said, Apple Inc. is still good purchase for investors. Investors should keep this on their watch lists. Apple Inc. will most likely continue to grow for the moment.

4.2. Financial Analysis of Apple Inc.

4.2.1. Balance Sheet

4.2.1.1. Assets

Table 2: Financial Performance of Apple Inc.

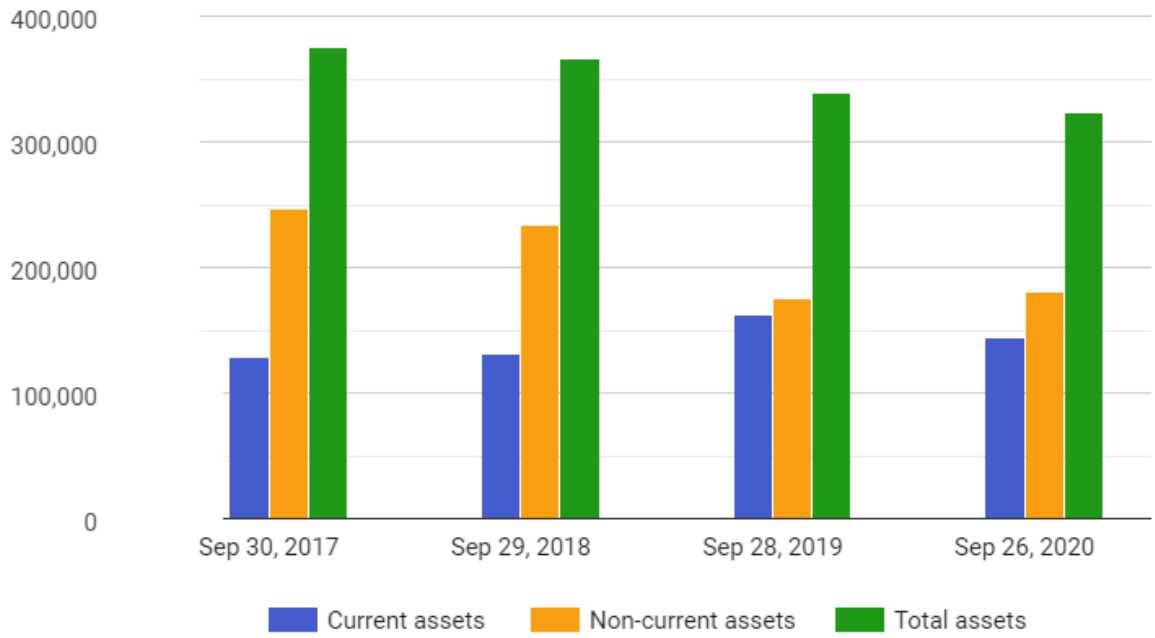
US$ in millions

	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Cash and cash equivalents	38 016	48 844	25 913	20 289
Current marketable securities	52 927	51 713	40 388	53 892
Accounts receivable, net	16 120	22 926	23 186	17 874
Inventories	4 061	4 106	3 956	4 855
Vendor non-trade receivables	21 325	22 878	25 809	17 799
Other current assets	11 264	12 352	12 087	13 936
Current assets	**143 713**	**162 819**	**131 339**	**128 645**
Non-current marketable securities	100 887	105 341	170 799	194 714
Property, plant and equipment, net	36 766	37 378	41 304	33 783
Other non-current assets	42 522	32 978	22 283	18 177
Non-current assets	**180 175**	**175 697**	**234 386**	**246 674**
Total assets	**323 888**	**338 516**	**365 725**	**375 319**

Source: *(https://www.stock-analysis-on.net, 2020)*

Current assets are the carrying amounts of all assets that are estimated to be made in cash, sold or consumed by a balance sheet date in a year's time (or in the normal duration if longer). Assets acquired or owned by an individual as a consequence of previous transactions or events are likely to have potential economic benefits. Apple Inc. current assets have been increasing since year 2017 and there can be seen a drop-in year 2020 due to world pandemic.

Figure 3: Financial performance of Apple Inc. 2017-2020



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

Non-current assets are the sums of all estimated assets paid out in cash, sold or used after one year or after the normal business cycle. Apple Inc. noncurrent level significantly dropped from 2017-2019 and slightly gained in year 2020

Total assets, most often used in the context of a company, are characterized as assets of an organization with a potential profit value. However, total assets of Apple Inc. is decreased over past few year, Apple Inc. still can cover their total debts.

4.2.1.2. Equity and Liabilities

Table 3: Equity and Liabilities of Apple Inc

US$ in millions

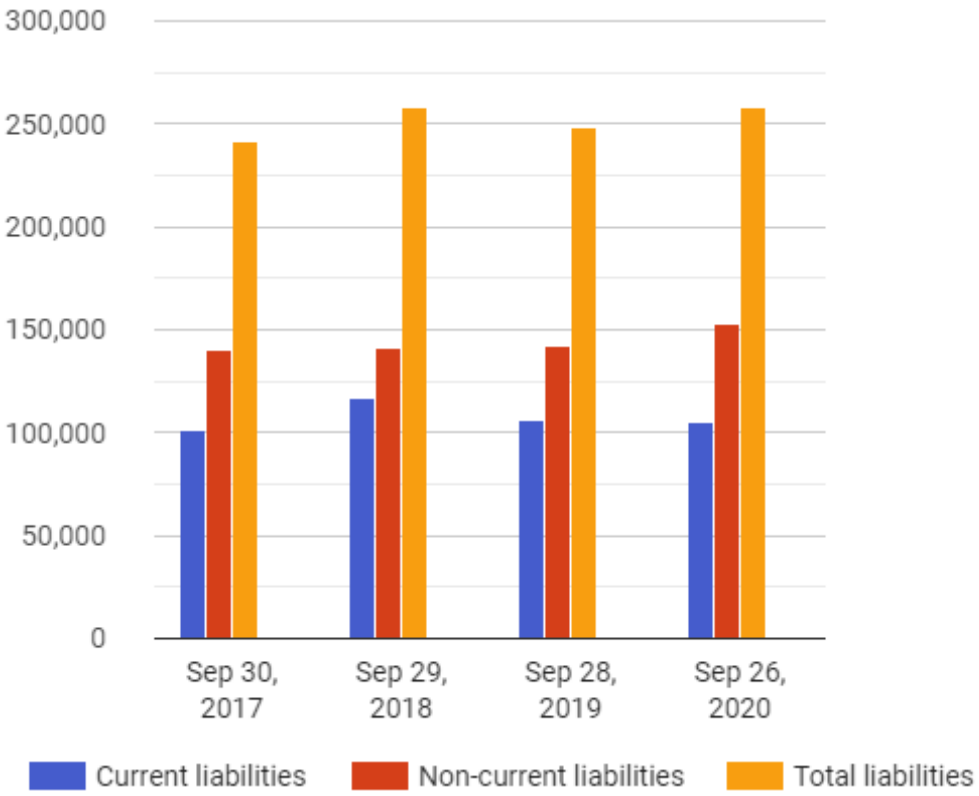
	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Accounts payable	42 296	46 236	55 888	49 049
Other current liabilities	42 684	37 720	32 687	25 744
Deferred revenue	6 643	5 522	7 543	7 548
Commercial paper	4 996	5 980	11 964	11 977
Current portion of term debt	8 773	10 260	8 784	6 496
Current liabilities	**105 392**	**105 718**	**116 866**	**100 814**
Non-current portion of term debt	98 667	91 807	93 735	97 207
Long-term taxes payable	28 170	29 545	33 589	257
Other non-current liabilities	26 320	20 958	14 388	42 994
Other non-current liabilities	**54 490**	**50 503**	**47 977**	**43 251**
Non-current liabilities	**153 157**	**142 310**	**141 712**	**140 458**
Total liabilities	**258 549**	**248 028**	**258 578**	**241 272**
Common stock and additional paid-in capital, $0.00001 par value	50 779	45 174	40 201	35 867
Retained earnings	14 966	45 898	70 400	98 330
Accumulated other comprehensive income (loss)	(406)	(584)	(3 454)	(150)
Shareholders' equity	**65 339**	**90 488**	**107 147**	**134 047**
Total liabilities and shareholders' equity	**323 888**	**338 516**	**365 725**	**375 319**

Source: *(https://www.stock-analysis-on.net, 2020)*

Current liabilities are short-term financial liabilities of an organization due in the duration of one year or a typical operating period. An operating cycle, also called the cash conversion cycle, is the time it takes for a company to buy inventory and turn it from sales into cash. One example is the cash owed to suppliers in the form of accounts payable. Overall, within past few years, Apple Inc. current liabilities have slightly increased.

Noncurrent liabilities, as an opposite to a current liabilities, don't have an obligation duration within one operation year. Noncurrent liabilities are long-term financial obligations listed on an organization balance sheet, which are often called long-term liabilities or long-term debts.

Figure 4: Financial performance of Apple Inc. 2017-2020



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

Total liabilities are the combination of company's debts and obligations that a company owned to the outside parties. Everything owned by the organization is listed as an asset, and any amount owed by the company for future obligations is listed as liabilities. Since 2018 Apple Inc. total liability dropped in year 2019 and got back to what it was in year 2020.

4.3. Income statement

The Income Statement is one of the main financial statements of a business that demonstrate its profit and loss for a period of time. To calculate profit or loss is needed to take all revenue and subtract all expenses from operating and non-operating activities.

Table 4: Income Statement of Apple Inc

US$ in millions

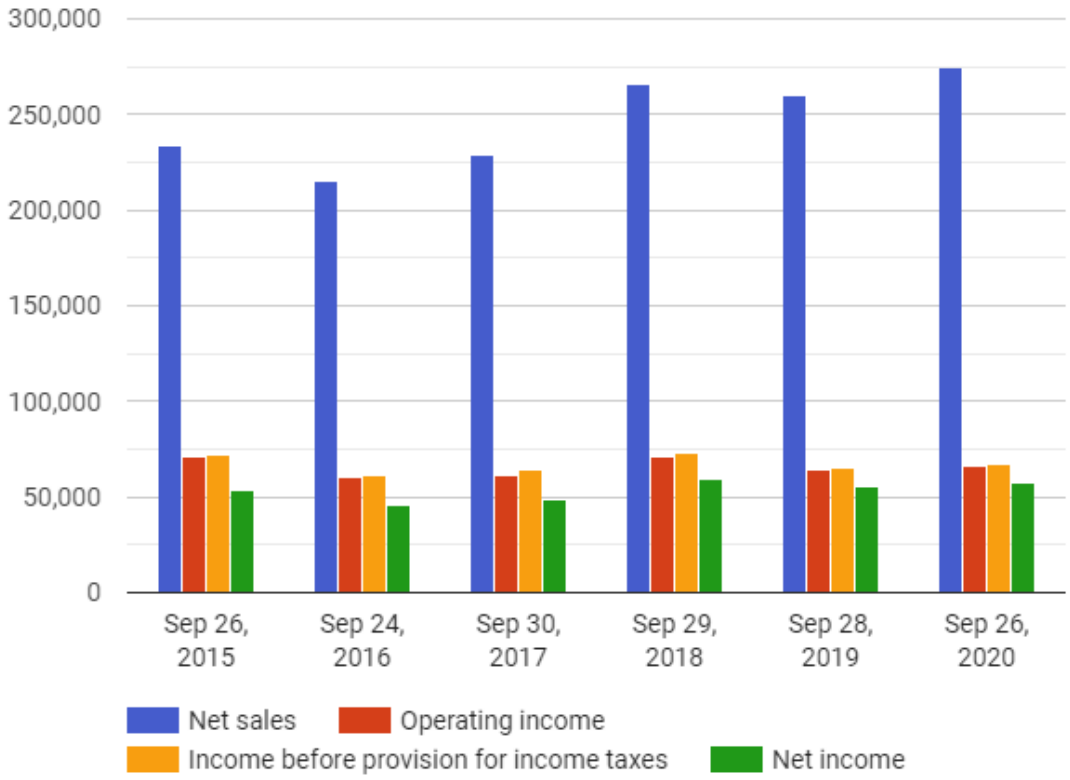
12 months ended:	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Products	220 747	213 883	225 847	196 534
Services	53 768	46 291	39 748	32 700
Net sales (legacy)	—	—	—	—
Net sales	**274 515**	**260 174**	**265 595**	**229 234**
Products	(151 286)	(144 996)	(148 164)	(126 337)
Services	(18 273)	(16 786)	(15 592)	(14 711)
Cost of sales (legacy)	—	—	—	—
Cost of sales	**(169 559)**	**(161 782)**	**(163 756)**	**(141 048)**
Gross margin	**104 956**	**98 392**	**101 839**	**88 186**
Research and development	(18 752)	(16 217)	(14 236)	(11 581)
Selling, general and administrative	(19 916)	(18 245)	(16 705)	(15 261)
Operating expenses	**(38 668)**	**(34 462)**	**(30 941)**	**(26 842)**
Operating income	**66 288**	**63 930**	**70 898**	**61 344**
Interest and dividend income	3 763	4 961	5 686	5 201
Interest expense	(2 873)	(3 576)	(3 240)	(2 323)
Other income (expense), net	(87)	422	(441)	(133)
Other income (expense), net	**803**	**1 807**	**2 005**	**2 745**
Income before provision for income taxes	**67 091**	**65 737**	**72 903**	**64 089**
Provision for income taxes	(9 680)	(10 481)	(13 372)	(15 738)
Net income	**57 411**	**55 256**	**59 531**	**48 351**

Source: *(https://www.stock-analysis-on.net, 2020)*

Net sales represent the sum of gross sales of an organization minus their earnings, allowances and discounts. Calculations of net sales are not necessarily externally transparent. They should also be taken into account in the reporting of the highest income reports. Since 2017 net sales have significantly increased by 19,75%.

Operating income is an accounting figure which measures the profit from the operations of a company after deducting operational expenses such as salaries, depreciation and costs of goods sold (COGS).

Figure 5: Consolidated Income Statement of Apple Inc. 2017-2020



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

Income before provision for income taxes or also called earnings before income taxes (EBIT) is a profitability measure for an organization. Income minus expenses excluding taxes or interest can be measured as EBIT. Operating income, operating profit and profit before interest and tax are often called EBIT.

Net income is calculated as sales minus general and administrative expenses, cost of goods sold (COGS), operating expenses, selling, depreciation, interest, taxes, and other expenses. Since 2017 net sales have significantly increased by 18,73%.

4.3.1. Profitability

Profitability ratios are financial measures used by analysts and investors to assess and analyze a company's ability to produce revenue (profit) compared to revenue, balance sheet assets, operating costs, and shareholder equity. They illustrate how effectively a corporation uses its assets to create shareholder benefit and value.

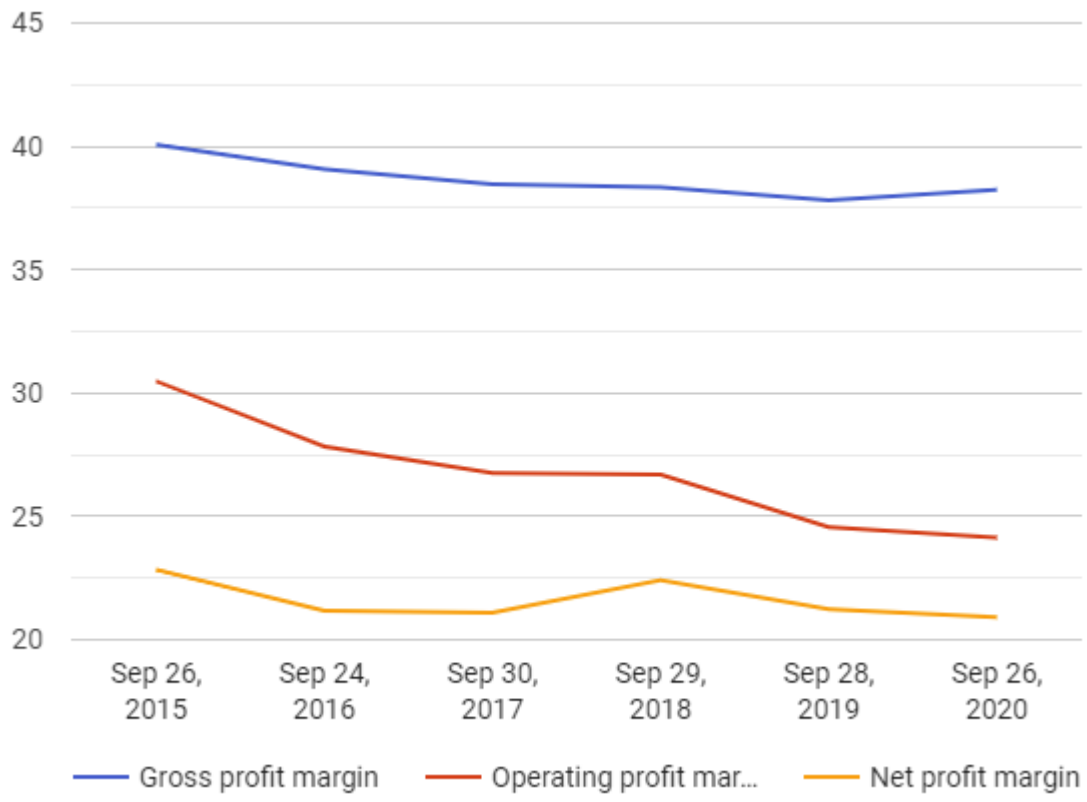
Table 5: Profitability overview

	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Return on Sales				
Gross profit margin	38.23%	37.82%	38.34%	38.47%
Operating profit margin	24.15%	24.57%	26.69%	26.76%
Net profit margin	20.91%	21.24%	22.41%	21.09%
Return on Investment				
Return on equity (ROE)	87.87%	61.06%	55.56%	36.07%
Return on assets (ROA)	17.73%	16.32%	16.28%	12.88%

Source: *(https://www.stock-analysis-on.net, 2020)*

Gross profit margin shows the percentage of sales available to cover operating expenses and other expenditures. Over the last four years gross profit margin of Apple Inc. stays in the same range of 38%. Due to the reason that Apple Inc. gross profit margin doesn't fluctuates, it means that the company has good management practice.

Figure 6: Apple Inc., profitability ratios

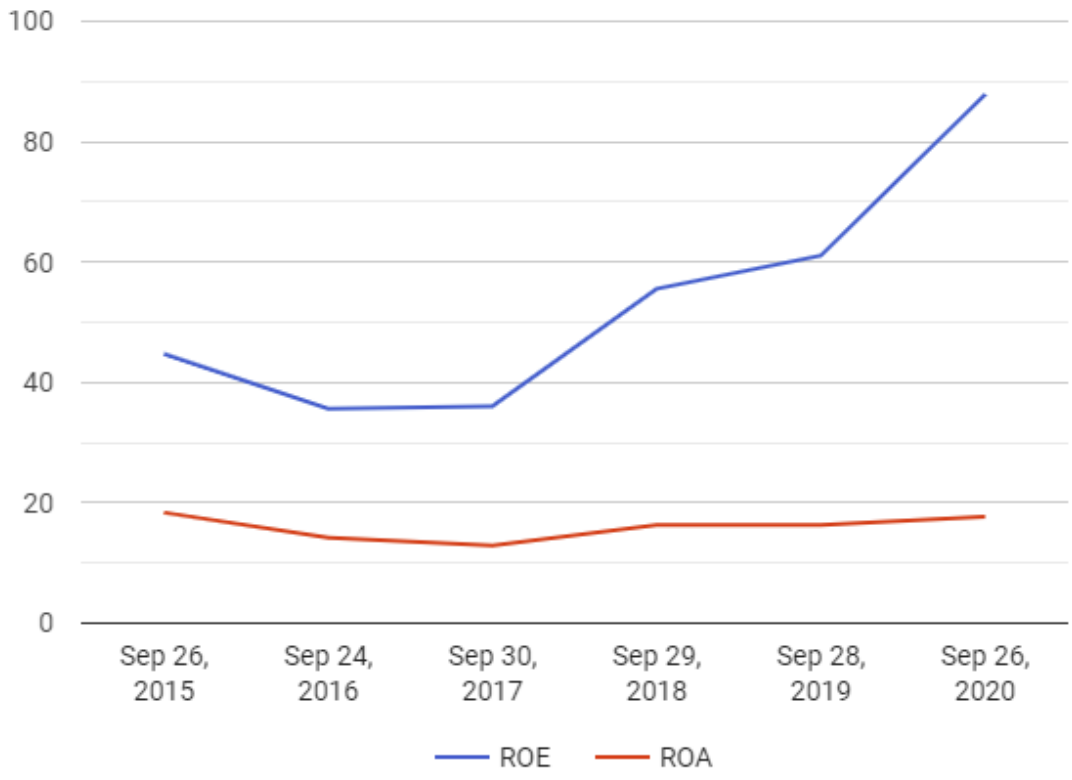


Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

Operating profit margin-sees profits as a percentage of sales before deducting interest costs and revenue taxes. In general, businesses with high operating profit margins are better positioned to pay for fixed costs and interest on obligations, are more likely to withstand an economic recession, and are more able to deliver lower rates than their lower profit-margin rivals. Since year 2017 Apple Inc.'s operating profit margin ratio decreased by 3,69%.

Net profit margin looks at the net profits of a company and divides it into overall sales. It offers the final image of how profitable a business is after all expenses have been taken into account, including interest and taxes. Since year 2017 Apple Inc.'s net profit margin ratio decreased by 0,18%.

Figure 7: Apple Inc., return on investment



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

Return on equity is a profitability ratio that shows the percentage of net income relative to stockholders' equity. Since year 2017 Apple Inc. ROE has been drastically

increasing. For shareholders ROE of 87.87% implies $0.87 returned on every $1 invested, so the higher the return, the better for investors.

Return on assets shows the amount of net earnings compared to the total assets of the company. In the last for years Apple Inc. increased ROA by almost 5%.

4.3.1.1. Gross Profit Margin

Table 6: Gross Profit Margin

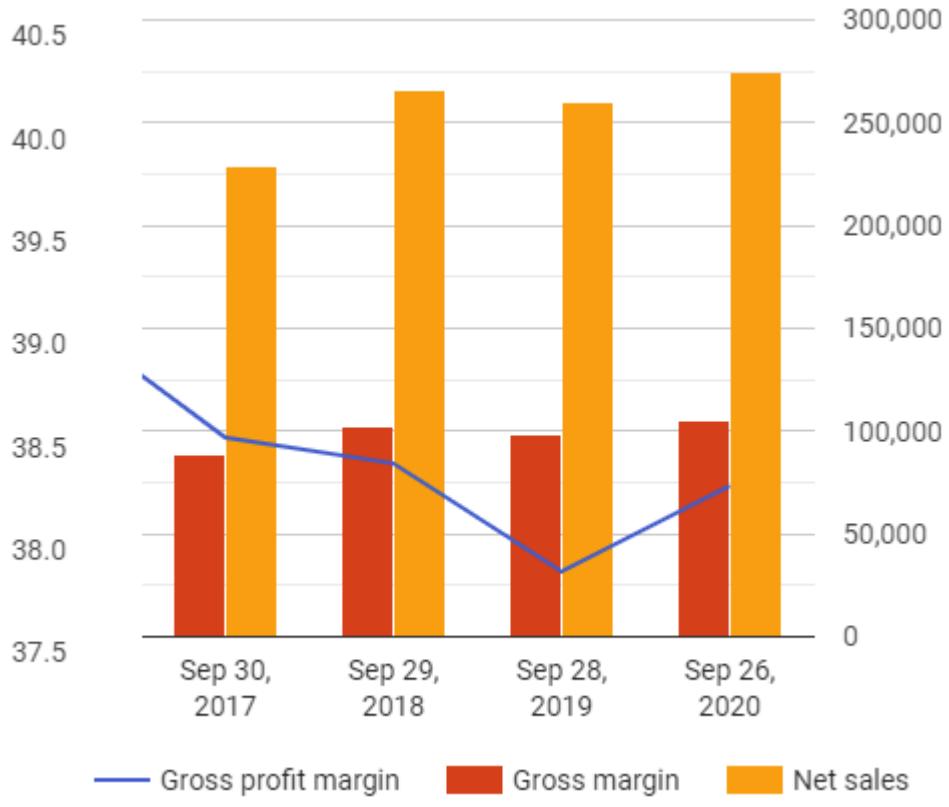
	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Gross margin	104 956	98 392	101 839	88 186
Net sales	274 515	260 174	265 595	229 234
Profitability Ratio				
Gross profit margin	**38.23%**	**37.82%**	**38.34%**	**38.47%**
Benchmarks				
Gross Profit Margin, Competitors				***Source:***
Cisco Systems Inc.	64.26%	62.94%	62.04%	62.96%
Intel Corp.	56.01%	58.56%	61.73%	62.25%
Micron Technology Inc.	30.57%	45.72%	58.87%	41.51%
NVIDIA Corp.	61.99%	61.21%	59.93%	58.80%

(https://www.stock-analysis-on.net, 2020)

Gross profit margin shows the percentage of sales available to cover operating expenses and other expenditures. Over the last four years gross profit margin of Apple Inc. stays in the same range of 38%. Due to the reason that Apple Inc. gross profit margin doesn't fluctuates, it means that the company has good management practice.

Gross profit margin = 100 × 104,956 ÷ 274,515 = 38.23%

Figure 8: Apple Inc., Gross Profit Margin



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

4.3.1.2. Operating Profit Margin

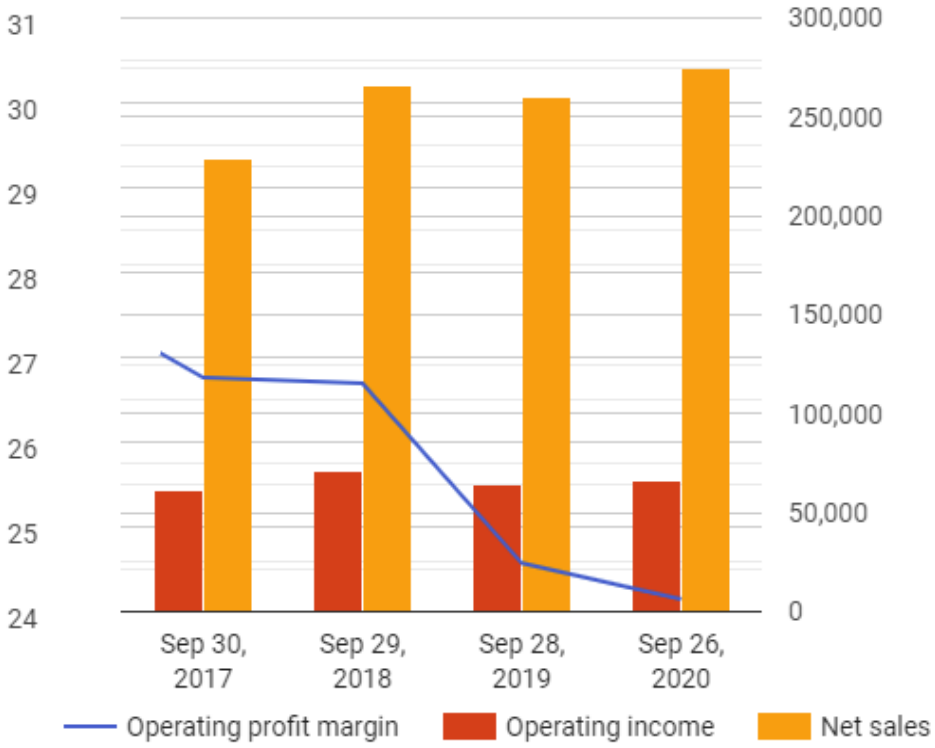
Table 7: Operating Profit Margin

	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Operating income	66 288	63 930	70 898	61 344
Net sales	274 515	260 174	265 595	229 234
Profitability Ratio				
Operating profit margin	**24.15%**	**24.57%**	**26.69%**	**26.76%**
Benchmarks				
Operating Profit Margin, Competitors				
Cisco Systems Inc.	27.63%	27.39%	24.95%	24.94%
Intel Corp.	30.41%	30.62%	32.91%	28.58%
Micron Technology Inc.	14.01%	31.51%	49.34%	28.88%
NVIDIA Corp.	26.07%	32.47%	33.05%	27.99%

Source: *(https://www.stock-analysis-on.net, 2020)*

Operating profit margin = 100 × 66,288 ÷ 274,515 = 24.15%

Figure 9: Apple Inc., Operating Profit Margin



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

Since year 2017 Apple Inc.'s operating profit margin ratio decreased from 2018 to 2019 and from 2019 to 2020 by 3,69%.

4.3.1.3. Net Profit Margin

Table 8: Net Profit Margin

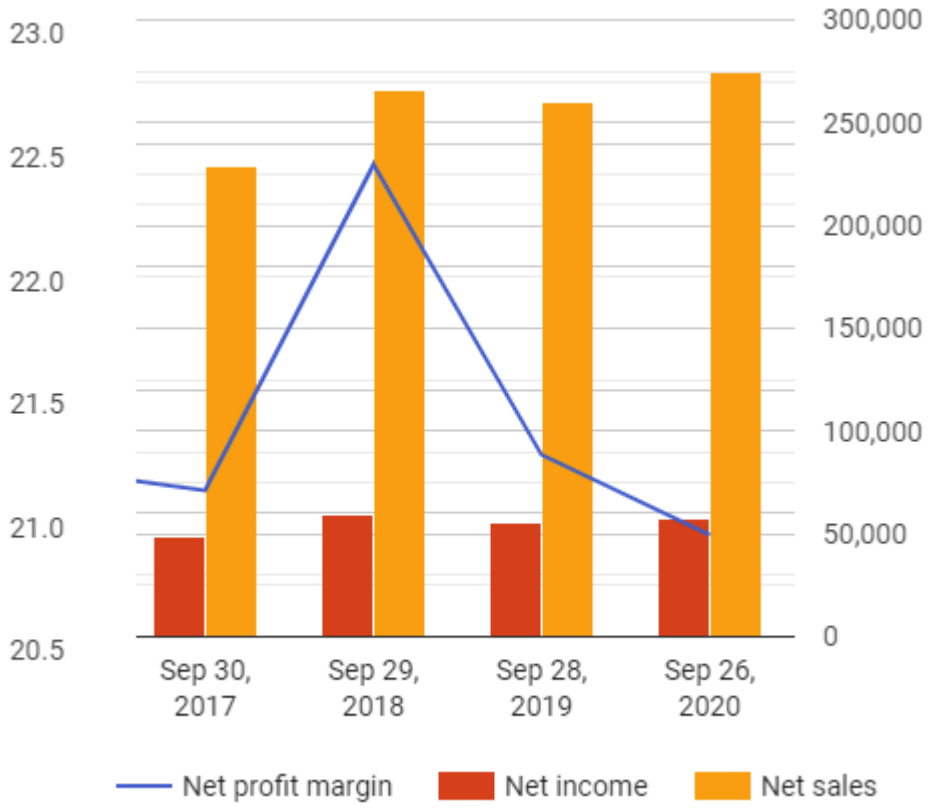
	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Net income	57 411	55 256	59 531	48 351
Net sales	274 515	260 174	265 595	229 234
Profitability Ratio				
Net profit margin	**20.91%**	**21.24%**	**22.41%**	**21.09%**
Benchmarks				
Net Profit Margin, Competitors				
Cisco Systems Inc.	22.75%	22.39%	0.22%	20.02%
Intel Corp.	26.84%	29.25%	29.72%	15.30%
Micron Technology Inc.	12.54%	26.97%	46.51%	25.04%
NVIDIA Corp.	25.61%	35.34%	31.37%	24.11%

Source: *(https://www.stock-analysis-on.net, 2020)*

Net profit margin = 100 × 57,411 ÷ 274,515 = 20.91%

Net profit margin looks at the net profits of a company and divides it into overall sales. It offers the final image of how profitable a business is after all expenses have been taken into account, including interest and taxes. Since year 2017 Apple Inc.'s net profit margin ratio decreased by 0,18%.

Figure 10: Net Profit Margin



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

4.3.1.4. Return on Equity

Table 9: Return on Equity

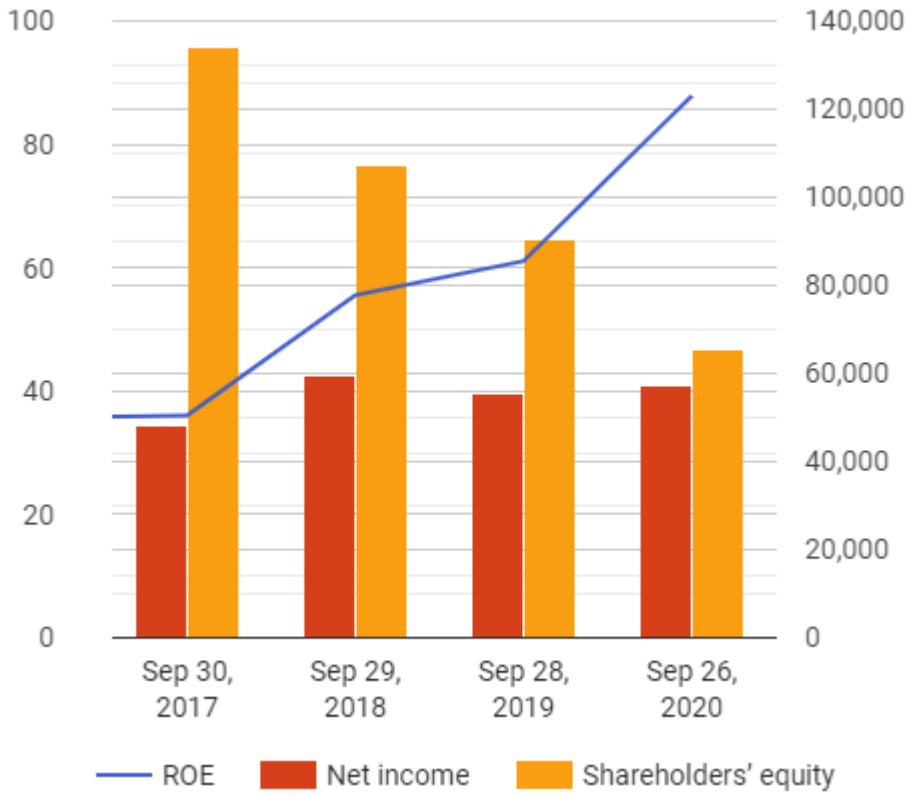
	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Net income	57 411	55 256	59 531	48 351
Shareholders' equity	65 339	90 488	107 147	134 047
Profitability Ratio				
ROE	**87.87%**	**61.06%**	**55.56%**	**36.07%**
Benchmarks				
ROE, Competitors				
Cisco Systems Inc.	29.57%	34.62%	0.25%	14.53%
Intel Corp.	25.79%	27.16%	28.24%	13.91%
Micron Technology Inc.	6.89%	17.59%	43.77%	27.33%
NVIDIA Corp.	22.91%	44.33%	40.78%	28.91%

Source: *(https://www.stock-analysis-on.net, 2020)*

ROE = 100 × 57,411 ÷ 65,339 = 87.87%

Return on equity is a profitability ratio that shows the percentage of net income relative to stockholders' equity. Since year 2017 Apple Inc. ROE has been drastically increasing. For shareholders ROE of 87.87% implies $0.87 returned on every $1 invested, so the higher the return, the better for investors.

Figure 11: Return on Equity



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

4.3.1.5. Return on Assets

Table 10: Return on Assets

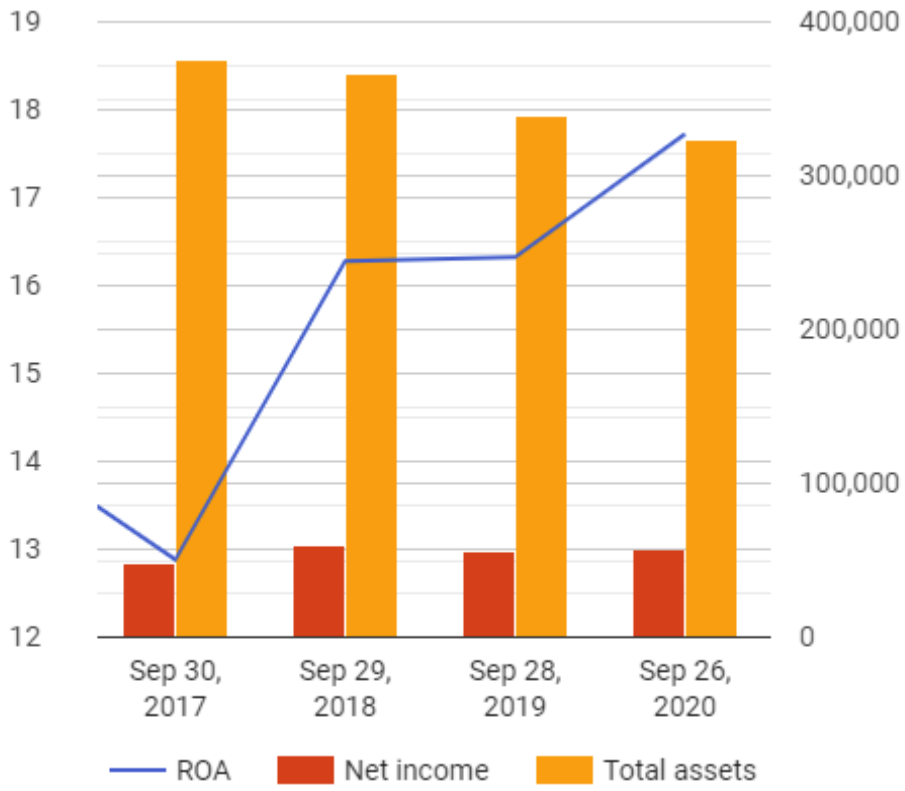
	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Net income	57 411	55 256	59 531	48 351
Total assets	323 888	338 516	365 725	375 319
Profitability Ratio				
ROA	**17.73%**	**16.32%**	**16.28%**	**12.88%**
Benchmarks				
ROA, Competitors				
Cisco Systems Inc.	11.82%	11.88%	0.10%	7.40%
Intel Corp.	13.65%	15.42%	16.45%	7.79%
Micron Technology Inc.	5.01%	12.91%	32.59%	14.40%
NVIDIA Corp.	16.15%	31.15%	27.11%	16.93%

Source: *(https://www.stock-analysis-on.net, 2020)*

ROA = 100 × 57,411 ÷ 323,888 = 17.73%

Return on assets shows the amount of net earnings compared to the total assets of the company. In the last for years Apple Inc. increased ROA by almost 5%.

Figure 12: Return on Assets



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

4.3.2. Liquidity

A liquidity ratio is a one of a financial ratios that is used to evaluate the capability of a business to pay its short-term debt obligations. The metric helps to assess whether a business has a possibility to use its current or liquid assets in order to cover its current liabilities.

Table 11: Liquidity Ratio

	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Current ratio	1.36	1.54	1.12	1.28
Quick ratio	1.22	1.38	0.99	1.09
Cash ratio	0.86	0.95	0.57	0.74

Source: *(https://www.stock-analysis-on.net, 2020)*

The higher the ratio, the more liquid the business is. Usually The socially acceptable current ratio is 2; for most companies, it is a comfortable financial situation. Appropriate current ratios differ between industries. 1.5 could be an acceptable option for most industrial companies. As it shown in the table above for the in the period from year 2017 to 2020 current ratio of Apple Inc. has been in the range from 1.26 at the lowest and 1.54 at the highest. It can be stated that Apple Inc. with their current assets can cover all current liabilities.

4.3.2.1. Current Ratio

Table 12: Current Ratio

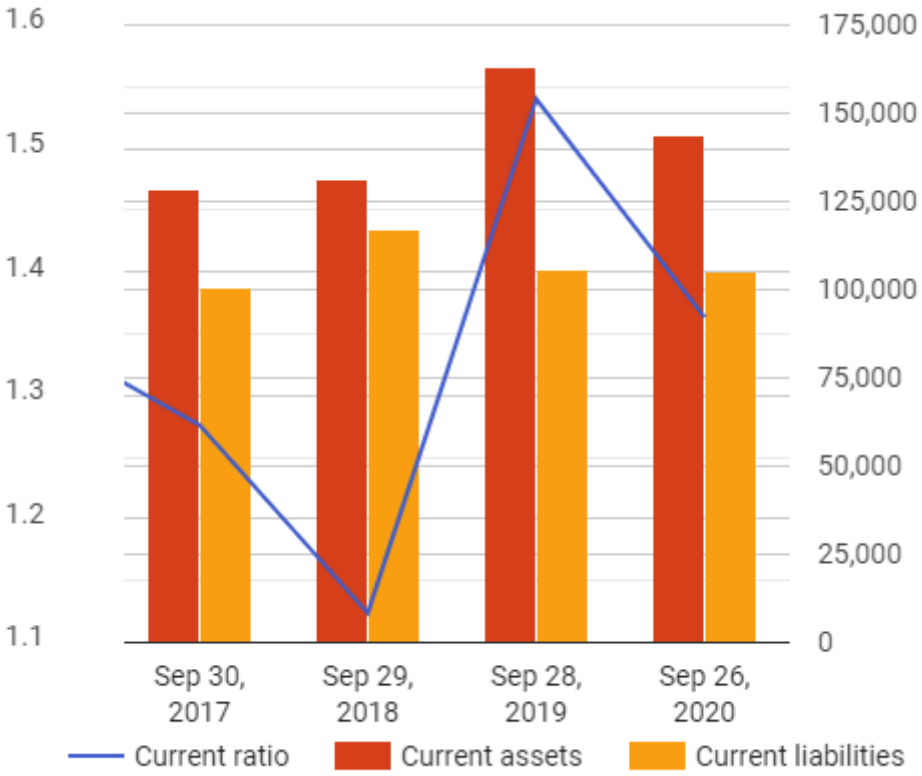
	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Current assets	143 713	162 819	131 339	128 645
Current liabilities	105 392	105 718	116 866	100 814
Liquidity Ratio				
Current ratio	**1.36**	**1.54**	**1.12**	**1.28**
Benchmarks				
Current Ratio, Competitors				
Cisco Systems Inc.	1.72	1.51	2.29	3.03
Intel Corp.	1.91	1.40	1.73	1.69
Micron Technology Inc.	2.71	2.58	2.79	2.34
NVIDIA Corp.	7.67	7.94	8.03	4.77

Source: *(https://www.stock-analysis-on.net, 2020)*

Current ratio (2020) = 143,713 ÷ 105,392 = 1.36

It can be stated that Apple Inc. with their current assets can cover all current liabilities

Figure 13: Current Ratio



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

4.3.2.2. Quick Ratio

Table 13: Quick Ratio

	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Cash and cash equivalents	38 016	48 844	25 913	20 289
Current marketable securities	52 927	51 713	40 388	53 892
Accounts receivable, net	16 120	22 926	23 186	17 874
Vendor non-trade receivables	21 325	22 878	25 809	17 799
Total quick assets	**128 388**	**146 361**	**115 296**	**109 854**
Current liabilities	105 392	105 718	116 866	100 814
Liquidity Ratio				
Quick ratio	**1.22**	**1.38**	**0.99**	**1.09**
Benchmarks				
Quick Ratio, Competitors				
Cisco Systems Inc.	1.58	1.39	2.11	2.92
Intel Corp.	1.24	0.93	1.11	1.13
Micron Technology Inc.	1.82	1.74	2.13	1.72
NVIDIA Corp.	7.04	6.66	7.26	4.26

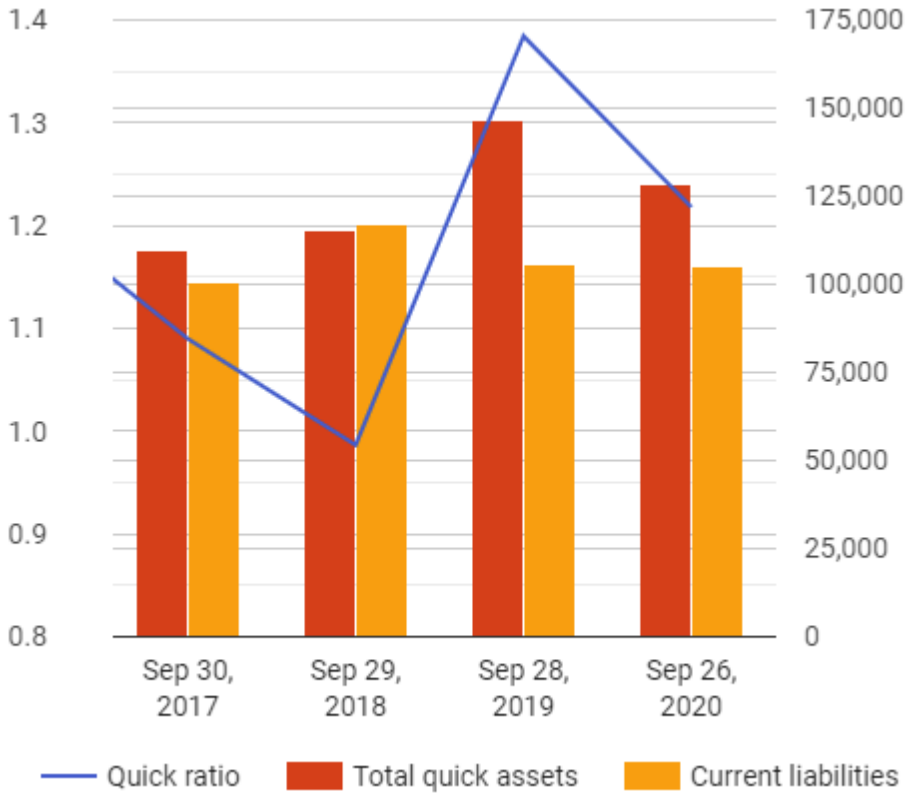
Source: *(https://www.stock-analysis-on.net, 2020)*

Quick ratio = 128,388 ÷ 105,392 = 1.22

The quick ratio is an indication of the short-term liquidity position of a company and measures the ability of a company with its most liquid assets to fulfill its short-term obligations. Since it shows the ability of the company's ability to pay assets (assets that can be easily converted to cash) immediately to pay down its current liabilities.

As it shown in the table above for the in the period from year 2017 to 2020 current ratio of Apple Inc. has been in the range from 0.99 at the lowest and 1.38 at the highest. It can be stated that Apple Inc. with their current assets can cover all current liabilities. Only in year 2018 Apple Inc. couldn't cover their current liabilities.

Figure 14: Quick Ratio



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

4.3.2.3. Cash Ratio

Table 14: Cash Ratio

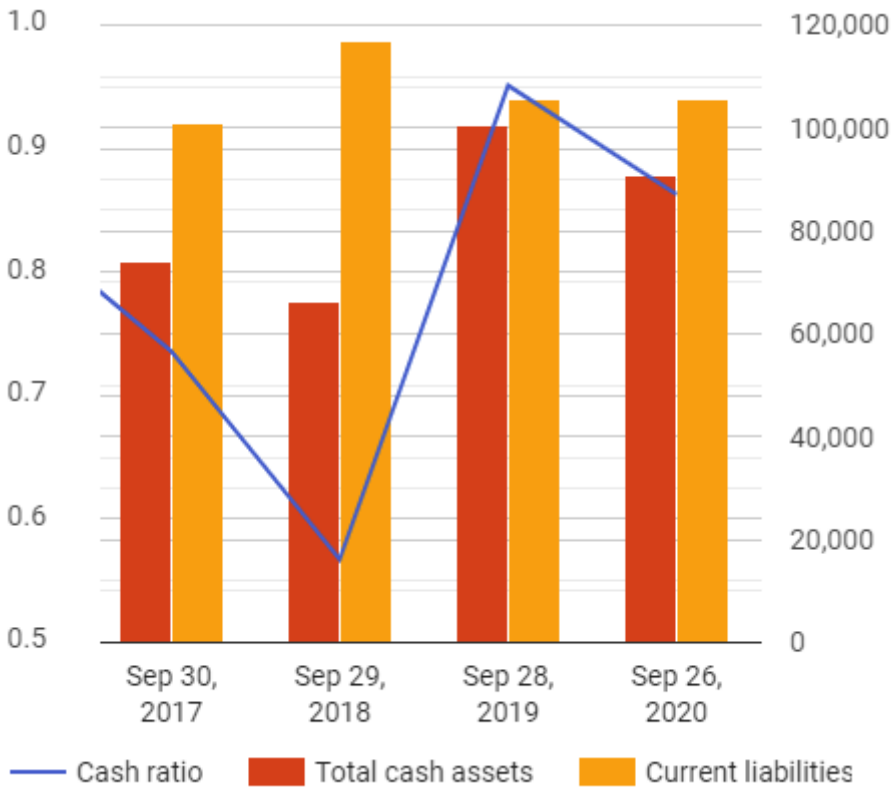
	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Cash and cash equivalents	38 016	48 844	25 913	20 289
Current marketable securities	52 927	51 713	40 388	53 892
Total cash assets	**90 943**	**100 557**	**66 301**	**74 181**
Current liabilities	105 392	105 718	116 866	100 814
Liquidity Ratio				
Cash ratio	**0.86**	**0.95**	**0.57**	**0.74**
Benchmarks				
Cash Ratio, Competitors				
Cisco Systems Inc.	1.16	1.05	1.72	2.56
Intel Corp.	0.97	0.59	0.70	0.80
Micron Technology Inc.	1.23	1.24	1.18	1.02
NVIDIA Corp.	6.11	5.58	6.16	3.80

Source: *(https://www.stock-analysis-on.net, 2020)*

Cash ratio = 90,943 ÷ 105,392 = 0.86

In financial analysis, the cash ratio is not as common as current or quick ratios, and its usage is limited. There is no common cash ratio standard. A cash ratio of no less than 0.2 is considered appropriate in certain countries. But too high cash ratio may indicate low use of assets for a company that keeps large amounts of cash on its balance sheet. As it can be seen in the table above Apple Inc. in the period from 2017 to 2019 hasn't had its Cash ratio less than 0.57.

Figure 14: Cash Ratio



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

4.3.3. Leverage Ratio

A leverage ratio is any of many accounting measures that evaluate how much capital comes in the form of debt (loans) or measure a company's ability to fulfill its financial obligations. The category of leverage ratio is essential because businesses rely on a mixture of equity and debt to fund their operations, and it is beneficial to know the amount of debt held by a company to determine whether it will pay off its debts when they are due. There are several different ratios that can be defined as a leverage ratio, but debt, equity, assets, and interest expenses are the key factors.

Table 15: Leverage Ratio

	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Debt Ratios				
Debt to equity	1.72	1.19	1.07	0.86
Debt to capital	0.63	0.54	0.52	0.46
Debt to assets	0.35	0.32	0.31	0.31
Financial leverage	4.96	3.74	3.41	2.80
Coverage Ratios				
Interest coverage	24.35	19.38	23.50	28.59
Fixed charge coverage	16.34	14.48	17.42	19.72

Source: *(https://www.stock-analysis-on.net, 2020)*

4.3.3.1. Debt to Equity

Table 16: Debt to Equity

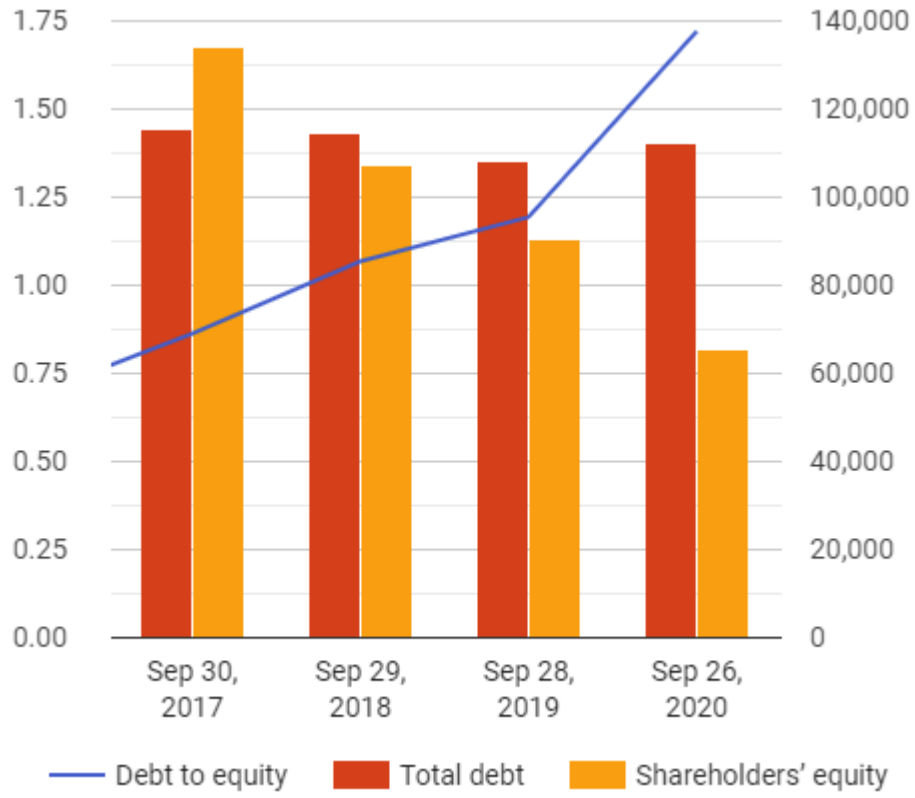
	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Commercial paper	4 996	5 980	11 964	11 977
Current portion of term debt	8 773	10 260	8 784	6 496
Non-current portion of term debt	98 667	91 807	93 735	97 207
Total debt	**112 436**	**108 047**	**114 483**	**115 680**
Shareholders' equity	65 339	90 488	107 147	134 047
Debt to equity	**1.72**	**1.19**	**1.07**	**0.86**
Benchmarks				
Debt to Equity, Competitors				
Cisco Systems Inc.	0.38	0.73	0.59	0.51
Intel Corp.	0.45	0.37	0.35	0.39
Micron Technology Inc.	0.17	0.16	0.14	0.60
NVIDIA Corp.	0.16	0.21	0.27	0.48

Source: *(https://www.stock-analysis-on.net, 2020)*

Debt to equity = 112,436 ÷ 65,339 = 1.72

The Debt to Equity ratio is a leverage ratio that measures the weight against the overall equity of the shareholders of the total debt and financial liabilities. This ratio illustrates how the financial structure of an organization is tilted towards either debt or equity funding. In the year 2017 Apple Inc. based on the debt to equity ratio didn't have any debt. Over the last four years it drastically increased to 1.72 which means that to every 1 dollar Apple Inc. has a debt in amount of 1.72 dollars.

Figure 15: Debt to equity



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

4.3.3.2. Debt to Capital

Table 17: Debt to Capital

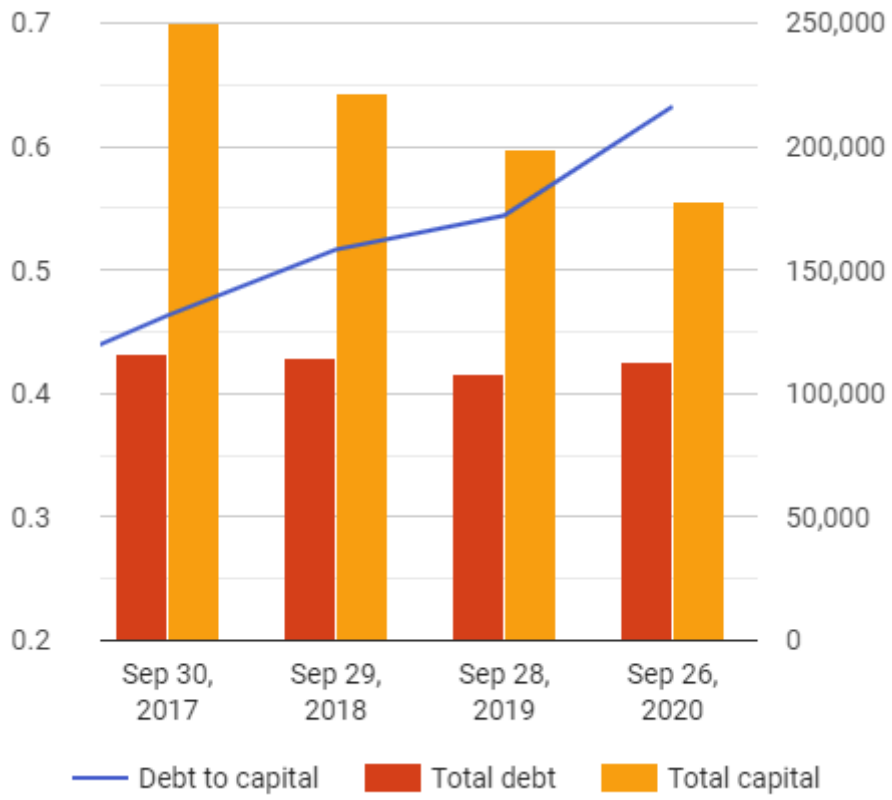
	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Commercial paper	4 996	5 980	11 964	11 977
Current portion of term debt	8 773	10 260	8 784	6 496
Non-current portion of term debt	98 667	91 807	93 735	97 207
Total debt	**112 436**	**108 047**	**114 483**	**115 680**
Shareholders' equity	65 339	90 488	107 147	134 047
Total capital	**177 775**	**198 535**	**221 630**	**249 727**
Debt to capital	**0.63**	**0.54**	**0.52**	**0.46**
Benchmarks				
Debt to Capital, Competitors				
Cisco Systems Inc.	0.28	0.42	0.37	0.34
Intel Corp.	0.31	0.27	0.26	0.28
Micron Technology Inc.	0.15	0.14	0.13	0.37
NVIDIA Corp.	0.14	0.18	0.21	0.33

Source: *(https://www.stock-analysis-on.net, 2020)*

Debt to capital = 112,436 ÷ 177,775 = 0.63

Analysts and investors have a greater idea about the financial structure of a company with a debt-to-capital ratio and whether a company is suitable for investment. The greater the debt-to-capital ratio, the riskier the organization is. All other variables are equal. And the higher the debt-funded the company, the greater is the liability of the debt and the probability that the debt will be paid in due time, the higher the debt-funded company. For the last for year debt to equity of Apple Inc. slightly increased from 0.46 to 0.63.

Figure 16: Debt to capital



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

4.3.3.3. Debt to Assets

Table 17: Debt to Asset

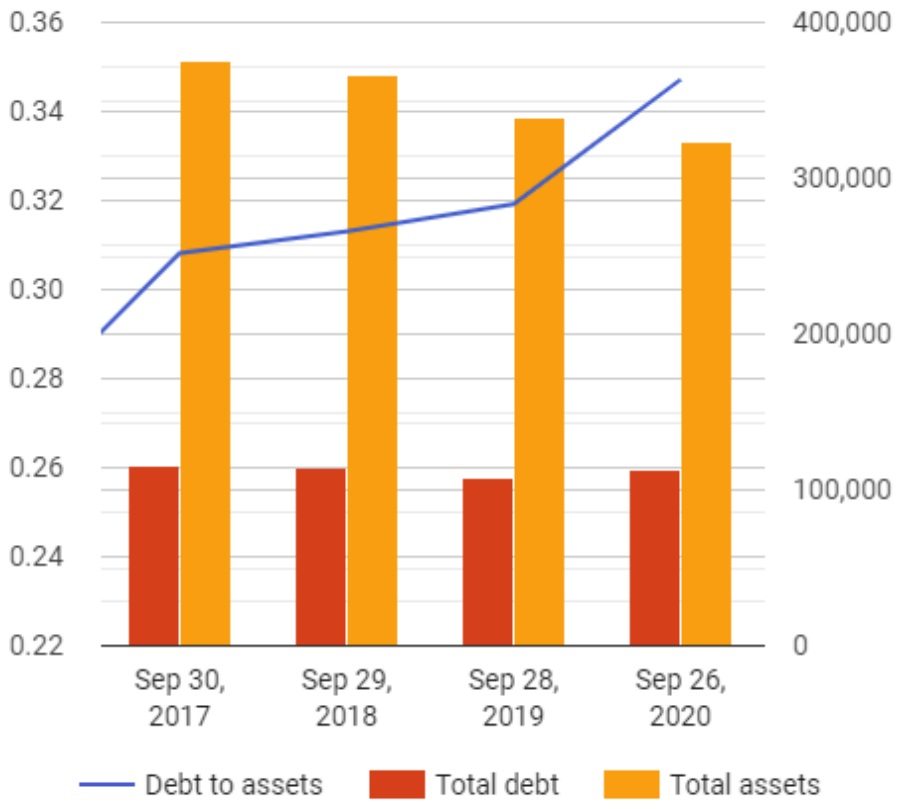
	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Commercial paper	4 996	5 980	11 964	11 977
Current portion of term debt	8 773	10 260	8 784	6 496
Non-current portion of term debt	98 667	91 807	93 735	97 207
Total debt	**112 436**	**108 047**	**114 483**	**115 680**
Total assets	323 888	338 516	365 725	375 319
Debt to assets	**0.35**	**0.32**	**0.31**	**0.31**
Benchmarks				
Cisco Systems Inc.	0.15	0.25	0.24	0.26
Intel Corp.	0.24	0.21	0.21	0.22
Micron Technology Inc.	0.12	0.12	0.11	0.32
NVIDIA Corp.	0.11	0.15	0.18	0.28

Source: *(https://www.stock-analysis-on.net, 2020)*

Debt to assets = 112,436 ÷ 323,888 = 0.35

The debt-to-asset ratio, also referred to the debt ratio, is the leverage ratio that shows the proportion of assets funded by debt. The higher the ratio, the more leverage and financial risk you will have. With the debt to asset ratio of 0.35 means that Apple Inc. company's assets are funded via debt.

Figure 17: Debt to assets



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

4.3.3.4. Interest Coverage Ratio

Table 18: Interest Coverage

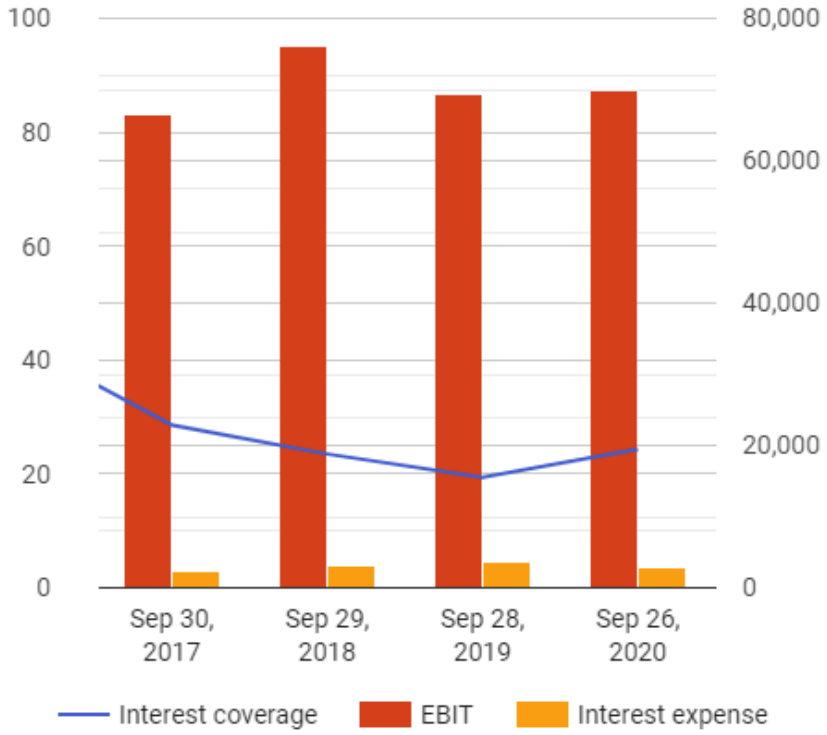
	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Net income	57 411	55 256	59 531	48 351
Add: Income tax expense	9 680	10 481	13 372	15 738
Add: Interest expense	2 873	3 576	3 240	2 323
Earnings before interest and tax (EBIT)	**69 964**	**69 313**	**76 143**	**66 412**
Interest coverage	**24.35**	**19.38**	**23.50**	**28.59**
Benchmarks				
Interest Coverage, Competitors				
Cisco Systems Inc.	24.88	17.96	14.83	15.27
Intel Corp.	40.87	50.20	50.82	32.50
Micron Technology Inc.	16.41	56.09	42.83	9.66
NVIDIA Corp.	58.12	68.17	53.39	33.84

Source: *(https://www.stock-analysis-on.net, 2020)*

Interest coverage = 69,964 ÷ 2,873 = 24.35

The Interest Coverage Ratio (ICR) is a financial ratio used to calculate how well the interest on its outstanding debts can be paid by a company. The ICR is frequently used to assess the risk of lending capital to a business by lenders, creditors, and investors. The ratio of interest coverage is also called the ratio of "times interest earned". With interest coverage ratio equals to 24.35 means that Apple Inc. can pay its interest payments 24.35 times with their operating profit.

Figure 17: Interest coverage ratio



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

4.3.4. Activity Ratio

Activity ratios are financial metrics used to gauge how effective the activities of an organization are. The term can include multiple ratios that can be applied to how effectively a business uses its resources or assets. Activity ratios are helpful in comparing how the performance of a company trends over time in a horizontal analysis or how the performance of a company performs in comparable company analysis against its competitors. They are often referred to as ratios of turnover or operating efficiency ratios.

Table 19: Activity ratio

	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Turnover Ratios				
Inventory turnover	41.75	39.40	41.39	29.05
Receivables turnover	17.03	11.35	11.45	12.82
Payables turnover	4.01	3.50	2.93	2.88

Source: *(https://www.stock-analysis-on.net, 2020)*

4.3.4.1. Inventory Turnover

Table 20: Inventory turnover

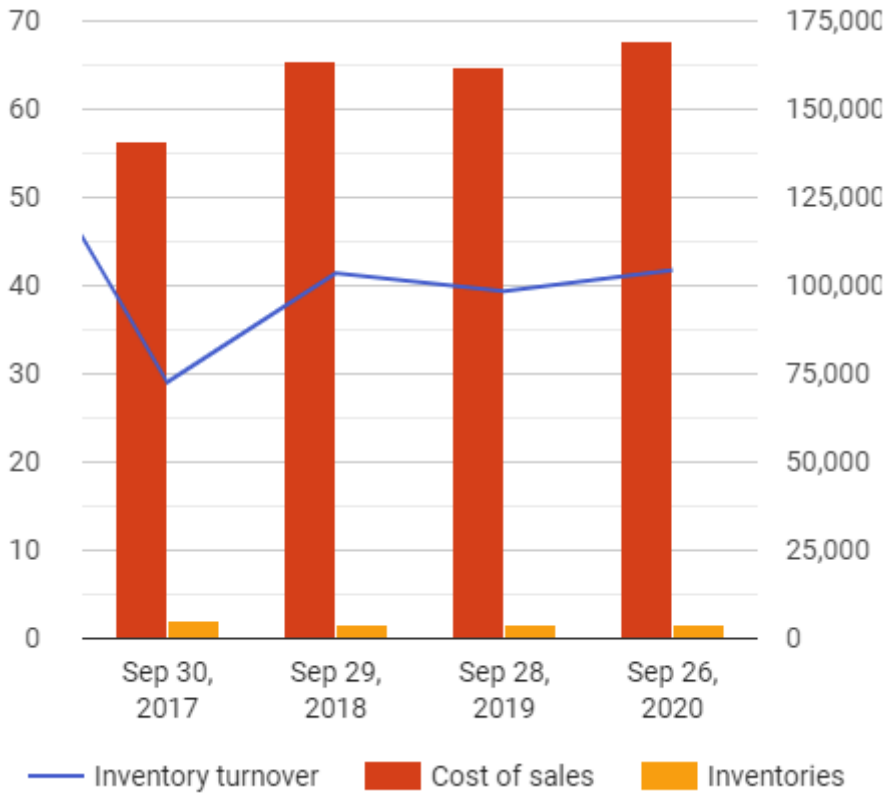
	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Cost of sales	169 559	161 782	163 756	141 048
Inventories	4 061	4 106	3 956	4 855
Inventory turnover	**41.75**	**39.40**	**41.39**	**29.05**
Benchmarks				
Inventory Turnover, Competitors				
Cisco Systems Inc.	13.74	13.91	10.14	11.00
Intel Corp.	4.06	3.41	3.74	3.39
Micron Technology Inc.	2.65	2.48	3.48	3.81
NVIDIA Corp.	4.24	2.89	4.89	3.59

Source: *(https://www.stock-analysis-on.net, 2020)*

Inventory turnover = 169,559 ÷ 4,061 = 41.75

Inventory turnover evaluates how easily a business can manage its inventory. A low ratio of inventory turnover is an indication that inventory moves too slowly and capital ties up. A business with a high inventory turnover ratio, on the other hand, can transfer inventory at a rapid pace; but if the inventory turnover is too high, it can lead to shortages and loss of sales. This tells that Apple Inc, depletes and replenishes its inventory 41 times per year to satisfy consumer demand for its products.

Figure 18: Inventory turnover



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

4.3.4.2. Receivables Turnover

Table 20: Receivable turnover

	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Net sales	274 515	260 174	265 595	229 234
Accounts receivable, net	16 120	22 926	23 186	17 874
Receivables turnover	**17.03**	**11.35**	**11.45**	**12.82**
Benchmarks				
Receivables Turnover, Competitors				
Cisco Systems Inc.	9.01	9.45	8.88	9.33
Intel Corp.	11.48	9.40	10.54	11.19
Micron Technology Inc.	6.13	8.43	6.01	5.82
NVIDIA Corp.	6.59	8.23	7.68	8.37

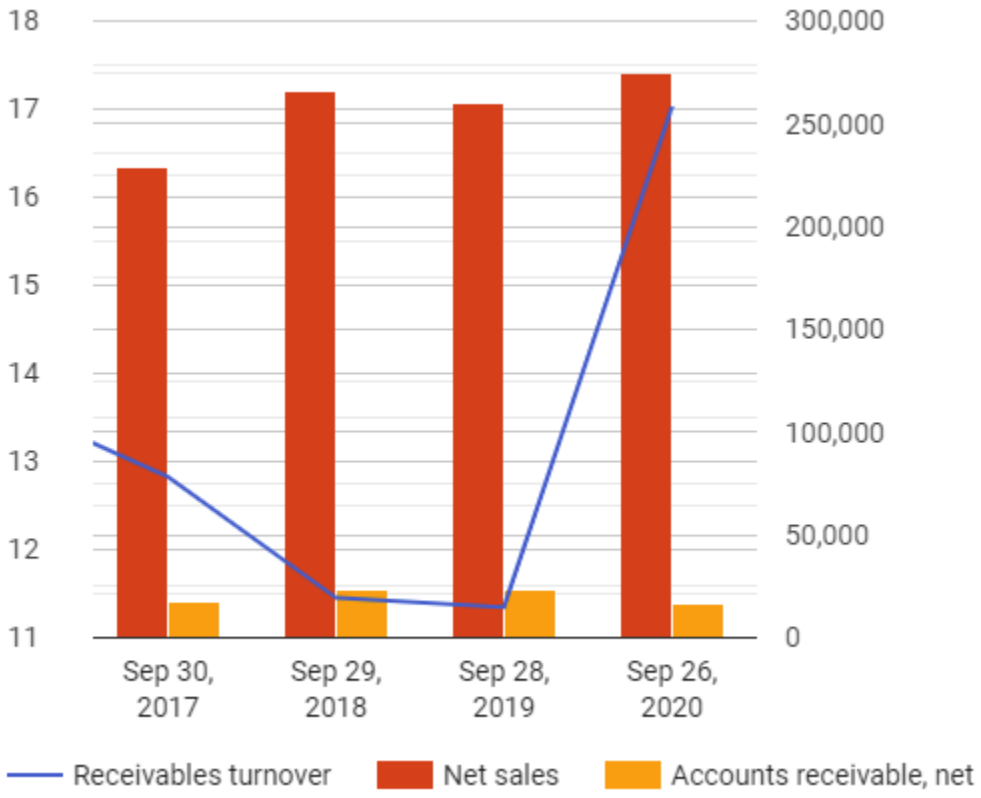
Source: *(https://www.stock-analysis-on.net, 2020)*

Receivables turnover = 274,515 ÷ 16,120 = 17.03

Receivable turnover calculates how well a business is able to manage its credit sales and transform its receivables into cash. A high receivables turnover means that a business can transform its receivables into cash very easily, while a low turnover of receivables indicates that a business is unable to convert its receivables as quickly as it can.

The ratio can be interpreted as meaning that Apple Inc. collected its receivables 17.03 times that year on average. This indicates that the company turned its receivables into cash 17.03 times a year. In comparison with past four years Apple Inc. increased their account receivables turnover from 18.82 to 17.03.

Figure 19: Receivable turnover



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

4.3.4.3. Payable Turnover

Table 21: Payable turnover

	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Cost of sales	169 559	161 782	163 756	141 048
Accounts payable	42 296	46 236	55 888	49 049
Payables turnover	**4.01**	**3.50**	**2.93**	**2.88**
Benchmarks				
Payables Turnover, Competitors				
Cisco Systems Inc.	7.94	9.34	9.83	12.84
Intel Corp.	6.14	7.23	7.09	8.09
Micron Technology Inc.	6.79	7.58	7.39	8.92
NVIDIA Corp.	6.04	8.89	6.53	5.87

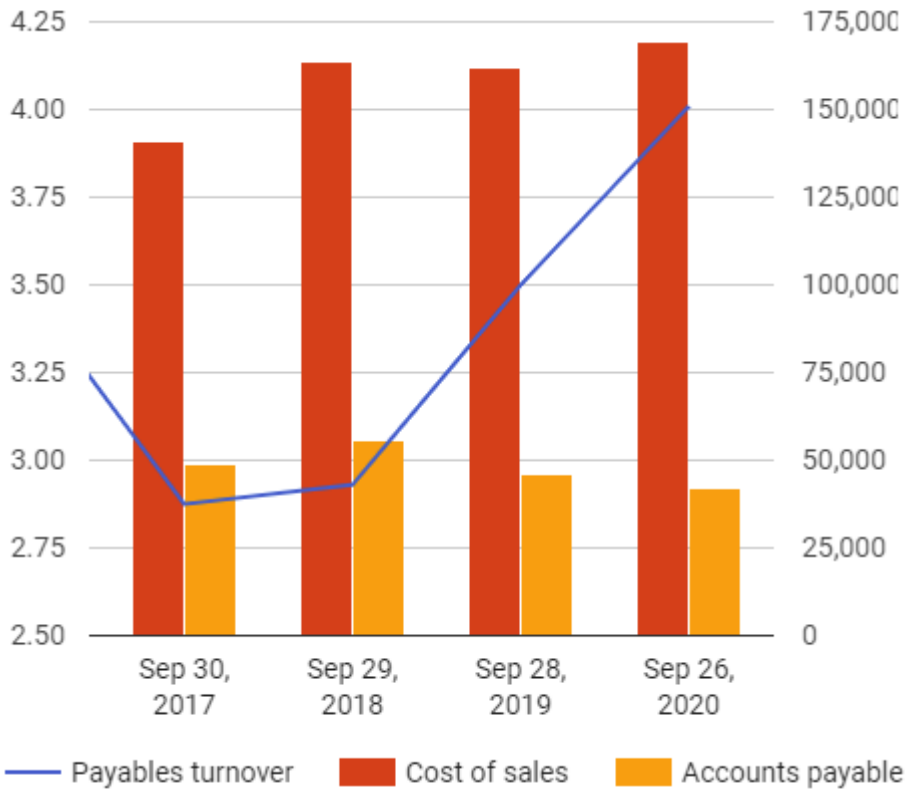
Source: *(https://www.stock-analysis-on.net, 2020)*

Payables turnover = 169,559 ÷ 42,296 = 4.01

Payables turnover analyses how quickly a business pays off its creditor-payable accounts. A low payable turnover may indicate either lenient credit terms or a company's inability to pay its creditors. A high payable turnover might mean that a business pays creditors too soon or can take advantage of early payment discounts.

Since 2017 Apple Inc. has increased their receivable turnover from 2.88 to 4.01. This mean that in the year 2020 Apple Inc. has paid its average accounts payable balance 4 times.

Figure 19: Payable turnover



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

4.3.4.4. Total Asset Turnover

Table 22: Total asset turnover

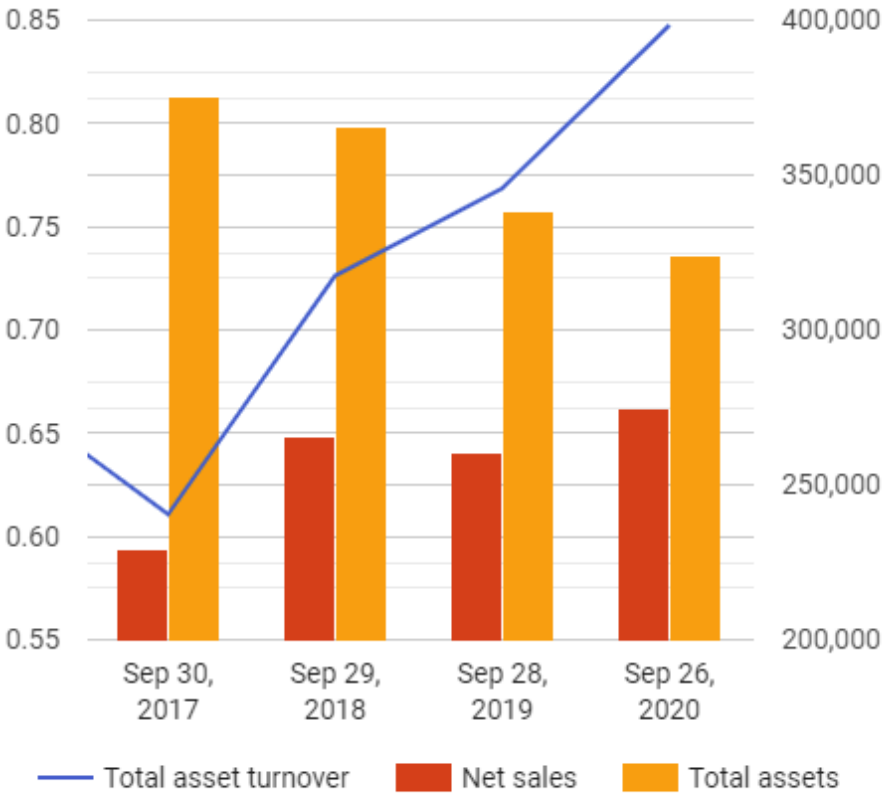
	Sep 26, 2020	Sep 28, 2019	Sep 29, 2018	Sep 30, 2017
Selected Financial Data (US$ in millions)				
Net sales	274 515	260 174	265 595	229 234
Total assets	323 888	338 516	365 725	375 319
Activity Ratio				
Total asset turnover	**0.85**	**0.77**	**0.73**	**0.61**
Benchmarks				
Total Asset Turnover, Competitors				
Cisco Systems Inc.	0.52	0.53	0.45	0.37
Intel Corp.	0.51	0.53	0.55	0.51
Micron Technology Inc.	0.40	0.48	0.70	0.58
NVIDIA Corp.	0.63	0.88	0.86	0.70

Source: *(https://www.stock-analysis-on.net, 2020)*

Total asset turnover = 274,515 ÷ 323,888 = 0.85

Total asset are all the assets listed on the balance sheet of a company, both operating and non-operating (current and long-term). The total assets turnover is an indicator of how successfully a corporation uses its total assets. A high ratio shows that a business uses its total assets very effectively or that, to begin with, it does not own many assets. A low ratio implies that too much money is tied up in assets and that revenue generation assets are not being used effectively. Total asset turnover ratio of Apple Inc. increased between 2018 and 2019 and between 2019 and 2020.

Figure 19: Total Asset Turnover



Source: *Own calculation (https://www.stock-analysis-on.net, 2020)*

4.4. Technical Analysis

Technical analysis utilizes statistical patterns, such as moving averages, obtained from trading activities. Essentially, technical analysis assumes that the price of a security already represents all the details available to the public and relies instead on statistical analysis of price changes. Technical analysis tries to understand the market sentiment behind price movements by searching for trends and patterns instead of evaluating the fundamental attributes of a security.

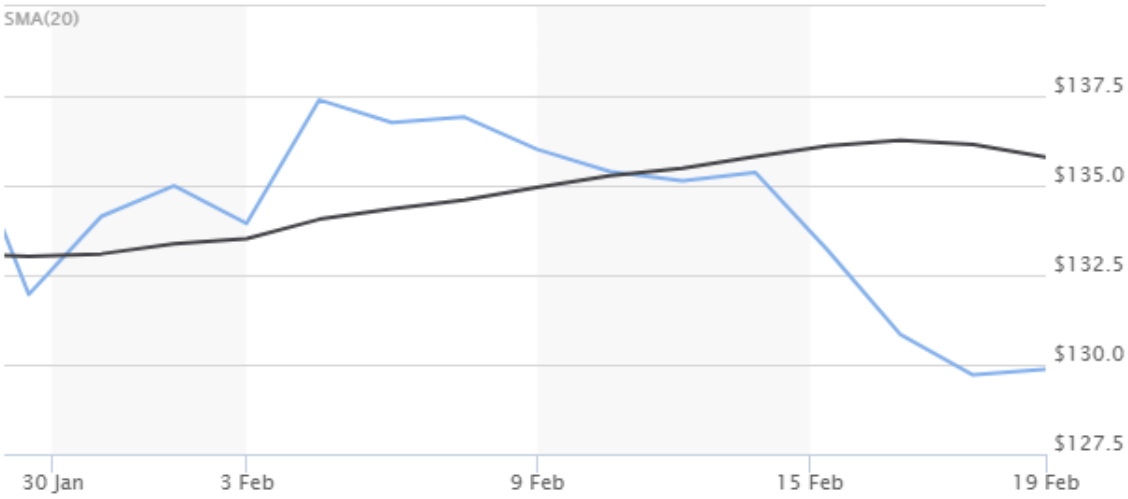
4.4.1. Simple Moving Average

The Simple Moving Average (SMA) refers to the average closing price of a stock for a certain period of time. The explanation why the average is called "moving" is that the price of the stock changes continuously, so the moving average changes accordingly. In technical analysis, SMA is one of the key indicators and is typically the easiest moving average to build.

4.4.1.1. Simple Moving Average (20 days)

Figure 19 shows Apple Inc's moving average with a period of 20 days. This method takes into account the importance of each digit measured in the calculation. The 20- day moving average shows a short-term review and shows signals when investors should buy and sell shares.

Figure 19: SMA 20



Source: Own calculation *(https://www.marketwatch.com, 2020)*

4.4.1.2. Simple Moving Average (50 days)

Figure 20 shows Apple Inc's simple moving average in the period of 50 days. Considering the 50 days period gives more accurate information for such a long period with almost the same result. Figure 20 shows that even in the bigger range, Apple Inc. stocks are constantly growing.

Figure 20: SMA 50

Source: *Own calculation (www.marketwatch.com, 2020)*

4.4.2. Relative Strength Index

RSI is another indicator showing the relative change in price that describes the price of security compared to its past performance in order to determine its internal strength. Values move in the area between 100 and 40, the upper value indicates resale. The advantage of this method is the comparison of the price trend, which, if in the peak, and the RSI is not higher than in the previous peak, which is an indicator of the pending reversal. Apple Inc. registers higher volatility, which is why a range of 20 to 80 is used. Figure 21 shows the apparent time delays between peak RSI values and a decline in the stock price in the 14 days range.

Figure 21: RSI

Source: *Own calculation (finance.yahoo.com, 2020)*

4.4.3. Bollinger Bands

Figure 22 shows usage of Bollinger Band with Relative strength index (RSI). Which improves bands justifiable in a better way without wrong flags. In Figure 22 used Bollinger Bands to forecast when it would be better buy or sell shares. Also Figure 22 shows RSI indicator, which help to understand correct signal. January 29th, 2021 stock price of AAPL increase upper limits and it's called "Bull Market.

This shows that it's the best time to sell stocks. From January 26th. Nowadays, stock price slightly going down. It's shows that AAPL stock price was above Bollinger Band median which mean that stock price was on the "Bull Market" and sometimes it was more than Bollinger Band Top.

Figure 22: Bollinger Band

Source: *Own calculation (finance.yahoo.com, 2020)*

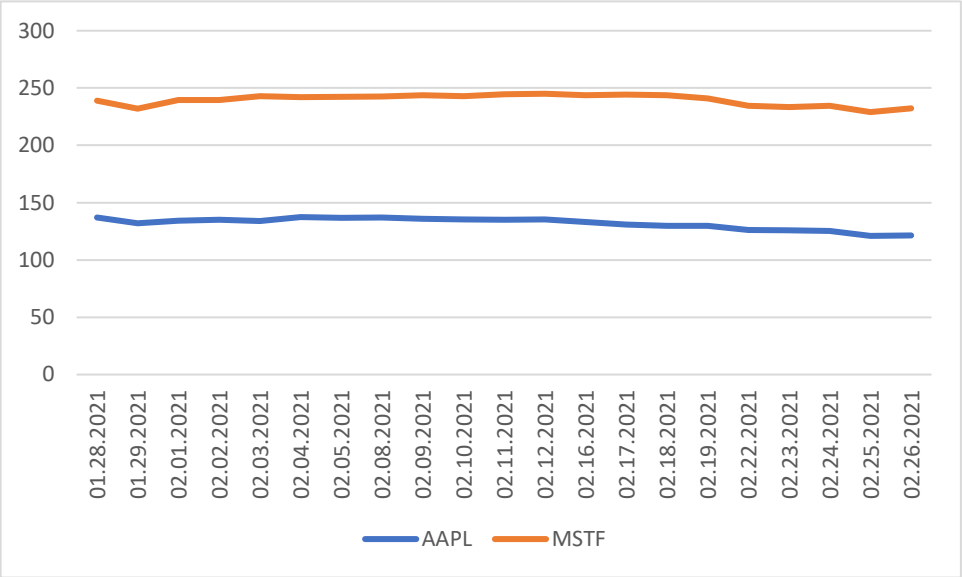
4.5. Correlation Analysis

Correlation in the financial and investment industries is a statistical indicator of how often the two stocks are moving in relation to each other. Correlations are used as a correlation coefficient for advanced portfolio management which has a value between +1.0 and +1.0.

4.5.1. Stocks correlation between and Apple Inc. and MSFT

Correlation analysis was calculated in Microsoft Excel 2016 using correlation tools. Data stock of Apple Inc. and Microsoft Corporation were use period from 28th of January 2021 till 26th of February 2021. Stock price were taking from NASDAQ.com.

Figure 23: Correlation between Apple Inc. and MSFT



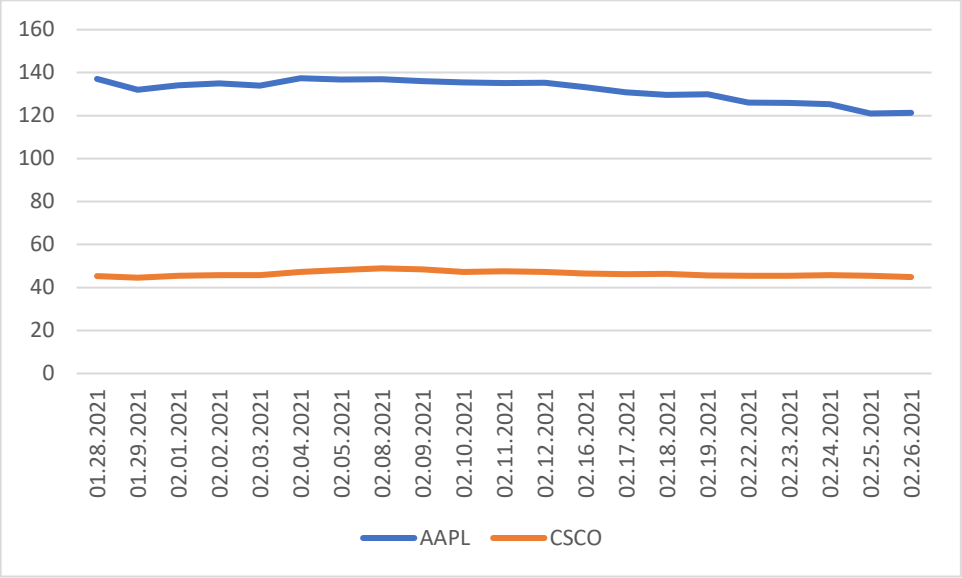
Source: *Own calculation (nasdaq.com, 2020)*

The result of Correlation analysis is 0.762722944 which mean that there is a strong positive correlation between them.

4.5.2. Stocks correlation between and Apple Inc. and Cisco Systems, Inc.

Correlation analysis was calculated in Microsoft Excel 2016 using correlation tools. Data stock of Apple Inc. and Cisco Systems, Inc., were use period from 28th of January 2021 till 26th of February 2021. Stock price were taking from NASDAQ.com.

Figure 24: Correlation between Apple Inc. and Cisco Systems, Inc



Source: *Own calculation (nasdaq.com, 2020)*

The result of Correlation analysis is 0.60992151 which mean that there is a strong positive correlation between them.

5. Conclusion

H_1: Quick ratios has increased since 2017

H_2: There is strong correlation between Apple and Microsoft stocks

H_3: Simple Moving Average shows that stock price is increasing

After a careful and detailed analysis, the three hypotheses that have been put forward have been proven true and accurate. Firstly, the Quick Ratios have steadily increased from 2017 to 2020. This is an excellent gauge for assessing a company's short-term strength, and with the robust and stable growth of Apple's quick ratio, the company is poised to successfully weather the current economic conundrum.

The second hypothesis is equally correct, and further demonstrates Apple's secure foothold in the tech sector. By successfully determining a correlation between Apple's stock growth, with that of fellow tech giant Microsoft, it establishes Apple as a clear leader in the sector. In addition to this, it gives insight to the high likelihood of the tech sector's continued rise.

Finally, with additional data received from the SMA 50 analysis, Apple's stock price is on track to continue to increase. However, the recent drop in the second half of February may indicate slight, temporary decrease. This is primarily due to a recent, rapid and sizable increase in treasury yields. This may have caused premature selling, as investors could see this as an overall weakness in the market, and since the tech sector is considered riskier than other more staple sectors. More short-term analysis may be warranted to determine a more accurate prediction.

In addition to the primary hypotheses proven to have high levels of accuracy, there are other aspects of the secondary analyses, that further indicate Apple's overall strength. The first of these indications comes in the form of an increase of 18% in net income from the period of 2017 to 2020. This gradual growth is a clear indication of Apple's continued success. The second indication is an increase on the Return on Equity of more than 50%. ROE is an excellent measurement when compared to ROE of the company's peers. An in the case of the Tech Sector, where the industry average is 25%, Apple is outperforming the majority of its competition. And, finally it is crucial to mention that Apple's inventory turnover has increased by 43% in the period of 2017 to 2020. This marker shows, both a short-term and long-term increase in the demand for Apple products. With the above indicators clearly pointing towards Apple's continued growth, it is very clear to most investors that Apple's stock will continue to grow.

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